

MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE
SUMY NATIONAL AGRARIAN UNIVERSITY

Department of Veterinary Examination, Microbiology, Zoohygiene and Safety and Quality
of Livestock Products

" Approve "

Department of Vetsanexamination, microbiology,
zoohygiene, safety and quality
of animal products

Chair  (T. I. Fotina)
" 08 2020 "

CURRICULUM WORK PROGRAM (SILABUS)

PP. 01 Veterinary hygiene and sanitation of animals


Specialty: 211 Veterinary medicine

Educational program: Veterinary medicine

Faculty of Veterinary Medicine


2020 – 2021 academic year

Work program on Veterinary Hygiene and Animal Sanitation for students majoring in 211 Veterinary Medicine

Developers:  (Nahoma L.V. Doctor of Veterinary Science, Associate Professor)

The work program was approved at a meeting of the Department of Veterinary Examination, Microbiology, Zoohygiene and Safety and Quality of Livestock Products

Protocol № 18 of "25" June 2020

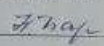
Chief of Vetsanexamination, microbiology, zoohygiene, safety and quality of animal products
Chair  (Doctor, prof. T. I. Fotina)

Coordinated by:

Guarantor of the educational program  (L.G. Ulko)

Dean of the Faculty  (O. I. Nechiporenko)

Methodist of the Department of Education Quality,

licensing and accreditation  (N. Baranik)

Registered in electronic data base 22.09 2020

© SNAU, 2020

© Nahoma L. V., 2020

1. Description of the discipline

Name of indicators	Field of knowledge, direction of training, educational and qualification level	Characteristics of the discipline	
		full-time education	
Number of credits - 4	Field of knowledge: <i>21 veterinarian for medicine</i>	<i>Normative</i>	
	Specialty: 211 <i>Veterinary medicine</i>		
Modules - 4		Year of preparation:	
Content modules: 4		2020 -2021	
		Course	
		3	
		Semester	
		5 th	6 th
The total number of hours is 120		Lectures	
Weekly hours for full-time study: classroom - 3 , 0,6 (5 th semester) / 0,6 (6 th semester) of independent student work – 3,3 (5 th semester) / 3,3 (6 th semester)	Educational degree : <i>master</i>	4	6
		Practical, seminar	
		-	
		Laboratory	
		6	4
		Independent work	
		50	50
	Type of control: <i>test</i>	Type of control: <i>exam</i>	

The ratio of the number of hours of classroom classes to independent and individual work is (%):

for full-time – 16,7 / 83,3 (10 / 50) - 5 semester

for full-time - 16,7 / 83,3 (10 / 50) - 6 semester

2. The purpose and objectives of the discipline

Purpose : is to study and master the student's theoretical and practical basis of the impact of normal and abnormal environmental factors on the body of animals, zoohygienic standards and rules for keeping, feeding, watering, care and breeding of various groups of productive farm animals, methods of studying environmental objects , ways to improve them.

Objectives: to form in applicants professional knowledge, skills and abilities to master the techniques of environmental assessment and microclimate of livestock facilities, analysis and prevention of animal diseases, including those caused by non-compliance with sanitary and

hygienic standards of maintenance, care and feeding, hygiene rules of keeping, feeding, watering, care and cultivation of various groups of productive farm animals, methods of research of objects of environment, ways of their improvement, analysis and carrying out of preventive actions of struggle against diseases of animals, rationing .

As a result of studying the discipline the student must:

know: scientific - theoretical bases of hygiene of farm animals, influence of external factors (temperature, humidity, gas composition of air, its movement, dust and microbial pollution of air, solar radiation, etc.) on health and vital activity of animals. Scientific and theoretical bases of biological, physical, chemical properties of soils, water, forages; physiological condition and productivity of animals. Sanitary and hygienic requirements for the location of livestock farms, their improvement, location of livestock facilities, their design features; hygienic value of properties of building materials, equipment, ventilation, heating; rules for caring for animals in the stable and summer periods of the year. Hygienic features of keeping different species of farm animals, according to the technologies of keeping different species of farm animals.

be able to: determine the indicators of the microclimate: (temperature, gas composition of air, humidity, bacterial air pollution, speed of its movement, lighting of premises, etc.). Determine with the help of devices, special laboratory tests physical and chemical properties: water, feed; develop measures aimed at improving the sanitary and hygienic conditions of animals . Conduct analysis and evaluation of farm projects, equipment; to control: the quality of construction, care for animals, compliance with hygienic requirements for keeping animals, operation of equipment; taking the necessary measures to eliminate hygienic violations. Conduct sanitary and hygienic assessment of the technology of keeping different species of animals; make certain decisions to eliminate technological and hygienic deficiencies.

