MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE
BILA TSERKVA NATIONAL AGRARIAN UNIVERSITY
Faculty of Veterinary Medicine

EDUCATIONAL PROCESS AT THE FACULTY OF VETERINARY MEDICINE BNAU (MANUAL)

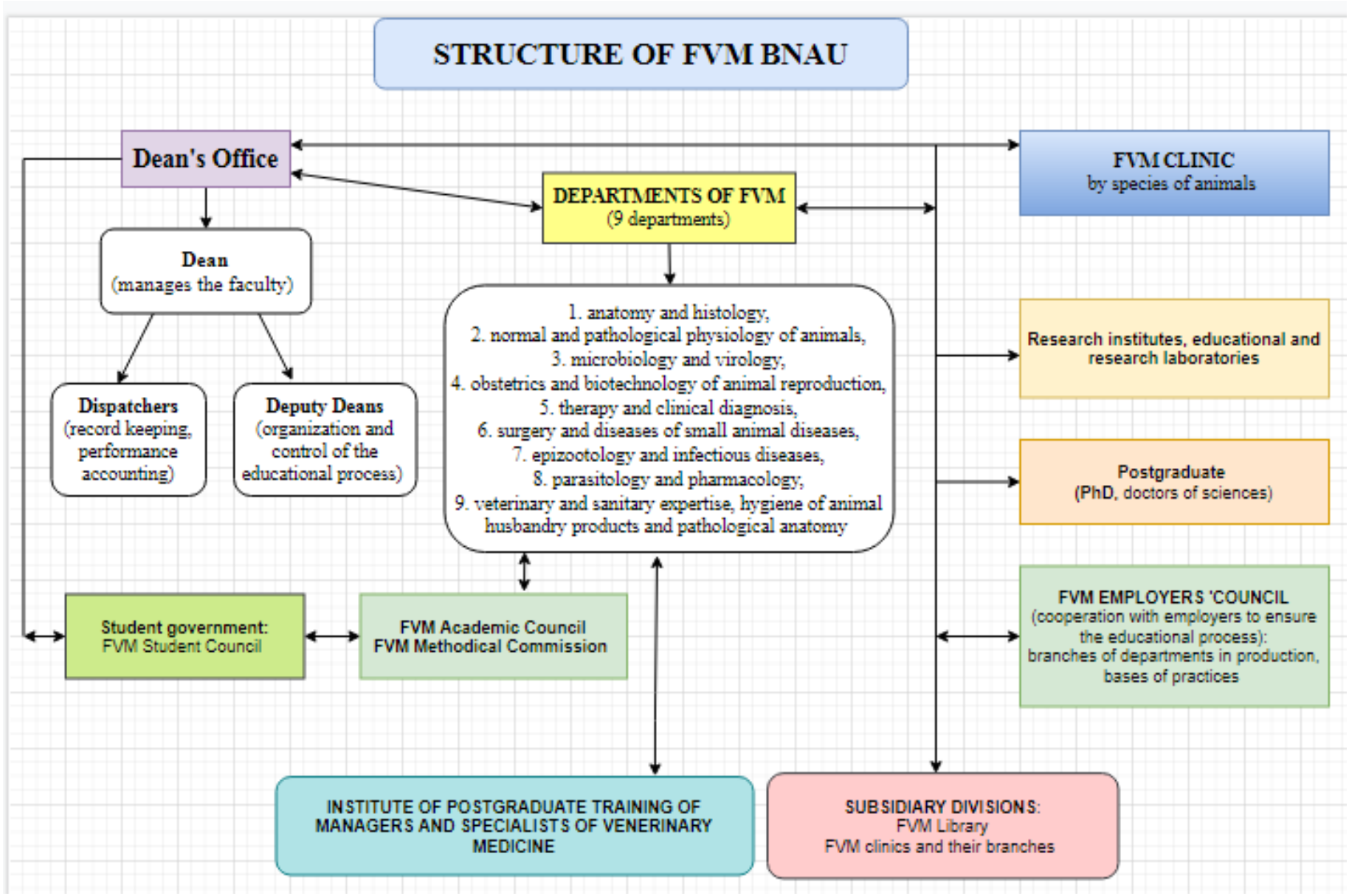
Field of knowledge: **21 “Veterinary medicine”**

