EDUCATIONAL COMPONENT SYLLABUS

Physiology and pathology of the mammary gland in animals

specialty	**211 – Veterinary medicine**	**the obligation of discipline**	**selective component**
educational program	**veterinary medicine**	**faculty**	**veterinary medicine**
educational level	**Master**	**department**	**veterinary surgery and reproductology**

LECTURERS

Fedorenko Serhii Yakovych

Higher education – Kharkiv Zooveterinary Institute, 1999, specialist, qualification – doctor of veterinary medicine.
Scientific degree - Doctor of Veterinary Sciences, specialty 16.00.07 - Veterinary obstetrics
Academic rank – Professor
Work experience – 25 years
Indicators of professional activity on the course topic:

- Co-author of 2 textbooks and 6 methodological recommendations;
- 20 years of scientific experience;
- co-author of thematic publications in the scientometric database Web of Science (more than 10).

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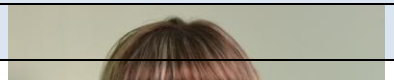
Naumenko Svitlana Valeriivna



Higher education – Kharkiv State Zooveterinary Academy, 2005, specialist, qualification – doctor of veterinary

medicine.
Scientific degree - Doctor of Veterinary Sciences, specialty 16.00.07 - Veterinary obstetrics
Academic rank – Professor
Work experience – 20 years
Indicators of professional activity on the course topic:

- author of over 140 scientific works, including 13 articles included in the scientometric database Scopus and Web of Science, 114 articles in scientific professional publications of Ukraine, 2 textbooks, 4 monographs and 2 chapters of collective monographs, 46 abstracts of reports from international and all-Ukrainian scientific and practical conferences, 8 scientific and methodological recommendations and 2 technical conditions for veterinary drugs;
- 20 years of scientific experience.

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Siehodin Oleksandr Borysovych

Higher education – Kharkiv Zooveterinary Institute, 2001, specialist, qualification – doctor of veterinary medicine.
Scientific degree – Candidate of Veterinary Sciences (Ph.D.), specialty 16.00.05 – Veterinary surgery
Academic rank – Docent
Work experience – 24 years
Indicators of professional activity on the course topic:

- author and co-author of over 30 scientific works, including: textbooks in English – 3; chapter in a collective monograph – 1, patent for a utility model – 1;

20 years of scientific experience.

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Koshevoi Vsevolod Ihorovych

Higher education – Kharkiv State Zooveterinary Academy, 2019, Master of science, qualification – doctor of veterinary medicine.
Scientific degree – Doctor of Philosophy, specialty – 211 Veterinary medicine, State Biotechnological University, 2023.
Work experience – 2 years
Indicators of professional activity on the course topic:

- author of over 100 scientific works, including 6 articles included in the scientometric database Scopus, 45 articles in scientific professional publications of Ukraine (including 16 in English), 1 monograph and 2 chapters of collective monographs, 42 abstracts of reports of international and all-Ukrainian scientific and practical conferences, 6 scientific and methodological recommendations and 1 technical conditions for a veterinary drug;
- 10 years of scientific experience;
- reviewer of scientific articles in journals included in international scientometric databases (Scopus – World's Veterinary Journal; Web of Science – Uttar Pradesh Journal of Zoology; etc.).

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GENERAL INFORMATION ABOUT THE EDUCATIONAL COMPONENT (DISCIPLINE)

Goal	The purpose of studying the elective component "Physiology and pathology of the mammary gland in animals" is to enable higher

	education students to master in-depth fundamental principles of the physiology of the mammary gland, modern means of therapy and prevention of pathological processes in the mammary gland of animals.
Format	lectures, practical classes, independent work, individual assignments
Scope and forms of control	3 ECTS credits (90 hours): 18 hours of lectures, 36 hours of laboratory work, 36 hours of independent work; intermediate control (2 sections); final control – differentiated assessment.
Teacher requirements	timely completion of independent work, presentations, activity, teamwork
Enrollment conditions	according to the curriculum