3. Curriculum of the discipline

Approved by the Academic Council of SNAU on June 26, 2017, protocol № 18

Content module 1. Sanitary and hygienic requirements and assessment of the air environment.

Topic 1. Hygienic value of physical properties of air. Hygienic value of temperature, heat exchange of animals, hypothermia. Humidity, its hygienic value, hygrometric indicators. Air movement, its hygienic value, atmospheric pressure, solar radiation and its components. Ultraviolet and infrared rays are their hygienic value. Devices for measuring air temperature, enclosing structures. Methods for measuring air temperature, enclosing structures. Measurement of indoor air temperature. Measurement of temperature of enclosing constructions of premises. Devices for determining air humidity, their structure , rules of operation. Measurement of humidity in the room and the environment. Calculations of humidity. Hygrometric indicators , their definitions and calculations. Methods for determining wind roses. Calculations of wind roses. Determination of illuminance, devices, measurement of natural and artificial illumination Methods for determination of dust and bacterial air pollution. The concept of "dead zone", aerorumbogram, their practical application in intensive livestock technologies.

Topic 2. Hygienic value of air gas composition. Gas composition of atmospheric air and air of livestock premises. The main toxic gases: carbon dioxide, hydrogen sulfide, ammonia, methane. Their MPC. Weather , climate, microclimate. Acclimatization and adaptation of animals. Environmental protection . Methods for determination of CO₂ , NH₃ , H₂S in air . Introduction to titrimetric methods for determination of harmful gases. Determination of CO₂, NH₃, H₂S , acquaintance with other methods.

Content module 2. Sanitary and hygienic condition of soil water, fodder. Hygiene of water supply, feeding and protection of soil from pollution.

Topic 3. Sanitary and hygienic value of soils, their rehabilitation, self-cleaning, disinfection. Hygienic value of mechanical composition and physical properties of soils. Biological properties of soils. Biogeochemical enzootics of their prevention. Soil healing (self-cleaning, disinfection). The system measures with television and soil pollution from animal waste. Determination of mechanical composition of soils. Determination of physical properties of soils. Determination of the presence of organic matter in soils. Determination of nitrates in soils. Determination of chlorides in soils. Determination of soil homogeneity. Determination of bacterial and helminthological soil contamination.

Topic 4 . Hygienic requirements for water, water supply, watering of animals, its sanitary assessment. Hygienic requirements for feed and animal feed, prevention of feed poisoning. Water properties, pollution protection, and quality control. Water supply and watering of animals. Methods of drinking water and wastewater treatment. Rules of sanitary - topographic inspection of water sources. Instruments and rules for water sampling from different water sources. Acquaintance with devices, methods of water research. Determination of physical properties of water: odor, transparency, turbidity, color, etc. Introduction to the method of determining the chemical properties of water. GOST water quality. Determination of carbonate, constant and removable water hardness. Introduction to water disinfection methods. Hygienic requirements for animal feeding. Prevention of feed poisoning of animals. Sanitary and hygienic assessment of roughage. Sanitary and hygienic assessment of succulent feed. Sanitary and hygienic assessment of concentrated feed.

Content module 3. Sanitary and hygienic requirements for planning (design) of livestock facilities, building materials, ventilation, sewerage.

Topic 5. Zoohygienic requirements for the design of livestock facilities, building materials. Zoohygienic requirements for ventilation, heating, sewerage. Livestock facilities and their significance. Sanitary and hygienic requirements for the planning and construction of livestock facilities. Sanitary and hygienic control over the design and construction of livestock facilities. Sanitary and hygienic requirements for equipment and microclimate. Sanitary and hygienic requirements for ventilation. Sanitary and hygienic requirements for heating. Sanitary and hygienic requirements for sewerage. Placement plan for farms and cattle facilities. Plan for the location of farms and premises for pigs. Placement of farms and premises for sheep and poultry farms. Sanitary and hygienic requirements for building materials. Sanitary and hygienic requirements for individual structures of premises: foundation, walls, ceilings, floors, etc. Natural and artificial ventilation, calculation. Heating (heat balance) calculation. Types of sewers.