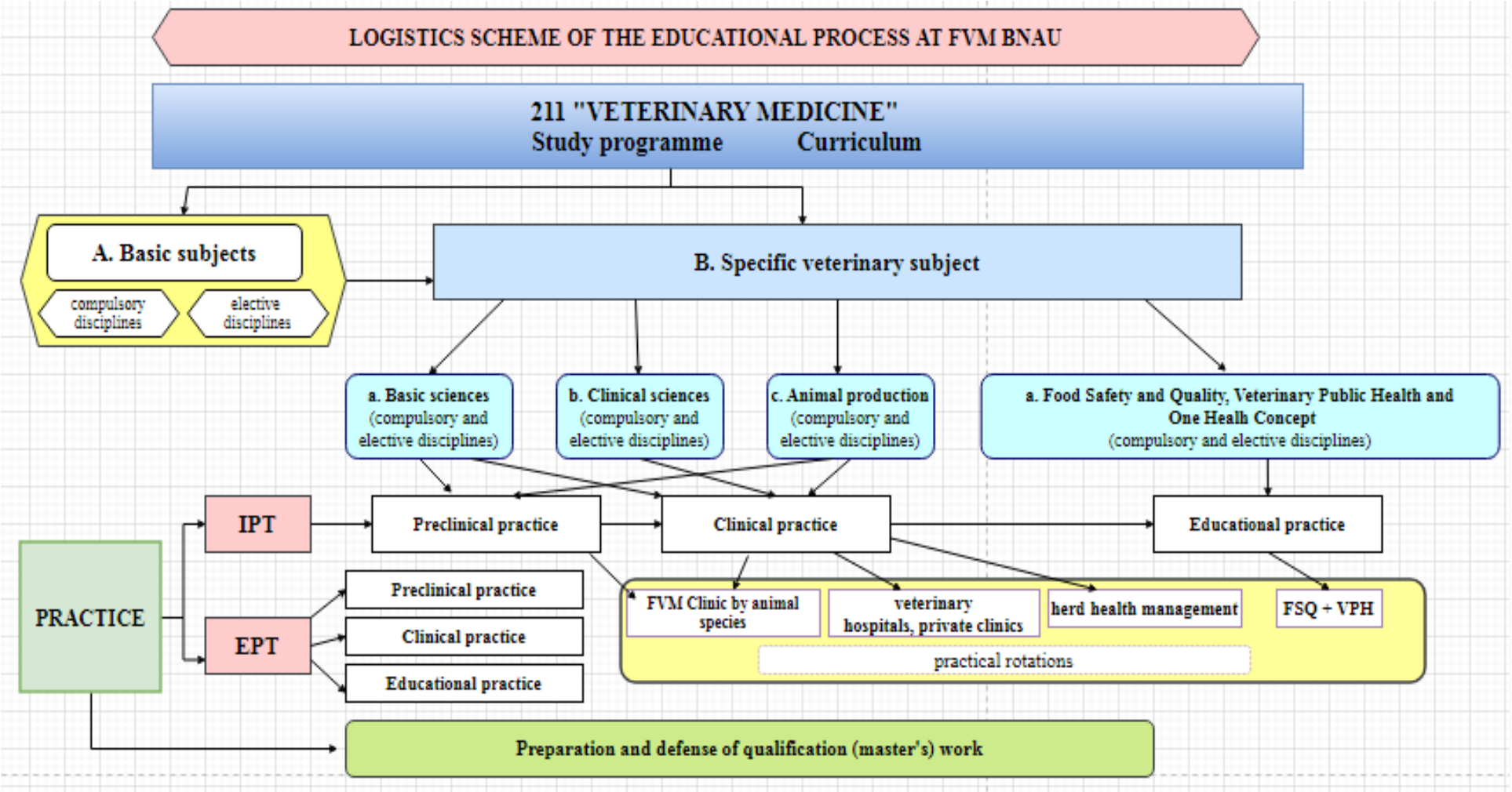
Specialty: **211 "Veterinary Medicine"**

