



Certification and control of environmental protection

Work program of the discipline (Syllabus)

Details of the discipline

Level of higher education	<i>second (master's)</i>
Field of knowledge	<i>16 Chemical and bioengineering</i>
Speciality	<i>161 Chemical technologies and engineering</i>
Educational program	<i>Industrial ecology and resource-efficient clean technologies</i>
Discipline status	<i>Custom</i>
Form of study	<i>full-time (day)/remote/mixed</i>
Year of preparation, semester	<i>1st year, spring semester</i>
Scope of discipline	<i>5 credits (150 hours)</i>
Semester control/control measures	<i>Exam/modular test paper</i>
Schedule of classes	<i>4 hours a week (3 hours and lectures and 1 hour of practical classes)</i>
Language of instruction	<i>Ukrainian</i>
Information about the course / teachers	Lecturer: https://eco-paper.kpi.ua/pro-kafedru/vykladachi/nosachova-yuliya-viktorivna.html Practice: https://eco-paper.kpi.ua/pro-kafedru/vykladachi/nosachova-yuliya-viktorivna.html Lecturer: https://eco-paper.kpi.ua/pro-kafedru/vykladachi/radovenchik-vyacheslav-mikhajlovich.html
Course placement	https://do.ipo.kpi.ua/course/view.php?id=6069

The program of the discipline

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

The subject of the discipline is the implementation of measures to improve the conditions and quality of human life, control and inspection of production activities, which will encourage entrepreneurs to develop and implement environmentally friendly technologies in order not only to increase competitiveness, but also to alleviate the negative environmental consequences.

The purpose of studying this discipline is to form in students a set of knowledge, skills, abilities necessary to control and assess the degree of environmental safety of economic activity and the environmental situation prevailing at the facilities (territories); prevention and termination of the negative impact of a certain type of anthropogenic activity on human health and the environment; identification of priorities for solving environmental problems and preparation of substantiated ecological and economic recommendations on the strategy and tactics for solving environmental problems.

In accordance with the goal, the training of masters and specialists requires the strengthening of students' competencies:

- To be able to organize work related to environmental assessment, environmental protection and optimization of nature management.

The main tasks of the discipline.

According to the requirements of the educational-professional and educational-scientific program, students after mastering the discipline must demonstrate the following learning outcomes:

- To organize their work and the work of the team in the conditions of industrial production, design units, research laboratories, determine goals and effective ways to achieve them, motivate and train staff;

- To know modern approaches to the organization of environmentally friendly production, reorganization and reconstruction of existing industries from the standpoint of resource saving.

Prerequisites and post-requisites of disciplines (place in the structural and logical scheme of education according to the relevant educational program)

The discipline "Certification and control of environmental protection" is preceded by academic disciplines studied in the bachelor's degree. Academic discipline "Certification and control of environmental protection" provides the defense of the master's thesis.

2. CONTENT OF EDUCATIONAL MATERIAL

Part I

Section 1. Regulatory framework of expertise on compliance with environmental protection legislation.

Topic 1. General characteristics of the State bodies for monitoring compliance with environmental legislation in production

Topic 2. Conducting inspections on environmental protection

Topic 3. Identification of violations and application of measures of influence to violators of environmental legislation

Topic 4. Cases of detection of facts of violation of environmental legislation. Registration (fixation) of the fact of violation.

Topic 5. Seizure of tools for illegal extraction (procurement) of natural resources, natural resources themselves and products produced from them

Section 2. Types and methods of inspections of production for environmental protection.

Topic 6. Inventory of emissions of pollutants in the enterprise and report on it

Topic 7. Ecological control over the state of atmospheric air

Topic 8. Environmental control over the state of water resources and water use in production

Topic 9. Environmental control over the impact of livestock farms on water bodies

Topic 10. Implementation of state control over the transportation, storage and use of pesticides and mineral fertilizers

Topic 11. Organization of border environmental control.

Part II

Section 1. Theoretical and legal foundations of standardization in Ukraine.

Topic 1. Prerequisites for the emergence of standardization.

Topic 2. Legislative and regulatory framework of the national standardization system.

Topic 3. Information support in the field of standardization.

Topic 4. The concept of "standardization", its essence. Subjects and objects of standardization. categories of regulatory documents.

Section 2. Standards as a tool for environmental management.

Topic 5. Environmental management.

Topic 6. Eco-labeling.

Topic 7. Standardization of waste management.

Topic 8. Standardization of atmospheric air quality.

Topic 9. Standardization of water quality.

Topic 10. Standardization of soil quality.

Section 3. Basic principles of confirming the compliance of environmental management systems with environmental requirements.

Topic 11. Terms and definitions of concepts in the field of conformity assessment.

Topic 12. Activities of Ukrainian technical committees.

Topic 13. Cooperation at the world level.

Learning materials and resources

Basic

1. Klimenko M.O., Prischepa A.M., Stetyuk L.M., Brezhytska O.A. E. environmental inspection. Kherson: Oldie+, 2020. 400 p.

2. Environmental inspection. Textbook on practical (seminar) classes [Electronic resource]: textbook. posib. for stud. specialties 101 "Ecology" OP "Ecological safety", 161 "Chemical technologies and engineering" OP "Industrial ecology and resource-efficient clean technologies" / KPI them. Igor Sikorsky; compiled by: Y. V. Nosachova, T. O. Shablii. – Electronic text data (1 file: 2.40 MB). – Kyiv: KPI them. Igor Sikorsky, 2020. – 230 p.