COMPLEMENTARY EDUCATION STANDARDS AND CURRICULUM

Competences	**general competences**: GC 2. Ability to apply knowledge in practical situations. GC 3. Knowledge and understanding of the subject area and profession. GC 6. Skills in using information and communication technologies. **special competences**: SC 9. Ability to perform obstetrical-gynecological and surgical procedures and operations. SC 13. Ability to develop strategies for the prevention of diseases of various etiologies.	**Program learning outcomes**	This academic discipline ensures the formation of the following **program learning outcomes**: PLO 3. Determine the essence of physicochemical and biological processes that occur in the animal body normally and during pathology; PLO 6. Develop quarantine and health measures, methods of therapy, prevention, diagnosis and treatment of diseases of various etiologies; PLO 7. Formulate conclusions regarding the effectiveness of selected methods and means of keeping, feeding and treating animals, prevention of infectious and non-infectious diseases, as well as production and technological processes at animal husbandry enterprises, breeding or exploitation of animals of different classes and species.

STRUCTURE OF THE EDUCATIONAL COMPONENT (DISCIPLINE)

Section 1. Morphology and function of the mammary gland

LECTURES		Laboratory and practical lesson		Independent work	
Lecture 1	Features of the ontogenesis of the mammary gland in animals. Clinical characteristics of the mammary gland of cows and mares.	**LPL 1-2**	Features of the morpho-functional state of the mammary gland of domestic animals.	**Independent work**	Evolution and involution of the mammary gland. Neurohumoral regulation of mammogenesis, lactogenesis and lactopoiesis.
Lecture 2	Clinical characteristics of the mammary gland of sows, sheep, and goats.	**LPL 3-4**	Blood supply, innervation of the mammary gland and its research.		
Lecture 3	Clinical characteristics of the mammary gland of female small animals.	**LPL 5-6**	Neurohumoral regulation of milk production and milk ejection processes.		
Lecture 4	Function of the mammary gland in animals.	**LPL 7-8**	Characteristics of the secretion of the mammary gland of animals.		

Section 2. Breast pathology, methods of therapy and prevention

Lecture 5	The influence of external and internal factors on the function of the mammary gland of animals.	**LPL 9**	Abnormalities of mammary gland development in animals.	**Independent work**	Mastology. Features of the organ – colostral immunity, dairy products. Pathology. Diagnostics. Therapy. Problems and achievements. Milk quality standards. European requirements. Ultrasonographic and thermographic diagnostics of mastitis. Use of modern methods for diagnosing mastitis (standards, milk scanners). Pharmacoultraphoresis, application method. Colostrometry. Methodology. Comprehensive monitoring of milk productivity.
		LPL 10	Pathological lesions of the mammary gland skin of animals of various origins.		
Lecture 6	Classification and pathogenesis of mastitis.	**LPL 11**	Mechanical and traumatic injuries to the mammary gland.		
Lecture 7	Oncological pathology of the mammary gland.	**LPL 12**	Subclinical and specific mastitis.		
		LPL 13	Mammological examination of animals using information and diagnostic devices.		
Lecture 8	Modern methods of treatment of mammary gland pathologies in animals	**LPL 14**	General principles and methods of treating animals with various forms of mastitis.		
		LPL 15	Physiological treatment methods and basic medical procedures in the mammary gland area.		
Lecture 9	Prevention of mammary gland pathologies in animals	**LPL 16**	Computer programs for differential diagnosis of mammary gland pathologies in cows.		
		LPL 17	Basic rules for preventing mastitis, analysis and elimination of biotic and abiotic factors.		
		LPL 18	Increasing the protective factors of the mammary gland and the immunological reactivity of the animal body.		