Level of higher education: **second (master's)**

Bila Tserkva

CONTENT


STRUCTURE OF FVM BNAU
Dean's Office
Dean
(manages the faculty)
Dispatchers
(record keeping, performance accounting)
Deputy Deans
(organization and control of the educational process)
DEPARTMENTS OF FVM
(9 departments)
1. anatomy and histology,
2. normal and pathological physiology of animals,
3. microbiology and virology,
4. obstetrics and biotechnology of animal reproduction,
5. therapy and clinical diagnosis,
6. surgery and diseases of small animal diseases,
7. epizootology and infectious diseases,
8. parasitology and pharmacology,
9. veterinary and sanitary expertise, hygiene of animal husbandry products and pathological anatomy
Student government:
FVM Student Council
FVM Academic Council
FVM Methodical Commission
INSTITUTE OF POSTGRADUATE TRAINING OF MANAGERS AND SPECIALISTS OF VENERINARY MEDICINE
SUBSIDIARY DIVISIONS:
FVM Library
FVM clinics and their branches
FVM CLINIC
by species of animals
Research institutes, educational and research laboratories
Postgraduate
(PhD, doctors of sciences)
FVM EMPLOYERS 'COUNCIL
(cooperation with employers to ensure the educational process):
branches of departments in production, bases of practices


LOGISTICS SCHEME OF THE EDUCATIONAL PROCESS AT FVM BNAU
211 "VETERINARY MEDICINE"
Study programme Curriculum
A. Basic subjects
compulsory disciplines
elective disciplines
B. Specific veterinary subject
a. Basic sciences (compulsory and elective disciplines)
b. Clinical sciences (compulsory and elective disciplines)
c. Animal production (compulsory and elective disciplines)
a. Food Safety and Quality, Veterinary Public Health and One Health Concept (compulsory and elective disciplines)
PRACTICE
IPT
EPT
Preclinical practice
Clinical practice
Educational practice
Preclinical practice
Clinical practice
Educational practice
FVM Clinic by animal species
veterinary hospitals, private clinics
herd health management
FSQ + VPH
practical rotations
Preparation and defense of qualification (master's) work

MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE
BILA TSERKVA NATIONAL AGRARIAN UNIVERSITY
FACULTY OF VETERINARY MEDICINE

CURRICULUM

"**APPROVED"**
Rector, academician UAAS
_____ A.S.Danylenko

"AGREED"
Vice-rector for educational, upbringing and international activities, doctor of agricultural sciences, professor
_____ T.M. Dyman
"____" _____ 2020 p.

Level of higher education	**Second (master's)**
Field of knowledge	**21 "Veterinary medicine"**
Specialty	**211 "Veterinary medicine"**
Educational program	**"Veterinary medicine"**
Orientation of the educational program	**Educational and professional**
Form of study	**Full-time**
Term of study (volume of ECTS credits)	**6 years (360 ECTS credits)**
Based on	**complete general secondary education**
Degree of higher education	**"Master"**
Qualification	**Veterinary doctor**

SCHEDULE OF THE EDUCATIONAL PROCESS
Training of specialists of the second (master's) level of higher education in 2020
specialty 211 "Veterinary medicine""

	September				October					November				December				January					February				March				April				May				June				July				August			
31 4	7 11	14 18	21 25	28 2	5 9	12 16	19 23	26 30	2 6	9 13	16 20	23 27	30 4	7 11	14 18	21 25	28 1	4 8	11 15	18 22	25 29	1 5	8 12	15 19	22 26	1 5	8 12	15 19	22 26	29 2	5 9	12 16	19 23	26 30	3 7	10 14	17 21	24 28	31 4	7 12	14 148	21 25	28 2	5 9	12 16	19 23	26 30	2 6	9 13	16 20	23 27	
1	T	T	T	T	T	T	T	T	T	T	T	T	T	T	C	C	C	K	K	K	T	T	T	T	T	T	T	T	T	T	T	T	T	П	П	П	П	T	T	C	C	C	K	K	K	K	K	K	K	K	K
2	T	T	T	T	T	T	T	T	T	T	T	T	T	T	C	C	C	K	K	K	T	T	T	T	T	T	T	T	T	T	T	T	T	П	П	П	П	T	T	C	C	C	K	K	K	K	K	K	K	K	K
3	T	T	T	T	T	T	T	T	T	T	T	T	T	T	C	C	C	K	K	K	T	T	T	T	T	T	T	T	T	T	T	T	T	П	П	П	П	T	T	C	C	C	K	K	K	K	K	K	K	K	K
4	T	T	T	T	T	T	T	T	T	T	T	T	T	T	C	C	C	K	K	X	X	X	X	X	T	T	T	T	T	T	T	П	П	T	T	П	П	T	T	T	C	C	K	K	K	K	K	K	K	K	K
5	T	T	T	T	T	T	T	T	T	T	T	T	T	T	C	C	C	K	K	K	T	T	T	T	T	T	T	T	T	T	T	T	T	П	П	П	П	T	T	C	C	C	K	K	K	K	K	K	K	K	K
6	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	C	K	K	X	X	X	X	X	T	T	Ч	Ч	Ч	Ч	T	T	T	T	T	T	T	T	C	C	//	//									