3. Petrovska M. Standardization, metrology and certification of the environment: textbook posib. / M. Petrovska. - Lviv : Publishing Center of Ivan Franko National University of Lviv, 2010. - 420 p.

4. Standardization, metrology, certification and quality management: Textbook / L.V. Bal-Prylypko, N.M. Slobodanyuk, G.E., Polishchuk, M.Z. Paska, V.G. Burak. - K.: CP "Komprint" - 2017. - 573 p.

5. Tarasova V.V., Malinovsky A.S., Rybak M.F. Metrology, standardization and certification. Textbook /Zag. ed. V.V.Tarasova. – K.: Center for Educational Literature, 2006. – 264 p.

Secondary

1d. Regulations on the State Environmental Inspectorate. – Confirmed by the Resolution of the Cabinet of Ministers of Ukraine as amended on June 16, 2004, No. 770.

2d. Regulations on the State Environmental Inspectorate in regions, cities of Kyiv and Sevastopol. – Approved by the order of the Ministry of Environment of December 19, 2006, No. 548.

3d. Regulations on the State Environmental Inspectorate of the Sea of Azov. – Confirmed by the order of the Ministry of Environment of February 23, 2004, No. 64.

4d. The procedure for organizing and conducting inspections of business entities for compliance with the requirements of environmental legislation. – Confirmed by the order of the Ministry of Environment of September 10, 2008, No. 464.

5d. Methodical recommendations "On the procedure for conducting inspectorate inspections on compliance by nature users with the requirements of legislation on environmental protection" – Confirmed by the order of the Main Environmental Inspectorate of the Ministry of Environment of March 28, 1994, No7.

6d. *Methodical recommendations "On the procedure for detecting violations and applying measures of influence to violators of environmental legislation"* – Collection of methodological recommendations on state control over compliance with the requirements of environmental legislation" – Edited by A.M. Korenchuk, V.D. Solodkyy. – Chernivtsi: Zelena Bukovyna, 1996. – p. 17-42.

7d. Sivak V.K. *Environmental Inspection. Textbook posib./V.K. Sivak, V.D. Solodkyy.* – Chernivtsi: Zelena Bukovyna, 2003. – 200 p.

8d. *The procedure for restriction, temporary prohibition (suspension) or termination of the activities of enterprises, institutions, organizations and objects in case of violation of the legislation on environmental protection.* – Approved by the Resolution of the Verkhovna Rada of October 29, 1992, No. 2751 – XII.

9d. *List of activities related to environmental measures.* – Approved by the Resolution of the Cabinet of Ministers of Ukraine as amended on December 17, 2004, No. 1700.

10d. *Law of Ukraine "On Air Protection".* – Collection of Legislative Acts: Legislation of Ukraine on Environmental Protection. – Kyiv, Parliamentary Publishing House. – 2006, p. 79-95.

11d. *Law of Ukraine "On Land Protection".* – Collection of Legislative Acts: Legislation of Ukraine on Environmental Protection. – Kyiv, Parliamentary Publishing House. – 2006, p. 96-119.

12d. *Law of Ukraine "On State Control over the Use and Protection of Land"* – Collection of Legislative Acts: Legislation of Ukraine on Environmental Protection. – Kyiv, Parliamentary Publishing House. 2006, p. 120-129.

13d. *Regulation "On establishing the levels of harmful effects of physical and biological factors on atmospheric air"* – Confirmed by the Resolution of the Cabinet of Ministers of Ukraine of December 31, 1993, No. 1092.

14d. *Instruction "On the content and procedure for drawing up a report on the inventory of emissions of pollutants at the enterprise."* – Approved by the order of the Ministry of Environment of February 10, 1995, No. 7.

15d. *Methodical recommendations "On time standards in the implementation of work on state control over compliance with environmental legislation"* – Collection of methodological recommendations on state control over compliance with the requirements of environmental legislation. – Edited by A.M. Korenchuk, V.D. Solodkyy. – Chernivtsi: Zelena Bukovyna, 1996. – p. 201-213.

16d. *Instruction "Requirements for the placement and equipment of sampling sites from gas-dust flows."* – Ibid. – pp. 214-216.

17d. *Regulations "On the conduct of the operation "Clean air".* - There. Same. – pp. 176-188.

18d. *Instruction "On water sampling".* – Ibid. – pp. 217-220.

19d. *Methodical recommendations "On the implementation of environmental control over the impact of livestock complexes on water bodies."* – Ibid. – p. 128 – 134.

20d. *The procedure for planning and conducting inspections on the implementation of state control over the use and protection of land.* – Confirmed by the order of the State Committee on Land Resources of December 12, 2003, No. 312.

21d. Nekhoroshkov V.P. *Environmental inspection: educational assistant.* Odessa State Academy of Cold. 2011 – 156 p.

22d. *Methodical instructions for practical (seminar) work and for the implementation of independent work on the course "Environmental Inspection" for students of the specialty 7.04010601, 8.04010601 Ecology and environmental protection.*

23d. *Instruction on registration by state inspectors for control over the use and protection of lands of the State Land Inspectorate and its territorial bodies of materials on administrative offenses.* – Approved by the order of the State Committee on Land Resources of April 28, 2009, No. 205.

24d. *The procedure for establishing standards for the fee for environmental pollution and the collection of this fee.* – Approved by the Resolution of the Cabinet of Ministers of Ukraine dated March 1, 1999, No. 303.