BASIC LITERATURE AND METHODOLOGICAL MATERIALS

Basic and additional literature	Berezovskyi A.V., Kharenko M.I. (Red.). Fiziolohiia ta patolohiia molochnoi zalozy u tvaryn: navchalnyi posibnyk. Kyiv: DIA, 2018. 476 s. Berezovskyi A.V., Kharenko M.I. (Red.). Fiziolohiia ta patolohiia rozmnozhennia dribnykh tvaryn: navchalnyi posibnyk (2-e vydannia, pereroblene i dopovnene). Zhytomyr: Polissia, 2017. 392 s.	**Methodical support**	Koshevoi V.P., Fedorenko S.Ia., Ivanchenko M.M., Naumenko S.V., Besedovska K.S., Skliarov P.M. Termohrafichna diahnostyka u veterynarnomu akusherstvi, hinekolohii ta androlohii (metodychni rekomendatsii). Kharkiv: RVV KhDZVA, 2013. 52 s. Koshevoi V.P., Fedorenko S.Ia., Naumenko S.V., Ivanchenko M.M., Besedovskyi V.P., Onyshchenko O.V., Besedovska K.S., Pasternak A.M., Chuiko L.V., Koshevoi V.I., Skliarov P.M., Holota V.I., Taran H.V., Kravtsov M.N. Ozonomistski preparaty ta yikh vykorystannia u veterynarnii reproduktolohii (metodychni rekomendatsii). Kharkiv: RVV KhDZVA, 2014. 81 s. Koshevoi V.P., Fedorenko S.Ia., Naumenko S.V., Ivanchenko M.M., Onyshchenko O.V., Besedovska K.S., Pasternak A.M., Hladtsinova I.O., Koshevoi V.I., Skliarov P.M., Maliukin Yu.V., Yefimova S.L., Klochkov V.K. Kompleksni preparaty, stvoreni na osnovi nano-biomaterialiv ta yikh vykorystannia u veterynarnii reproduktolohii (metodychni rekomendatsii). Dnipro: vydavnytstvo «Porohy», 2016. 110 s. Hryshko D.S. Lektsii z veterynarnoho akusherstva: Navchalnyi posibnyk. Kh.: Prapor, 2003. 400 s. Veterynarne akusherstvo, hinekolohiia ta biotekhnolohiia vidtvorennia tvaryn z osnovamy androlohii / Yablonskyi V.A., Khomyn S.P., Kalynovskyi H.M. ta in.- Vinnytsia: Nova Knyha, 2011. 600 s. Yablonskyi V. A. Biotekhnolohiia vidtvorennia tvaryn: Pidruchnyk. K.: Aristei, 2004. 296 s. 4. Yablonskyi V. A. Praktychne akusherstvo, hinekolohiia ta biotekhnolohiia vidtvorennia tvaryn z osnovamy androlohii. K.: Meta, 2002. 319 s. Zhuravel M.P., Davydenko V.M. Tekhnolohiia vidtvorennia silskohospodarskykh tvaryn. Pidruchnyk. K.: Vydavnychyi Dim „Slovo", 2005. 336 s. 6. Fiziolohiia, patolohiia ta biotekhnika vidtvorennia svynei / M.I. Kharenko, S.P. Khomyn, A.I. Kraievskyi ta in. Sumy: Vydavnytstvo «Kozatskyi val», 2010. 412 s. 9. Fiziolohiia ta patolohiia rozmnozhennia konei: Navchalnyi posibnyk / za zah. red. A.V. Berezovskoho ta M.I. Kharenka. K.: DIA, 2014. 440 s.

GRADING SYSTEM

SYSTEM		POINTS	ACTIVITY THAT IS ASSESSED
Final assessment (different credit, exam)Final evaluation	**100 ECTS points (standard)**	**up to 100**	**40 % - Final testing**
			60 % - student's current work during the semester
Final assessment (non-differential credit)	**100 points ECTS (standard)**	**up to 100**	**100 % - average grade for sections**
Rating of section	**100 points total**	**up to 30**	**30 % - answers to test questions**
		up to 30	**30 % - the result of mastering the block of independent work**
		up to 40	**40 % - student activity in class (oral answers)**

NORMS OF ACADEMIC ETHICS AND INTEGRITY

All participants in the educational process (including students) must adhere to the code of academic integrity and the requirements stipulated in the regulation "On Academic Integrity of Participants in the Educational Process of SBTU": to demonstrate discipline, good manners, respect each other's dignity, show kindness, honesty, and responsibility.