Designation: T - theoretical training; C - examination session; P - practice; K - vacation; X - production practice; H - duty in clinics (by species); D - defense of master's thesis

II. COMPOSITE BUDGET TIME DATA, weeks

Year of study	Theoretical study	Examinations	Practical preparation	State attestation	Vocations	Total
1	30	6	4	–	12	52
2	30	6	4	–	12	**52**
3	30	6	4	–	12	**52**
4	25	5	10	–	11	**51**
5	30	6	4	–	12	**52**
6	26	3	10	2	2	**49**
Total for EP	**171**	**32**	**36**	**2**	**61**	**308**

III. PRACTICE

Назва практики	Semester	Weeks
Preclinical practice	2	4
Preclinical practice	4	4
Clinical practice / Educational practice	6	4
Clinical practice / Educational practice	8	4
Internship	8	6
Clinical practice / Educational practice	10	4
Duty in the clinic	12	4
Internship	12	6

IV. STATE ATTESTATION

№	Component certification	Hours	Credits	weeks
1	master thesis	–	–	–

V. PLAN OF THE EDUCATIONAL PROCESS (1YEAR MASTER)

№ п/п	Name of the subject	Distribution by semesters			hours							Division into courses and semesters (1year)	
		exams	tests	course papers	credits	Total amount of hours	Classrooms lessons	for				1 sem.	2 sem.
								lectures	laboratory	practical	Self-education	14	16
												Hours per week	
1	2	3	4	5	6	7	8	9	10	11	12	13	14
1M YEAR													
1. MANDATORY COMPONENTS													
1.	Admission to the specialty	–	1	–	3,0	90	42	14	28	–	48	3 1/2	
2.	Latin language and terminology	–	1	–	3,0	90	28	–	28	–	62	2 0/2	
3.	Biophysics	1	–	–	3,0	90	56	14	42	–	34	4 1/3	
4.	Zoology	–	1	–	3,0	90	42	14	28	–	48	3 1/2	
5.	Biology of fodder crops and toxic plants	–	1	–	3,0	90	42	14	28	–	48	3 1/2	
6.	Animal anatomy	–	1; 2	–	8,0	240	148	30	118	–	92	6 1/5	4 1/3
7.	Foreign language (for professional purposes)	–	2	–	4,0	120	60	–	60	–	60	2 0/2	2 0/2
8.	Biomedical statistics and computer science	–	2	–	3,0	90	32	16	16	–	58		2 1/1
9.	Ukrainian language (for professional purposes)	2	–	–	3,0	90	32	–	32	–	58		2 0/2
10.	Cytology, histology, embryology	–	2	–	4,0	120	64	32	32	–	56		4 2/2
11.	Chemistry	–	2	–	5,0	150	96	32	64	–	54		6 2/4
12.	Cell genetics and molecular biology	–	2	–	3,0	90	48	16	32	–	42		3 1/2
Total for mandatory components:		**2**	**11**	**–**	**45,0**	**1350**	**690**	**182**	**508**	**–**	**660**	**23**	**23**
2. SELECTIVE COMPONENTS													

1.	Physical Education	–	2	–	–	–	–	–	–	–	–	2 0/2	2 0/2
1	2	3	4	5	6	7	8	9	10	11	12	13	14
2.	Life safety and civil protection Labor protection in the vet. medicine	–	1	–	3,0	90	42	14	28	–	48	3 1/2	
3.	Philosophy	1	–	–	3,0	90	48	16	32	–	42		3 1/2
Total for selective components:		**1**	**2**	**–**	**9,0**	**270**	**138**	**46**	**92**	**–**	**132**	**5**	**5**
Total for both components:		**3**	**13**	**–**	**51**	**1530**	**780**	**212**	**568**	**–**	**750**	**28**	**28**
Preclinical practice:					**4,8**	**144**							
Animal anatomy					1,4	42							
Cytology, histology, embryology					1,0	30							
Animal care and the basics of nursing					2,4	72							
EXAMS		**4**										**2**	**1**
TESTS			**13**									**6**	**7**
COURSE PAPERS				**–**								**–**	**–**