25d. *Instruction on the procedure for calculating and paying the fee for environmental pollution.* – Approved by the order of the Ministry of Environment and the State Tax Administration of July 19, 1999, No. 544/3837.

26d. *Methodology for calculating the amount of compensation for losses caused to the state as a result of violation of the legislation on the protection and rational use of water resources.* – Approved by the order of the Ministry of Environment of July 20, 2009, No. 389.

27d. *Legislation of Ukraine on Environmental Protection. Collection of Legislative Acts.* – Kyiv, Parliamentary Publishing House, 2006. – 200p.

28d. *Rules of technical operation of gas treatment plants, approved by the Order of the Ministry of Environmental Protection of Ukraine dated February 6, 2009 No. 52, registered in the Ministry of Justice of Ukraine on April 13, 2009 under No. 327/16343*

29d. *Methods for determining the amount of damage caused to land, soils as a result of emergencies and / or armed aggression and hostilities during martial law.* Order of the Ministry of Environmental Protection and Natural Resources of Ukraine on April 4, 2022 No 167.

30d. Tsutsyura, S. V. *Metrology, fundamentals of measurements, standardization and certification : textbook posib. / S. V. Tsutsyura, V. D. Tsutsyura.* - 3rd ed., stereot. - K. : Knowledge, 2006. - 242 p.

31d. Bychkivskyy, R. V. *Metrology, standardization, quality management and certification: textbook / R. V. Bychkivsky, P. G. Stolyarchuk, P. R. Gamula.* - 2nd ed., ed. and additional - Lviv : Lviv. Polytechnic, 2004. - 560 p.

32d. Prutsakova O.L. *Ecological labeling of goods safe for consumption / Ecological Bulletin.* – 2004. – P.15 – 19.

33d. Klimentenko M.O., Skrypchuk P.M. *Metrology, standardization and certification in ecology.* – K: Academy, 2006. – 368 p.

34d. Polishchuk E.S., Dorozhovets M.M., Yatsuk V.O. *Metrology and measuring equipment.* – Lviv, 2003. – 544 p.

Educational content

5. Methods of mastering the discipline (educational component)

Lectures

Lectures are aimed at:

- providing modern, holistic, interdependent knowledge of the discipline "Certification and control of environmental protection", the level of which is determined by the target setting for each specific topic;
- ensuring in the process of the lecture the creative work of students together with the teacher;
- education of students' professional and business qualities and the development of their independent creative thinking;
- formation of students' necessary interest and providing direction for independent work;
- determination at the modern level of development of science and technology in the field of environmental protection, forecasting their development for the coming years;
- reflection of the methodological processing of the material (selection of the main provisions, conclusions, recommendations, clear and adequate to their formulations);
- use for demonstration of visual materials, combination, if possible, them with a demonstration of results and samples;
- teaching research materials in a clear and high-quality language in compliance with structural and logical connections, explaining all newly introduced terms and concepts;
- accessibility for perception by this audience.

No s/n	The title of the lecture topic and the list of main issues (list of didactic tools, references to literature and tasks for the ISW)	Number of hours
<i>Part I</i>		
1	<p>General characteristics of the State bodies for monitoring compliance with environmental legislation in production</p> <p>General information about state environmental control bodies. Powers and rights of the State (Main Environmental Inspectorate (State Environmental Inspection). Powers of the State Environmental Inspectorate. Rights of the State Environmental Inspectorate. Powers and rights of the State Environmental Inspectorates in the regions, the city of Kyiv (hereinafter – the Inspections). Powers of Inspections. Rights Inspections. Inspection management.</p> <p>Literature: [1d] pp. 10-12, 1d, 2d, 3d [7d] pp. 8-10.</p> <p>The task at the ISW is to consider the competence of state bodies of local self-government in the field of environmental protection 2d</p>	2
2	<p style="text-align: center;">Conducting inspections on environmental protection</p> <p>Forms of notification of the scheduled inspection and referral to the inspection. Start verification. The course of the check. Registration of the check. Forms of verification documents (Act of verification of compliance with the requirements of environmental legislation, Order, Submission for issuance, suspension or cancellation of a permit, limit, quota).</p> <p>Literature: [1] pp.62-88; [4d]</p> <p>The task for the ISW is the powers possessed by public inspectors for the protection of the NPS. To consider the forms of statistical reporting of economic objects for the protection of nps [1] pp.46-61, [14d]</p>	2
3	<p style="text-align: center;">Identification of violations and application of measures of influence to violators of environmental legislation</p> <p>Cases of detection of facts of violation of environmental legislation. Registration (fixation) of the fact of violation. The procedure for applying measures of influence.</p> <p style="text-align: center;">Seizure of tools for illegal extraction (procurement) of natural resources, natural resources themselves and products produced from them</p> <p>Seizure of tools for illegal extraction (procurement) of natural resources. Seizure of illegally extracted (harvested) natural resources or products produced from them. Storage of seized tools for illegal extraction (procurement) of natural resources, floating means, weapons and ammunition. Storage of illegally extracted (harvested) natural resources or products made from them. Sale of illegally extracted (harvested) natural resources or products made from them.</p> <p>Literature: [1] pp. 72-76; 6d, 8d, 26d</p> <p>The task of the ISW is to characterize the procedure for the extraction of illegally extracted natural resources or products produced from them [6d]</p>	2
4	<p style="text-align: center;">Inventory of emissions of pollutants in the enterprise and report on it</p> <p>What regulates the inventory and reporting? Basic terms and their definitions. The order of the inventory. The content of the report. Annexes to the instruction "On the content and procedure for drawing up a report on the inventory of emissions of pollutants in the enterprise."</p> <p>Literature: [21d] pp. 75-91, [14d]</p> <p>The task of the ISW is to analyze the methods for determining pollutants in the enterprise [21d], art. 64-65, 96-99, [16d], [18d]</p>	2
5	<p style="text-align: center;">Ecological control over the state of atmospheric air</p> <p>Features of inspections of stationary and mobile sources of pollution. The main violations of the legislation on the protection of atmospheric air.</p> <p>Literature: [1] pp. 264-290; [21d] art. 91-100; [28d].</p>	2