Topic 6. Sanitary and hygienic requirements for the territory of livestock farms, equipment, premises. Hygiene of animal care in the cold and warm period of the year. Sanitary and hygienic requirements for the territory of livestock farms. Arrangement of sanitary facilities of livestock farms. Summer systems for different species of animals, hygienic requirements. Systems for keeping different species of animals in the cold season, hygienic requirements.

Content module 4. Hygiene maintenance and care of cattle, pigs, k and n b we, poultry, fur animals and stall in the summer periods. Hygiene of fish farming, beekeeping .

Topic 7. Hygiene of cattle and pigs. Cattle housing systems and hygiene. Hygiene of young cattle breeding . Pig holding systems. Hygienic requirements for keeping different age and technological groups of pigs. Types of buildings, equipment. Hygiene of keeping and care of cattle in the stable and warm period of the year. Hygiene of young growth. Types of buildings, equipment in pig breeding. Conditions for keeping and caring for different age groups of pigs.

Topic 8. Hygiene of sheep, horses, poultry and fur animals. Hygiene of sheep keeping. Hygiene of horses. Hygiene of poultry keeping. Hygiene of keeping fur animals. Sanitary and hygienic requirements for premises. Sanitation equipment requirements

stables b , poultry houses and farms for breeding fur animals . Hygiene of sheep, horses, poultry and fur animals. Sanitary and hygienic requirements for premises. Hygiene of sheep, horses, poultry and fur animals.

Topic 9. Hygiene of pond fish farming.

Systems and directions of fish farms. Features of conditions of keeping, feeding and veterinary and sanitary measures at cultivation of fish. Water supply systems of fish ponds. Effect of physical and chemical factors on fish. Salt water regime. Features of keeping in the winter.

Topic 10. Hygiene in beekeeping.

Hygienic requirements for the location of the apiary. Production and auxiliary premises of the apiary. Types of hives. Requirements for their structure. Optimal conditions for keeping bees. Microclimate of hives. Features of wintering bees. Wintering in special premises and in the yard. Storage conditions for feed and honeycombs. Features of transportation of bees. Veterinary and sanitary measures in the apiary

4. The structure of the discipline

Names of content modules and topics	Number of hours (Full-time)					
	Total	Including				
		lect	pract	lab	ind	i.w.
1	2	3	4	5	6	7
Module 1. Content module 1. General hygiene. The air environment, its condition and hygienic estimation						
Topic 1. Hygienic value of physical properties of air	12	1		1		10
Topic 2. Hygienic value of gas composition of air	12	1		1		10
Together with content module 1	24	2		2		20
Module 2. Content module 2. Sanitary-hygienic condition of soil, water, feed. Hygiene water supply, feeding and soil protection from pollution.						
Topic 3. The sanitary-hygienic value of soils, their healing, self-cleaning, decontamination.	13	1		2		10
Topic 4. Hygienic requirements for water, water supply, drinking of animals, its sanitary assessment. Hygienic requirements for feed and animal feeding, prevention of poisoning by feed.	23	1		2		20
Together with module 2	36	2		4		30
Module 3. Content module 3. Sanitary and hygienic requirements for planning (designing) livestock buildings, building materials, ventilation, sewage. Sanitary and hygienic requirements for maintenance, care for animals, stress, their prevention.						
Topic 5. Zoo-hygiene requirements for the design of livestock buildings, building materials. Zoo-hygienic requirements for ventilation, heating, sewage.	9	1		1		10
Topic 6. Sanitary requirements for the territory of livestock farms, equipment, premises. Hygiene of animal care in the cold and warm period of the year.	13	1		1		10