V. PLAN OF THE EDUCATIONAL PROCESS (2YEAR MASTER)

№ п/п	Name of the subject	Distribution by semesters			HOURS							Division into courses and semesters (2year)	
		exams	tests	course papers	credits	Total amount of hours	Classrooms lessons	for				3 sem.	4 sem.
								lectures	laboratory	practical	Self-education	14	16
												Hours per week	
1	2	3	4	5	6	7	8	9	10	11	12	13	14
2M YEAR													
MANDATORY COMPONENTS													
1.	Animal anatomy	3	–	–	3,0	90	42	14	28	–	48	3 ½	
2.	Foreign language (for professional purposes)	4	–	–	4,0	120	60	–	60	–	60	2 0/2	2 0/2
3.	Cytology, histology, embryology	3	–	–	3,0	90	42	14	28	–	48	3 ½	
4.	Chemistry	3	–	–	3,0	90	56	28	28	–	34	4 2/2	
5.	Animal physiology	4	3	–	9,0	270	134	44	90	–	136	5 2/3	4 1/3
6.	Veterinary microbiology and immunology	–	3, 4	–	8,0	240	134	44	90	–	106	5 2/3	4 1/3
7.	Feeding animals	4	–	4	4,0	120	64	16	48	–	56		4 1/3
8.	Ethology and animal welfare	–	4	–	3,0	90	48	16	32	–	42		3 ½
9.	Animal husbandry	4	–	–	5,0	150	80	32	48	–	70		5 2/3
Total for mandatory components::		**7**	**4**	**1**	**42,0**	**1260**	**660**	**208**	**452**	**–**	**600**	**19**	**22**
2. SELECTIVE COMPONENTS													
1.	Physical Education	–	4	–	–	–	–	–	–	–	–	2 0/2	2 0/2
2.	Ecology and environmental protection / Biotechnology and veterinary ecology	–	3	–	3,0	90	56	14	42	–	34	4 1/3	

1	2	3	4	5	6	7	8	9	10	11	12	13	14
3.	Animal hygiene Applied cytology and histology	–	4	–	4,0	120	64	16	48	–	56		$4\ ^{1}/_{3}$
Total for selective components		**–**	**3**	**–**	**7,0**	**210**	**120**	**30**	**90**	**–**	**90**	**6**	**4**
Total for both components:		**7**	**7**	**1**	**49,0**	**1470**	**780**	**238**	**542**	**–**	**690**	**28**	**28**
Preclinical practice:					**4,8**	**144**							
Animal physiology					1,4	42							
Veterinary microbiology					1,6	48							
Feeding animals					0,6	18							
Animal hygiene					0,4	12							
Ethology and animal welfare					0,4	12							
animal husbandry					0,4	12							
EXAMS		**7**										**3**	**4**
TESTS			**7**									**3**	**4**
COURSE PAPERS				**1**								**–**	**1**

V. PLAN OF THE EDUCATIONAL PROCESS (3YEAR MASTER)

№ п/п	Name of the subject	Distribution by semesters			hours							Division into courses and semesters (3year)	
		exams	tests	course papers	credits	Total amount of hours	Classrooms lessons	з них				5 sem.	6 sem.
								lectures	laboratoryi	practical	Self-education	14	16
												Hours per week	
1	2	3	4	5	6	7	8	9	10	11	12	13	14
3M YEAR													
MANDATORY COMPONENTS													
1.	Veterinary microbiology and immunology	5	–	–	4,0	120	70	28	42	–	50	5 2/3	
2.	Pathological physiology	6	5	–	7,0	210	102	30	72	–	108	5 1/4	2 1/1
3.	Propaedeutics and diagnostic visualization	5	6	6	9,0	270	150	44	106	–	120	5 2/3	5 1/4
4.	Anesthesiology and operative surgery	6	5	6	6,0	180	88	28	60	–	92	4 2/2	2 0/2
5.	Pharmacology and pharmacotherapy	6	5	–	8,0	240	134	44	90	–	106	4 2/2	4 1/3
6.	Veterinary epidemiology	–	6	–	3,0	90	48	16	24	–	42		3 1/2
7.	Obstetrics and biotechnology of animal reproduction with basics of andrology	–	6	–	6,0	180	96	32	64	–	84		6 2/4
8.	General and special surgery of large animals	–	6	–	4,0	120	64	16	48	–	56		4 1/3
Total for mandatory components::		**5**	**7**	**2**	**47,0**	**1410**	**752**	**238**	**506**	**–**	**658**	**23**	**26**
SELECTIVE COMPONENTS													
1.	Clinical microbiology Clinical immunology	–	5	–	3,0	90	28	14	14	–	62	2 1/1	