	<i>The task of the ISW is to characterize the criteria for rationing the quality of the environment in the field of air protection [13 d].</i>	
6	<p align="center">Environmental control over the state of water resources and water use in production</p> <p><i>Conducting an inspection on potential sources of contamination of surface and groundwater and the general sanitary condition of the facility. How water protection checks are carried out Features of checking reclamation systems. The main violations in the field of water legislation.</i> Literature: [1] art. 145-171; [21d] art. 91-100. <i>The task of the ISW is to characterize the ownership of water [27d]</i></p>	2
7	<p align="center">Environmental control over the impact of livestock farms on water bodies</p> <p><i>Features of water pollution by livestock complexes. Water supply complexes and water consumption rates. The main schemes of processing manure. General information. Treatment of manure in pig-breeding complexes. Processing manure on cattle complexes. Objects of inspection at livestock farms. Information on the object. The state of water supply. The state of drainage. Treatment and storage of manure, wastewater disposal. Emergency pollution. Registration of the results of the check.</i> Literature: [21d]art. 102-110, [19d] <i>Tasks for the ISW: Processing of manure on cattle complexes – [21d] art. 107</i></p>	2
8	<p align="center">Implementation of state control over the transportation, storage and use of pesticides and mineral fertilizers</p> <p><i>Definition of the concept of "pesticides", a group of pesticides. Checking the storage of pesticides and mineral fertilizers. Checking the transportation of pesticides and mineral fertilizers. Checking the use of pesticides and mineral fertilizers. The procedure for conducting a comprehensive inventory of places of accumulation of prohibited and unsuitable for use in agriculture chemical plant protection products.</i> Literature: [1]art. 331-333 <i>The task of the ISW is to characterize the procedure for conducting a comprehensive inventory of the places of accumulation of unknown, prohibited and unsuitable for use in agriculture chemical plant protection products [14d]</i></p>	2
9	<p align="center">Organization of border environmental control.</p> <p><i>Conceptual foundations of state environmental control at the border. The main tasks of the environmental control service at the border. Goods and shipping documents subject to border environmental control. Border environmental control of dangerous goods and waste. Radiation border control. Levels of control.</i> Literature: [1]pp. 311-361 <i>The task at the ISW is to characterize the procedure for conducting border environmental control of objects of flora and fauna. [29d]</i></p>	
	Just	18
Part II		
1	<p><u>Prerequisites for the emergence of standardization.</u> History of standardization. Metrological system of Kievan Rus. Development of standardization on the territory of Ukraine. Sioux standardization facilities in Ukraine. Literature: 3. p. 5-22; 4. C. 88-98. <i>The task at the ISW is the General Principles of International Standardization. Development of international standards. [33 d.s. 188-199; 31d. C. 372-386].</i></p>	2
2	<p><u>Legislative and regulatory framework of the national standardization system.</u> Complex of standards "National Standardization". Literature: 3. p. 23-32; 4. C. 195-226. <i>The task of the ISW is the Organization of work on standardization in Ukraine. [31d. s. 19-25; 33d. pp. 261-271].</i></p>	2
3	<p><u>Information support in the field of standardization.</u> Scientific centers and structural subdivisions of Derzhspozhyvstandard of Ukraine. International Classification of Standards. Methods and objects of standardization. Literature: 3. p. 32-40; 4. C. 105-110. <i>Tasks for the ISW – The procedure for the development, adoption, verification, amendment and revision of standards. [31d. s. 26-30; 33d. s. 195-199].</i></p>	2
4	<p><u>The concept of "standardization", its essence.</u> Subjects and objects of standardization. Categories of normative documents on standardization and in the form of standards. Rules for the construction of regulatory documents and their structure. Literature: 3. p. 41-64; 4. pp. 88-105; 5. PP. 79-88. <i>Tasks at the ISW – Formation and development of metrology, standardization and certification. 19-22; 33d. s. 204-209].</i></p>	2
5	<p><u>Standards as a tool for environmental management.</u> System of environmental standards. Environmental management. Technical committees. Standards levels. Regulatory documents in the field of environmental management. Model of the environmental management system. Assessment of environmental problems. Life cycle assessment. Audit programs. Literatura: 3. p. 81-134; 5. s. 137-143. <i>The task at the ISW is the role of standardization in environmental protection. Verification of measuring instruments [33d. s. 204-209; 31d. C. 32-34].</i></p>	6