Together with module 3	24	2		2		20
Module 4. Content module 4. Special hygiene. Hygiene of keeping and caring for cattle, pigs, horses, poultry, fur animals in summer and stable periods. Hygiene of pond fish farming, beekeeping.						
Topic 7. Hygiene of cattle and pigs. Hygiene of keeping sheep, goats, horses, poultry, rabbits and fur animals.		2		1		20
Topic 8 Hygiene of pond fish farming. Hygiene in beekeeping.		2		1		10
Together with module 4		4		2		50
Total hours	120	10		10		100

5. Topics of lectures and plan their sessions (5 semester)

No s / n	Name topics	Number hours
1	Topic 1. Hygienic value of physical properties of air Plan. 1. Hygienic value of temperature, heat exchange of animals, hypothermia. 2. Humidity, its hygienic value, hygrometric indicators. 3. Air movement, its hygienic value, atmospheric pressure, solar radiation and its components. 4. Ultraviolet and infrared rays, their hygienic value.	1
2	Topic 2. Hygienic value of air gas composition. Plan. 1. Gas composition of atmospheric air and air of livestock premises. 2. Main toxic gases: carbon dioxide, hydrogen sulfide, ammonia MPC. 3. Weather, climate, microclimate. 4. Acclimatization of animals.	1
3	Topic 3: Sanitary and hygienic value of soils, their rehabilitation, self-cleaning, disinfection. Plan. 1. Hygienic value of mechanical composition and physical properties of soils. 2. Biological properties of soils. 3. Biogeochemical enzootics of their prevention. 4. Soil healing (self-cleaning, disinfection). 5. System of measures for protection of soils from pollution by animal waste	1
4	Topic 4: Hygienic requirements for water, water supply, watering of animals, its sanitary assessment. Hygienic requirements for feed and animal feed, prevention of feed poisoning. Plan. 1. Water properties, pollution protection and quality control. 2. Water supply and watering of animals.	1

	<p>3. Methods of drinking water and wastewater treatment.</p> <p>4. Hygienic requirements for animal feeding.</p> <p>5. Prevention of feed poisoning of animals</p>	
	Together in the 5 th semester	4
1	<p>Topic 1 . Zoohygienic requirements for the design of livestock facilities, building materials. Zoohygienic requirements for ventilation, heating, sewerage.</p> <p>Plan.</p> <p>1. Livestock facilities and their significance.</p> <p>2. Sanitary and hygienic requirements for the planning and construction of livestock facilities.</p> <p>3. Sanitary and hygienic control over the design and construction of livestock facilities.</p> <p>4. Sanitary and hygienic requirements for equipment and microclimate.</p> <p>5. Sanitary and hygienic requirements for ventilation.</p> <p>6. Sanitary and hygienic requirements for heating. Sanitary and hygienic requirements for sewerage.</p>	1
2	<p>Topic 2. Sanitary and hygienic requirements for the territory of livestock farms, equipment, premises. Hygiene of animal care in the cold and warm period of the year.</p> <p>Plan.</p> <p>1. Sanitary and hygienic requirements for the territory of livestock farms.</p> <p>2. Arrangement of sanitary facilities of livestock farms.</p> <p>3. Summer systems for different species of animals, hygienic requirements .</p> <p>4. Systems for keeping different species of animals in the cold season, sanitary and hygienic requirements for them.</p>	1
3	<p>Topic 3 . Hygiene of cattle and pigs.</p> <p>Plan.</p> <p>1. Cattle housing systems and hygiene.</p> <p>2. Hygiene of young cattle breeding</p> <p>3. Pig holding systems.</p> <p>4. Hygienic requirements for keeping different age and technological groups of pigs.</p>	2
4	<p>Topic 4 . Hygiene of sheep, horses, poultry and fur animals.</p> <p>Plan.</p> <p>1. Hygiene of sheep keeping.</p> <p>2. Hygiene of horses.</p> <p>3. Hygiene of poultry keeping.</p> <p>4. Hygiene of keeping fur animals.</p>	2
	Together in the 6 th semester	6
	Together	10