1	2	3	4	5	6	7	8	9	10	11	12	13	14
2.	Veterinary management Organization and management of veterinary clinics	–	5	–	3,0	90	42	14	28	–	48	3 ½	
3.	Radiobiology Radiographic anatomy	–	6	–	3,0	90	32	16	16	–	58		2 ⅛
Total for selective components		**–**	**3**	**–**	**9,0**	**270**	**102**	**44**	**58**	**–**	**168**	**5**	**2**
Total for both components:		**5**	**10**	**2**	**56,0**	**1680**	**854**	**282**	**564**	**–**	**826**	**28**	**28**
Clinical practice:					**4,8**	**144**							
Clinical practice					1,3	38							
Clinics:					0,9	27							
ruminants					0,9	27							
pigs					1,3	38							
horses					0,2	5							
small animals					**0,2**	**9**							
birds and exotic animals					0,2	9							
Educational practice:					1,3	38							
pharmacology and pharmacotherapy					0,9	27							
EXAMS		**5**										**2**	**3**
TESTS			**10**									**5**	**5**
COURSE PAPERS				**2**								**–**	**2**

V. PLAN OF THE EDUCATIONAL PROCESS (4YEAR MASTER)

№ п/п	Name of the subject	Distribution by semesters			hours							Division into courses and semesters (4year)	
		exams	tests	Course paper	credits	Total amount of hours	Classroom lessons	for				7 sem.	8sem.
								lectures	laboratory	practical	Self-education	14	12
												Hours per week	
1	2	3	4	5	6	7	8	9	10	11	12	13	14
4M YEAR													
MANDATORY COMPONENTS													
1.	Obstetrics and biotechnology of animal reproduction with basics of andrology	7	–	7 i	4,0	120	56	14	42	–	64	4 1/3	
2.	General and special surgery of large animals	7	–	7 i	4,0	120	56	14	42	–	64	4 1/3	
3.	Safety, quality of food and feed	8	7	–	9,0	270	152	60	92	–	118	4 2/2	6 2/4
4.	Parasitology and invasive diseases	8	7	8 i	7,0	210	106	46	60	–	104	4 2/2	3 1/2
5.	Pathological anatomy and necropsy	8	7	8	7,0	210	108	30	78	–	102	3 1/2	4 1/3
6.	Epizootology, infectious diseases and preventive medicine	–	7; 8	–	6,0	180	88	38	50	–	92	2 1/1	5 2/3
7.	Medicine of internal diseases of large animals	–	7; 8	–	6,0	180	92	40	52	–	88	4 2/2	3 1/2
8.	Veterinary toxicology	–	7	–	3,0	90	48	16	32	–	42		3 1/2
9.	Veterinary clinical biochemistry	–	7	–	3,0	90	42	14	28	–	48	3 1/2	
10.	Professional ethics and communications of veterinary practice	–	8	–	3,0	90	32	16	16	–	58		2 1/1
		5	**10**	**4**	**52,0**	**1560**	**780**	**288**	**492**	**–**	**780**	**28**	**26**

Total for mandatory components::													
1	2	3	4	5	6	7	8	9	10	11	12	13	14
2. SELECTIVE COMPONENTS													
1.	Food chemistry Food microbiology	8	–	–	3,0	90	32	16	16	–	58		2 1/1
Total for selective components		**1**	**–**	**–**	**3,0**	**90**	**32**	**16**	**16**	**–**	**58**	**–**	**2**
Total for both components:		**6**	**10**	**4**	**55,0**	**1650**	**812**	**304**	**508**	**–**	**838**	**28**	**28**
Clinical practice:					**2,8**	**84**							
Clinics:													
ruminants					0,8	24							
pigs					0,8	24							
horses					1,2	36							
small animals													
birds and exotic animals													
Educational practice:					**2,0**	**60**							
safety, quality of food and feed					0,8	24							
ensuring epizootic welfare (by species of animals)					1,2	36							
Internship					**7,0**	**210**							
EXAMS		**6**										**2**	**4**
TESTS			**10**									**7**	**3**
COURSE PAPERS				**4**								**2**	**2**