6	<u>Eco-labeling.</u> Regulatory documents and general requirements. Purpose and rules. Eco-labeling signs. Literature: 3. p. 134-160; 4. C. 401-416; 5. pp. 243-249. <u>Task on the ISW</u> – Informing about compliance with the established requirements. Bar coding. Labeling of food additives [33d. s. 244-260; 31d. C. 391-427].	4
7	<u>Standardization of waste management.</u> Legislation on waste. Normative documents in the field of waste management. Tasks of standardization in the field of waste management. Literature: 3. c. 161-184; 5. pp. 137-142. <u>The task at the ISW</u> is the System of Environmental Standards in Ukraine. [33 d.s. 271-273].	2
8	<u>Standardization of atmospheric air quality.</u> Legislation in the field of air protection. Standards for environmental safety of atmospheric air. Literature: 3. pp.185-194; 4. pp. 281-284. <u>Tasks on the ISW</u> – Methods of environmental analysis. 84-935; 31d. C. 37-39].	2
9	<u>Standardization of water quality.</u> Standards in the field of use and protection of water. Operational control of wastewater. Automated quality systems of natural water. Classification of quality of surface and groundwater of Ukraine. Letter of cheers: 3. c. 195-244. <u>The task of the ISW</u> is the Harmonization of Water Quality Standards. [33d. p. 209-220; 34d. pp. 492-509].	4
10	<u>Standardization of soil quality.</u> Legislative acts in the field of land protection. Standards of pollution and fertility of soils. Main indicators of land use conditions. complex of standards in the field of soil protection. Agrochemical certification of land. Indicators of soil fertility. Literature: 3. c. 245-292; 5. pp. 143-156. <u>The task at the ISW</u> is the Standardization of agricultural products [3 3hp 220-231; 31 d.s. 290-302].	4
11	<u>Terms and definitions of concepts in the field of conformity confirmation.</u> Normative documents of Ukraine in the field of certification. Personnel certification. Ecological certification of territories. Quality management systems and environmental management systems. Literature: 3. p. 293-318; 5. C. 193-206. <u>The task of the ISW</u> is Certification of environmental management systems. Quality management. Certification system UkrSEPRO [33 d.s. 296-302; 31d.p.2 86-308].	2
12	<u>Activities of Ukrainian technical committees.</u> International organizations in the field of certification. Accreditation of conformity assessment bodies. Literature: 3. p. 337-343; 4. C. 303-316. <u>The task at the ISW</u> is the National Certification System of Ukraine. Participants in the certification process. Procedure for certification. Methods of certification [33d. s. 279-289].	2
13	<u>Cooperation at the world level.</u> Regional cooperation. International organizations in the field of accreditation. The essence, purpose and objects of environmental certification. Literature: 3. p. 344-356; 4.p.317-324; 5. pp. 232-242 . <u>Tasks at the ISW</u> – International practice of organizing activities in the field of certification and accreditation [33d. p. 306-320].	2
	Just:	36

Practical classes

In the system of professional training of students in this discipline, practical classes occupy 25% of the classroom load. use special terminology that allows you to test knowledge, so this type of work is an important means of operational feedback. Practical classes should perform not only cognitive and educational functions, but also contribute to the growth of students as creative workers in the field of environmental protection.

The main objectives of the cycle of practical classes:

- help students systematize, consolidate and deepen theoretical knowledge in the field of modern principles of urban ecosystem formation;
- teach students techniques for solving practical problems, promote mastering the skills and abilities of performing calculations, graphic and other tasks;
- teach them to work with scientific and reference literature and regulatory documents;
- to form the ability to learn independently, that is, to master the methods, methods and techniques of self-learning, self-development and self-control.

No s/n	The name of the topic of the lesson and the list of main questions (list of didactic support, references to literature and tasks for the ISW)	Number of hours
1	Calculation of the amount of compensation for losses caused to the state as a result of excessive emissions of pollutants into the air - calculations of excess emissions of pollutants into the atmospheric air are given; - the procedure for determining excess emissions of pollutants into the atmospheric air is considered; - the amount of compensation for losses for excessive emissions of pollutants into the atmospheric air is given. Literature: [2] pp. 6–7, [28d]. Tasks on the ISW. Rules of technical operation of gas treatment plants. [28d]	5

2	<p>Calculation of the amount of compensation for losses caused to the state as a result of violation of the legislation on the protection and rational use of water resources</p> <p>Pollution of water bodies by excessive discharges of pollutants into a water body with return water. Calculation of the mass of excess discharge of pollutants into a water body with return water. Calculation of the mass of oil and petroleum products dumped into a water body due to leakage or outpouring.</p> <p>Literature: [2] cm. 7-19, [27].</p> <p>Tasks on the ISW. Calculation of oil mass based on expert estimates. [2], 30–31</p>	5
3	<p>Modular control work</p>	2
4	<p>Determining the amount of damage caused by pollution and clogging of land resources due to violation of environmental legislation</p> <p>Literature: [2] pp. 47-60</p> <p>Tasks on the ISW. Determining the amount of damage caused to land resources as a result of hostilities. [29d]</p>	6
	Total hours	18

6. Independent work of the student

Independent work takes 52 % of the time to study the credit module, including preparation for the test. The main task of independent work of students is to master scientific knowledge in areas that are not included in the list of lecture issues through personal search for information, the formation of an active interest in a creative approach in educational work. the latest approaches to monitoring compliance with the requirements of environmental legislation in the implementation of production activities.