6. Topics of laboratory classes (5 th semester)

№	Name topics	Number hours
1	Physical properties of air and their physiological significance . Chemical and biological properties of the air environment and their hygienic value .	1
2	Determination of the chemical composition of air. Methods for	4

	determining wind roses .	
3		4
4	Sanitary and hygienic assessment of soils.	2
5	Determination of chemical properties of soils .	2
6	Determination of biological properties of soils .	2
7	Sanitary and hygienic assessment of water sources.	4
8	Determination of physical and chemical properties of water.	4
9	Sanitary and hygienic assessment of feed.	4
	Together in the 5 th semester	6
Topics of laboratory classes (6 th semester)		
1	Planning, projects of livestock farms are their components. Sanitary and hygienic requirements for building materials and individual structures of livestock premises . Sanitary and hygienic requirements for ventilation , sewerage , space heating.	1
2	Hygiene of cattle, pigs, sheep and goats, horses	1
3	Hygiene of productive birds, rabbits,	1
4	Hygiene of fur animals, bees, pond fish farming	1
	Together in the 6 th semester	4
	Together	10

7. Independent work (5 th semester)

№ s / n	Topic title and list of questions	Number hours
1	Hygienic value of physical properties of air 1. Bacterial and dust air pollution. 2. Natural and artificial lighting of livestock premises. 3. The concept of aerorumbogram, wind rose and dead zone. Their hygienic value.	10
2	Hygienic value of air gas composition . 1. Modern methods of controlling the content of harmful gases in livestock air. 2. Rehabilitation of livestock air and environmental protection from pollution.	10
3	Hygiene of water supply. 1. Comparative characteristics of water quality in Ukraine and EU countries. 2. Features of sanitation of drinking water in the conditions of modern animal husbandry complexes 3. Sanitary and hygienic requirements for wastewater and veterinary rules for their reuse.	10
4	Sanitary and hygienic requirements for feeding animals. 1. Prevention of diseases associated with malnutrition. 2. Sanitary and hygienic control over harvesting, storage and quality of cows. 3. Prevention of animal diseases caused by feeding feed affected by mycotoxins, pests, containing pesticides and chemical impurities	20
	Together in the 5 th semester	50
Independent work (6 th semester)		
1	Zoohygienic requirements for ventilation, heating, sewerage. 1. Sanitary and hygienic requirements for ventilation. 2. Sanitary and hygienic requirements for heating. 3. Sanitary and hygienic requirements for sewerage.	5

2	Sanitary and hygienic requirements for the territory of livestock farms, equipment, premises . 1. Sanitary and hygienic requirements for the territory of livestock farms. 2. Arrangement of sanitary facilities of livestock farms. 3. Systems of summer keeping of different species of animals, hygienic requirements 4. Systems for keeping different species of animals in the cold season, sanitary and hygienic requirements for them. 5. Veterinary protection of livestock facilities.	5
3	Hygiene of cattle, pigs, sheep and goats. 1. Systems and hygiene of keeping, feeding cattle, pigs, sheep and goats. 2. Hygiene of growing calves, piglets, lambs and kids. 3. Vetsan measures for the maintenance of different age categories of wolves, pigs, sheep and goats.	15
4	Hygiene of horses. 1. Systems and hygiene of keeping, feeding horses . 2. Hygiene of foals. 3. Vetsan measures for the maintenance of different age categories of horses .	5
5	Hygiene of poultry keeping. 1. Systems and hygiene of keeping, feeding birds. 2. Hygiene whirlpool sensation of young birds. 3. Vetsan measures for keeping different age groups of birds .	10
6	Hygiene of rabbits . 1. Systems and hygiene of keeping, feeding rabbits 2. Hygiene of rabbit breeding 3. Vetsan measures for the maintenance of different age categories of rabbits	5
7	Hygiene of keeping fur animals. 1. Systems and hygiene of keeping, feeding of fur animals . 2. Hygiene of growing young fur-bearing animals . 3. Vetsan measures for the maintenance of different age categories of fur-bearing animals.	5
8	Hygiene in beekeeping. 1. Vetsan measures to the placement of apiaries. 2. Biology of the bee family. 3. Prevention of diseases and poisonings of bees.	5
9	Hygiene of pond fish farming 1. Fish breeding systems. 2. Sanitary and hygienic requirements for water. 3. Diseases of fish and their prevention.	5
	Together in the 6 th semester	50
	Together	100

8. Teaching methods

1. Methods of learning by source of knowledge:

- 1.1. *Verbal* : story, explanation, conversation (heuristic and reproductive), lecture, work with a book (reading, writing, drawing up a plan, taking notes, making tables, graphs, etc.).
- 1.2. *Visual* : demonstration, illustration, observation.
- 1.3. *Practical* : laboratory method.