V. PLAN OF THE EDUCATIONAL PROCESS (5 YEAR MASTER)

№ п/п	Name of the subject	Distribution by semesters			hours							Division into courses and semesters (5year)	
		exams	tests	Course papers	credits	Total amount of hours	Classrooms lessons	for				9 sem.	10 sem.
								lectures	laboratory	practical	Self-education	14	12
												Hours per week	
1	2	3	4	5	6	7	8	9	10	11	12	13	14
5M YEAR													
1. MANDATORY COMPONENTS													
1.	Epizootology, infectious diseases and preventive medicine	9	–	9 i	4,0	120	84	28	56	–	36	6 2/4	
2.	Medicine of internal diseases of large animals	9	–	9 i	5,0	150	98	28	70	–	52	7 2/5	
3.	Food hygiene and state control	9	–	–	4,0	120	70	28	42	–	50	5 2/3	
4.	Surgical diseases of small animals with anesthesiology and resuscitation	–	9	–	3,0	90	42	14	28	–	48	3 1/2	
5.	Organization of veterinary service and public health	–	10	–	4,0	120	56	28	28	–	64	4 2/2	
6.	Traumatology and orthopedics of small animals	–	10	–	5,0	150	64	16	48	–	86		4 1/3
7.	Internal diseases of small animals	–	10	–	5,0	150	64	16	48	–	86		4 1/3
8.	Reproductology of small animals	–	10	–	3,0	90	48	16	32	–	56		3 1/2
9.	Veterinary legislation and forensic medicine	10	–	–	4,0	120	64	32	32	–	56		4 2/2
10.	Zoonoses and the concept of One health	10	–	–	4,0	120	64	32	32	–	56		4 2/2
11.	Herd Health Management	10	–	–	6,0	180	96	32	64	–	84		4 2/2

Total for mandatory components:::		**6**	**5**	**2**	**47,0**	**1410**	**750**	**270**	**480**	**–**	**674**	**25**	**23**
1	2	3	4	5	6	7	8	9	10	11	12	13	14
2. SELECTIVE COMPONENTS													
1.	Research methodology	–	9	–	3,0	90	42	14	28	–	48	3 1/2	
2.	Reproductive endocrinology Veterinary endocrinology Clinical and ecological toxicology	–	10	–	3,0	90	48	16	32	–	42		3 1/2
3.	Diseases of bees Diseases of fur-bearing animals Diseases of fish	–	10	–	3,0	90	32	16	16	–	58		2 1/1
Total for selective components		**–**	**3**	**–**	**9,0**	**270**	**122**	**46**	**76**	**–**	**148**	**3**	**5**
Total for both components:		**6**	**8**	**2**	**56**	**1680**	**872**	**316**	**556**	**–**	**822**	**28**	**28**
Clinical practice:					**3,2**	**96**							
Clinic of small animals:													
					0,8	24							
					0,8	24							
					0,8	24							
					0,8	24							
Educational practice													
Prevention of zoonoses in the system of FSQ and VPH					0,8	24							
Herd Health Management					0,8	24							
EXAMS		**6**										**2**	**4**
TESTS			**8**									**2**	**6**
COURSE PAPERS				**2**								**2**	**–**

V. PLAN OF THE EDUCATIONAL PROCESS (6 YEAR MASTER)

№ п/п	Name of the subject	Distribution by semesters			Hours							Division into courses and semesters (6year)	
		exams	tests	Course paper	credits	Total amount of hours	Classroom lessons	For				11 sem.	12 sem.
								lectures	laboratory	practical	Self-education	14	10
												Hours per week	
1	2	3	4	5	6	7	8	9	10	11	12	13	14
6M YEAR													
1. MANDATORY COMPONENTS													
1.	Diseases of ruminants	12	11	–	10	300	144	48	96	–	156	6 2/4	6 2/4
2.	Diseases of pigs	12	11	–	10	300	144	48	96	–	156	6 2/4	6 2/4
3.	Diseases of poultry	12	11	–	10	300	144	48	96	–	156	6 2/4	6 2/4
Total for mandatory components::::		**3**	**3**	**–**	**30,0**	**900**	**432**	**144**	**288**	**–**	**468**	**18**	**18**
2. SELECTIVE COMPONENTS													
1.	Clinical pharmacology Veterinary pharmacy	11	–	–	3,0	90	42	14	28	–	48	3 1/2	
2.	Laboratory diagnostics Diseases of laboratory animals Diseases of exotic animals and wildlife	12	11	–	7,0	210	96	24	72	–	114	4 1/3	4 1/3
3.	Dermatology Clinical oncology	11	–	–	3,0	90	42	14	28	–	48	3 1/2	
4.	Biosafety and biosecurity Bioinformatics, vet. genomics and proteonics	–	12	–	3,0	90	36	12	24	–	54		3 1/2
5.	Orthopedics in horses Neurology of small animals	–	12	–	3,0	90	36	12	24	–	54		3 1/2