No s/n	The name of the topic submitted for independent study	Number of hours of ISW
<i>Part I</i>		
<i>Section 1. State bodies of environmental control and inspection, inspections</i>		
1	<p>Get acquainted with the main legislative acts in various fields of environmental protection. To consider the competence of state bodies of local self-government in the field of environmental protection.</p> <p>Literature: 1d -6d.</p> <p>The powers possessed by public inspectors for the protection of the NPS. To consider the forms of statistical reporting of economic objects for the protection of NPS</p> <p>Literature: □1□ art. 46-61, □□□□□</p> <p>Consider what legislative acts are guided by the state inspector in the preparation of the protocol</p> <p>Literature: □5d, 6d□</p>	5
<i>Section 2. Verification of enterprises and time standards for inspection</i>		
2	<p>To characterize the procedure for the seizure of illegally extracted natural resources or products produced from them</p> <p>Literature: □6d□ pp. 120-122</p> <p>To characterize the criteria for rationing the quality of the environment in the field of air protection.</p> <p>Literature: [13 d]</p> <p>Analyze the methods for determining pollutants in the enterprise</p> <p>Literature: [21d]pp. 64-65, 96-99, [16d], [18d]</p> <p>Characterize ownership of water</p> <p>Literature: [27d].</p> <p>Processing manure on cattle complexes.</p> <p>Literature: [21d] art. 107</p>	5
<i>Section 3. Implementation of state control over the protection of lands, forests and other plant resources</i>		
3	<p>Analyze legal documents in the field of land resources protection</p> <p>Literature: □20d□, □23d□□□□□□□□□□</p> <p>Characterize forest management in other countries</p> <p>Literature: □1□□art. 221</p> <p>Indicate the reasons for planning the shooting of wild animals</p> <p>Literature: □1□□art. 110-116</p> <p>To characterize the procedure for conducting a comprehensive inventory of places of accumulation of unknown, prohibited and unsuitable for use in agriculture chemical plant protection products</p> <p>Literature: □14d□</p>	4
<i>Section 4. The procedure for the establishment, calculation and payment of fees for environmental pollution</i>		
4	<p>Consider at the expense of whom the costs of laboratory research are covered</p>	4

	<p>Literature: □7d□ art. 76 Issuance, cancellation or termination of permits, limits and quotas. Literature: □24d, 25d, 27d□ Analysis of regulatory documentation that regulates citizens' access to environmental information Literature: □27d□</p>	
5	Test paper on sections 1-3	6
6	Exam preparation	30
	Total hours	54
<i>Part II</i>		
Section 1. Theoretical and legal foundations of standardization in Ukraine.		
1	<p>General principles of international standardization. Development of international standards. [33d.p. 188-199; 31d. pp.372-386]. Organization of work on standardization in Ukraine. The structure of state bodies as a means of ensuring the quality of life. [31d. p. 19-25; 33d. pp. 261-271]. The procedure for developing, adopting, verifying, amending and revising standards. The procedure for applying standards. [31d. p. 26-30; 33d. C. 195-199]. Formation and development of metrology, standardization and certification. The role of standardization in environmental protection [31d. p. 19-22; 33d. C. 204-209].</p>	8
Section 2. Standards as a tool for environmental management.		
2	<p>The role of standardization in environmental protection. Verification of measuring instruments [33d. p. 204-209; 31d. C. 32-34]. Informing about compliance with the established requirements. Bar coding. Labeling of food additives [33d. p. 244-260; 31d. pp.391-427]. The system of environmental standards in Ukraine. [33d.p. 271-273]. Methods of analysis of the environment. The procedure for the implementation of standards and state supervision over their compliance [33d.p. 84-935; 31d. C. 37-39]. Harmonization of water quality standards. Measurement of chemical composition and properties of substances. [33d. p. 209-220; 34d. pp. 492-509]. Standardization of agricultural products [33d.p. 220-231; 31d.p. 290-302].</p>	10
Section 3. Basic principles of confirming the compliance of environmental management systems with environmental requirements.		
3	<p>Certification of environmental management systems. Quality management. Certification system UkrSEPRO [33d.p. 296-302; 31d.pp.2 86-308]. National certification system of Ukraine. Participants in the certification process. The procedure for certification. Methods of certification [33d. p. 279-289]. International practice of organizing activities in the field of certification and accreditation [33d. p. 306-320].</p>	6
	Just:	24

Provision of program results by components of the educational component

Name PR	Lecture classes	Practical lessons, individual task
to master the basics of ecological engineering design and expert environmental impact assessment;	<p>Lecture 1,2-I. General characteristics of State control bodies over compliance with environmental protection legislation at factories Lecture 3,4,5-I. Detection of violations and application of measures of influence to violators of environmental legislation Lecture 2-II. Legislative and regulatory framework of the national standardization system. Lecture 5-II. Standards as a tool of environmental management.</p>	Practical lessons 1 - 4
to know up-to-date approaches to the organization of environmentally cleaner production, reorganization and reconstruction of existing production from the standpoint of resource conservation, taking into account the life cycle of the product.	<p>Lecture 6,7-I. Inventory of emissions of polluting substances at the enterprise and report on it Lecture 7,8,9-I. Ecological monitoring of atmospheric air</p>	Practical lessons 1 - 4

	Lecture 6. Environmental monitoring of the state of water resources and water use in production Lecture 7,8,9,10-II. Quality standards of environmental components.	
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Policy and control

7. Policy of the discipline (educational component)

Rules for attending classes and behavior in the classroom

Students are obliged to take an active part in the educational process, not to be late for classes and not to miss them without a good reason, not to interfere with the teacher to conduct classes, not to be distracted by actions that are not related to the educational process.