2. Teaching methods by the nature of the logic of cognition.

2.1. *Analytical* .

2.2. *Methods of synthesis* .

3. Teaching methods by the nature and level of independent mental activity of students.

3.1. *Problem* (problem-information)

3.2. *Partial search (heuristic)*

3.3. *Research*

4. Active teaching methods - the use of technical teaching aids, brainstorming, competitions, the use of problem situations, the use of training and control tests, the use of reference notes of lectures.

5. Interactive learning technologies - the use of multimedia technologies, case-study (method of analysis of specific situations), interactive learning, student collaboration, online service Kahoot !, Zoom platform for video conferencing, mobile messenger application Viber .

9. Control methods

1. Rating control according to the 100-point scale of ECTS assessment

2. Carrying out intermediate control during the semester (intermediate certification)

3. Polycriteria assessment of current work of students:

- results of performance and protection of laboratory works;

- express control during classroom classes;

- independent study of the topic as a whole or individual issues;

- writing essays;

- test results;

- written assignments during tests;

- production situations

10. Distribution of points received by students (autumn semester)

Current testing and independent work					Together for modules and VTS	Ate-station	Sum
Meaningful module 1 - 35 points		Content module 2 - 35 points		WITH P WITH			
T1	T2	T3		T4	15	85 (70 + 15)	100
15	20	15		20			

Distribution of points received by students (spring semester)

Current testing and independent work						Together for modules and VTS	Ate-station	The result th test - exam	Su-ma	
Content module 3 - 20 points		Content module 4 - 20 points			C P C					
T5	T6	T7	T8	T9	T10	15	55 (40+15)	15	30	100
5	5	3	2	3	2					

Assessment scale: national and ECTS

The sum of points for all types of educational activities	ECTS assessment	Score on a national scale	
		for exam, course project (work), practice	for offset
90 - 100	AND	perfectly	
82-89	IN	fine	

75-81	WITH		credited
69-74	D	satisfactorily	credited
60-68	IS		
35-59	FX	unsatisfactory with the possibility of reassembly	not credited with the possibility of re-assembly
1-34	F	unsatisfactory with mandatory re-study of the discipline	not enrolled with mandatory re-study of the discipline

11. Methodical support

1. Nagornaya LV, Fotina TI Sanitary and hygienic assessment of objects of veterinary and sanitary supervision and control. Methodical instructions for conducting laboratory-practical classes and independent work of full-time students majoring in 211 "Veterinary Medicine" and 212 "Veterinary Hygiene, Sanitation and Examination", OS - Bachelor, Master. Recommendation. before printing mtd. council of FVM SNAU from 20.01.2020. pr. № 3., 31 p.
2. Nagornaya LV, Fotina TI Sanitary and hygienic assessment of building materials. Methodical instructions for conducting laboratory-practical classes and independent work of full-time students majoring in 211 "Veterinary Medicine" and 212 "Veterinary Hygiene, Sanitation and Examination", OS - Bachelor, Master. Recommendation. before printing mtd. council of FVM SNAU from 20.01.2020. pr. № 3., 25 p.
3. Nagornaya LV, Fotina TI Methods of assessment and sanitary-hygienic control of the microclimate in livestock facilities Guidelines for laboratory-practical classes and independent work of full-time students majoring in 211 "Veterinary Medicine" and 212 "Veterinary Hygiene, Sanitation and Expertise", OS - Bachelor, Master. Recommendation. before printing mtd. council of FVM SNAU from 20.01.2020. pr. № 3., 52 p.
4. Nagornaya LV, Fotina TI Methods of assessment and sanitary-hygienic control over feed quality Methodical instructions for laboratory-practical classes and independent work of full-time students majoring in 211 "Veterinary Medicine" and 212 "Veterinary Hygiene, Sanitation and Expertise", OS - Bachelor, Master. Recommendation. before printing mtd. council of FVM SNAU from 20.01.2020. pr. № 3., 46 p.
5. Nagornaya LV, Fotina TI Methods of sanitary-microbiological research of water. Methodical instructions for conducting laboratory-practical classes and independent work of full-time students majoring in 211 "Veterinary Medicine" and 212 "Veterinary Hygiene, Sanitation and Expertise", OS - Bachelor, Master. Recommendation. before printing mtd. council of FVM SNAU from 20.01.2020. pr. № 3., 25 p.
6. Nagornaya LV, Fotina TI Ecological and hygienic aspects of industrial animal husbandry. Methodical instructions for conducting laboratory-practical classes and independent work of full-time students majoring in 211 "Veterinary Medicine" and 212 "Veterinary Hygiene, Sanitation and Expertise", OS - Bachelor, Master. Recommendation. before printing mtd. council of FVM SNAU from 20.01.2020. pr. № 3., 43 p.
7. Nagornaya LV, Fotina TI Veterinary and sanitary measures in horse breeding Methodical instructions for laboratory and practical classes and independent work of full-time students majoring in 211 "Veterinary Medicine" and 212 "Veterinary Hygiene, Sanitation and Expertise", OS - Bachelor, Master. Recommendation. before printing mtd. council of FVM SNAU from 20.01.2020. pr. № 3., 25 p.