Rules for assigning incentive and penalty points

Rules for assigning incentive and penalty points.

- incentive points can be awarded by the teacher solely for the performance of creative work in the discipline or additional completion of online specialized courses with the receipt of the appropriate certificate:

- <https://www.coursera.org/learn/environmental-law>. Introduction to Environmental Law and Police

- <https://www.coursera.org/learn/solid-waste-management>. Municipal solid Wastes Management in Developing Countries

- <https://www.coursera.org/learn/international-water-law> International Water Law.

But their amount cannot exceed 10 % of the rating scale.

-penalty points in the framework of the discipline are not provided.

Deadlines and Rescheduling Policy

In case of debts in the discipline or any force majeure circumstances, students should contact the teacher through the available (provided by the teacher) communication channels to solve problematic issues and agree on an algorithm of actions for working out.

Academic Integrity Policy

Plagiarism and other forms of dishonest work are unacceptable. Plagiarism includes the lack of links when using printed and electronic materials, quotes, opinions of other authors. Unacceptable hints and write-offs when writing tests, conducting classes; passing the test for another graduate student; copying materials protected by the copyright system without the permission of the author of the work.

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

Academic Conduct and Ethics Policy

Students should be tolerant, respect the opinions of others, formulate objections in the correct form, constructively maintain feedback in the classroom.

The norms of ethical behavior of students and employees are defined in Chapter 2 of the Code of Honor of the National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute". Read more: <https://kpi.ua/code>

8. Types of control and rating system for evaluating learning outcomes (RSO)

Distribution of study time by types of classes and tasks in the discipline in accordance with the working curriculum:

Semester	Study time		Distribution of study hours				Control measures		
	Loans	acad. H.	Lecture	Practical	Lab. Rob.	ISW	MCT	Ocd	Semester control
2	5	150	54	18	-	78	1	-	Exam

The student's rating on the discipline consists of points that he receives for:

According to the full-time form of education, it is proposed to introduce a rating system for assessing the success of students mastering educational material from the credit module. The student's rating from the credit module "**Certification and control of environmental protection**" consists of points received for:

1)work in practical classes;

2)surveys at lectures;

3)two tests;

4)answers to the exam.

Semester control is an exam.

The system of rating (weight) points and evaluation criteria

Rating points system and evaluation criteria:

1. Express control at lectures:

Weight score –4.

The maximum number of points when interviewing at a lecture of at least 6 students is $4 \times 6 = 24$ points

Criteria for assessing students' knowledge:

Completeness and signs of response	Points
Clear and complete answer to the question	4
The answer made some inaccuracies or errors	3

<i>The answer does not contain the wording of terms, laws and formulas</i>	<i>1... 2</i>
<i>Answer not credited</i>	<i>0</i>

2. Modular control (R_m)

Weight score 10. The maximum number of points for all tests is 10 points \times 2 = 20 points. \times

Criteria for evaluating tests:

Completeness and signs of response	Points
<i>Clear and complete answer to the question</i>	<i>10</i>
<i>The answer made some inaccuracies or errors</i>	<i>5... 8</i>
<i>The answer does not contain the wording of terms, laws and formulas</i>	<i>4... 1</i>
<i>Answer not credited</i>	<i>0</i>

3. Practical work:

Weight score – 2. The maximum number of points for all practical work is equal to:

$2 \text{ points} \times 8 \text{ p/p} = 16 \text{ points}$.

Criteria for assessing students' knowledge:

Completeness and signs of response	Points
<i>For active and creative work</i>	<i>2</i>
<i>Fruitful work</i>	<i>1</i>
<i>Lack of work</i>	<i>0</i>

Calculation of the scale (R) of the rating:

The sum of the weight points of the control measures during the semester is:

$$R_c = 24 + 20 + 16 = 60 \text{ points.}$$

According to the results of educational work in the first 7 weeks, the "ideal student" should score 30 points. At the first certification (8th week), a student receives "enrolled" if his current rating is at least 20 points.

According to the results of educational work for 13 weeks of study, the "ideal student" should score 60 points. At the second certification (14th week), a student receives "enrolled" if his current rating is at least 40 points.

During the exam, students give answers to 4 questions, each of which is estimated at 10 points.

The maximum number of points is $4 \times 10 = 40$ points.

The component of the examination scale is 40% of R:

$$R_{ex} = 40 \text{ points.}$$

Thus, the rating assessment in the discipline is:

$$R = 60 + 40 = 100 \text{ points.}$$

Students who have received an F grade are not allowed to take the exam and must increase their rating.

A prerequisite for admission to the exam is the fulfillment of all ICRs.

Criteria for assessing students' knowledge at the exam:

Completeness and signs of response	Points
<i>Full answer to all questions</i>	<i>10</i>
<i>The answer made some inaccuracies</i>	<i>8... 9</i>
<i>This partial answer or in answers to questions and mistakes made</i>	<i>6... 7</i>
<i>This fuzzy answer: missing or made mistakes in formulas, reactions, terms and definitions</i>	<i>4... 5</i>
<i>Unsatisfactory answers to individual questions and the presence of significant errors on other questions are given</i>	<i>1... 3</i>
<i>Answer not credited</i>	<i>0</i>

Rating score from the exam:

$R = r_1 + r_2 + r_3 + r_4$	University scale
<i>95... 100 points</i>	<i>Perfectly</i>
<i>85... 94 points</i>	<i>Very good</i>
<i>75... 84 points</i>	<i>Well</i>
<i>65... 74 points</i>	<i>Satisfactory</i>
<i>60... 64 points</i>	<i>Enough</i>
<i>R < 60 points</i>	<i>Disappointing</i>
<i>If $r_c < 40$ points or other conditions for admission to the exam are not met</i>	<i>Not allowed</i>

9. Additional information on the discipline (educational component)

An approximate list of questions that are submitted for semester control

Part I

1. *Cite refers to the central state environmental control authorities?*
2. *Bring Committees and Services among state environmental control bodies?*
3. *Explain what can be included in the general information about the State Environmental Inspectorates?*
4. *Indicate what proposals are submitted to the Ministry of Environment by the State Environmental Inspectorate?*
5. *What are the regional state environmental inspections?*
6. *Explain what can be included in the general information about the Black Sea - Azov state environmental inspections?*
7. *Describe what regulates the inspections of business entities regarding their compliance with the requirements of environmental legislation?*
8. *Explain in what meaning the terms are used: Inspection Report, object of inspection, state inspector? inspectors their leadership?*
9. *How should the inspection of the object begin?*
10. *Describe what the state inspector is obliged to consider during inspections of the object?*
11. *Describe the materials and documents to be considered when checking the air protection activities of the enterprise?*
12. *Explain what is examined when checking the production units of the enterprise?*
13. *Determine what regulates the inventory and reporting on emissions of pollutants in the enterprise?*
14. *Highlight how the following terms are defined in the Instructions: release of a substance, inventory of emissions, emission power, source of air pollution, stationary source of air pollution, mobile source of air pollution, point source of emissions?*
15. *Cite what is studied during the inspection inspection of drainage from the enterprise?*
16. *Cite what is revealed when checking the sanitary condition of the facility and potential sources of contamination of surface and groundwater?*
17. *Indicate the features of water pollution by livestock complexes?*
18. *Establish the procedure for the implementation of water supply to livestock farms and the removal of manure from their premises?*
19. *Indicate what regulates the implementation of state control over the use and protection of land?*
20. *Describe what are the methods of exercising state control over the use and protection of land and types of inspections?*
21. *Describe the procedure for establishing, calculating and paying the environmental pollution fee?*
22. *Indicate whether the objects of calculation of the fee are, what does it cope for and who can be the payers of the fee?*
23. *Explain what regulates the determination of the amount of compensation for damages caused to the state as a result of violation of water legislation?*

Part I

1. *The role of standards in everyday life.*
2. *The origin and formation of standardization.*
3. *Establishment of standardization organizations in the world.*
4. *Legislative and regulatory framework of the national standardization system.*
5. *Principles of state policy in the field of standardization.*
6. *Information support in the field of standardization.*
7. *The purpose and objectives of Derzhspozhyvstandard of Ukraine.*
8. *Scientific institutions of Derzhspozhyvstandard of Ukraine.*
9. *Centers for Standardization, Metrology and Certification of Ukraine.*
10. *Priority directions of activity of Derzhspozhyvstandard of Ukraine.*
11. *Basic concepts in the field of standardization.*
12. *The main provisions of DSTU 1.1-2001 Standardization and related activities. Terms and definitions of basic concepts.*
13. *DSTU 1.0:2003 National Standardization.*
14. *The purpose of national standardization.*
15. *Tasks of national standardization.*
16. *Principles on which the state policy in the field of standardization is based.*
17. *Subjects of standardization.*
18. *The main functions of the central executive body on standardization.*
19. *The main functions of technical committees for standardization.*
20. *Objects of standardization.*
21. *Categories of regulatory documents.*
22. *The concept of "standard", its types.*
23. *The concept of "Codes of established practice."*
24. *The concept of "technical conditions".*
25. *Types of standards depending on the specifics of the object of standardization.*
26. *Normative documents of the national level.*
27. *Normative documents of organizations.*
28. *Normative documents in force in Ukraine.*
29. *Indices of regulatory documents.*
30. *Designation of national standards through which international and European standards have been introduced.*
31. *Rules for the construction of regulatory documents.*

32. *The structure of regulatory documents.*
33. *The system of environmental standards.*
34. *Legislative and regulatory support of environmental management in Ukraine.*
35. *International organization ISO.*
36. *ISO technical committees related to environmental protection.*
37. *Legislation of Ukraine in the field of waste management.*
38. *Normative documents in the field of environmental management in force in Ukraine.*
39. *Standards established in the field of waste management.*
40. *The main tasks of standardization in the field of waste management.*
41. *Legislation of Ukraine in the field of air protection.*
42. *The purpose of standardization in the field of air protection.*
43. *Standards in the field of air protection.*
44. *Legislation of Ukraine in the field of water protection.*
45. *Basic terms and definitions of concepts in the field of conformity assessment.*
46. *Normative documents on conformity assessment.*
47. *Confirmation of staff compliance.*
48. *Ecological certification of territories.*
49. *Implementation of quality management systems in the world.*
50. *Implementation of environmental management systems in the world.*
51. *Activities of Ukrainian technical committees.*
52. *Bilateral partnership of Ukraine.*

The work program of the discipline (syllabus):

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Approved by the Department ___E and TPP___ (Protocol No. 14 dated 8.06.2022)

Agreed by the methodical commission of the IHF (protocol No 10 dated 24.06.2022)