12. Recommended literature

Basic

1. Animal hygiene Demchuk MV, Chorny MV, Zakharenko MO, Vysokos MP, Kharkiv: Espada, 2006, 520 p.

2. Zasekin DA Sanitary norms for livestock and processing enterprises of Ukraine / D.A. Zasekin, VM Polyakovsky. - K.: LLC "SPE INTERSERVICE". - 2011. - 220 p.
3. Bukalova NV Veterinary and sanitary examination of feeds, feed additives and raw materials for their production: textbook. manual / H.B. Букалова, H.M. Bogatko, OA Shaky. - K.: Аграрна освіта, 2010. - 461 с.
4. Methodological bases and methods of scientific research in veterinary hygiene, sanitation and examination: teaching aid / [Antonenko PP, Dorovskikh AV, Vysokos MP, Merciful RV, Kalinichenko OO., Vasylenko TO] .– Dnipro: Svidler AL Publishing House, 2018. - 276 p.
5. Animal hygiene / MV Demchuk, MV Chorny, MP Vysokos, Ya.S. Pavlyuk; for order. MV Demchuk. - K.: Урожай, 1996. - 384 с.

Auxiliary

1. Law of Ukraine "On drinking water and drinking water supply" from 10.01.2002 № 2918-III // zakon.rada.gov.ua. - 26 p.
2. DSanPIN 2.2.4-171-10 Hygienic requirements for drinking water intended for human consumption.
3. DSTU 4808: 2007. Sources of centralized drinking water supply. Hygienic and environmental requirements for water quality and selection rules.
4. DSTU 7525: 2014 Drinking water. Requirements and methods of quality control.
5. Law of Ukraine "Drinking water of Ukraine" from 03.03.2005 552455
6. Funari E. Technical Guide for Epidemiological Surveillance of Water-Related Diseases / E. Funari, T. Kistemann, S. Herbst, A. Rechenburg. - Geneva: World Health Organization, 2011. - 154 p.
7. Dovgan VP Chemical-bacteriological analysis: Textbook. - K.: A.C.K., 2005.- 320.c
8. Veterinary and sanitary prevention in poultry farms / Smironov AM, Fisinin VI, Kochish II, Korneva NN M.: ООО «NIPKTSVoskhod-A», 2012.-332 p.
9. Veterinary mycotoxicology: textbook. / Dukhnytsky VB, Khmelnytsky GO, Boyko GV, Ishchenko VD ..- K., Agricultural education, 2011.-240 p.

13. Information resources

1. www.izhgesha.ru
2. <http://dic.academic.ru>
3. <http://www.dictionary.plib.ru>
4. <http://www.nedug.ru>
5. <http://zhivotnovodstvo.no.ru>
6. <http://www.martindalecenter.com/Vet.html>
7. <http://www.vetscape.co.uk>
8. <http://www.aboutus.org/AgriSurf.com>
9. www.cnsb.ru