	Ophthalmology												
1	2	3	4	5	6	7	8	9	10	11	12	13	14
Total for selective components		**3**	**3**	**–**	**19,0**	**570**	**250**	**78**	**182**	**–**	**290**	**10**	**10**
Total for both components:		**6**	6	–	**49,0**	**1470**	**718**	**230**	**9994**	**–**	**722**	**28**	**28**
Duty in the clinici:					**4,8**	**144**							
Horses					0,8	24							
Pigs					0,8	24							
Small animals					1,2	36							
poultry, exotic animals and wildlife					0,8	24							
internship					**7,0**	**210**							
Preparation of master's thesis													
EXAMS		**6**										**2**	**4**
TESTS			**6**									**4**	**2**
COURSE PAPER				**–**								**–**	**–**
TOTAL ACCORDING TO THE PLAN		**33**	**54**	**9**	**360,0**	**10797**	**4822**	**1588**	**3234**	**–**	**4748**	**28**	**28**

Head of the educational and methodical department of monitoring
quality of education and upbringing V.V. Zubchenko

Dean of the faculty of veterinary medicine, professor V.V. Sakhnyuk

List of competencies of applicants for higher education in the specialty 211 «Veterinary medicine»

(according to the Standard of Higher Education of Ukraine for the second (master's) level of higher education and the OiE recommendations on the Competencies of the First Day of the Veterinary Graduate)

1. Knowledge and understanding of the subject area and profession.
2. Ability to communicate in the state language both orally and in writing.
3. Ability to communicate in a foreign language.
4. Skills in the use of information and communication technologies.
5. Ability to communicate with representatives of other professional groups of different levels (experts in other fields of knowledge / types of economic activity).
6. Work effectively as a member of a multidisciplinary service team.
7. Be able to critically review and evaluate literature and multimedia resources.
8. Ability to learn throughout life and the desire for learning and professional development.
9. Ability to develop programs to ensure epizootic welfare in accordance with veterinary legislation and IEB requirements.
10. Ability to evaluate and ensure the quality of work performed.
11. Ability to prescribe and use drugs, evaluate their effectiveness and demonstrate procedures for reporting adverse reactions.
12. Ability to understand the importance of zoonoses and foodborne animal diseases for human health, to apply the principles of analysis and assessment of their risks.
13. Ability to understand and explain integration on animal and human health control, the role of close veterinary collaboration with human health practitioners, public health practitioners, and food safety risk analysts.
14. Ability to use the principles of local, national, international law, animal welfare standards for humane methods of breeding, transportation and slaughter for the use of slaughter products in the food chain.
15. Ability to use tools, special devices, instruments, laboratory equipment and other technical means to carry out the necessary manipulations during professional activities.
16. Ability to follow the rules of biosafety, labor protection, asepsis and antiseptics during professional activities.
17. Ability to conduct clinical trials, analyze their results in order to formulate conclusions about the condition of the animal or diagnosis.
18. Ability to apply methods and techniques of pathological and anatomical diagnosis of animal diseases to establish the final diagnosis and causes of death.
19. Ability to take, pack, store and ship samples of biological material for laboratory testing.
20. Ability to organize and conduct laboratory and special diagnostic tests and analyze their results.

21. Ability to plan, organize and implement measures for the treatment of animals of different classes and species suffering from non-contagious, infectious and invasive diseases.
22. Ability to perform obstetric and gynecological and surgical procedures and operations.
23. Ability to have skills in monitoring anesthetized animals, general and local anesthesia, animal tranquilization and pain management.
24. Ability to use the criteria of euthanasia on the principle of bioethics.
25. Ability to develop strategies for safe, sanitary and conditional keeping of animals.
26. Ability to apply knowledge of biosafety, bioethics and animal welfare in professional activities.
27. Ability to develop and implement measures to protect the population from diseases common to animals and humans.
28. Ability to develop strategies for disease prevention of various etiologies.
29. Ability to conduct forensic veterinary examination.
30. Ability to organize and exercise state control during the production and circulation of food and feed.
31. Ability to protect the environment from contamination by livestock waste, as well as materials and veterinary products.
32. Ability to market and manage veterinary drugs and services in veterinary medicine.
33. Ability to use specialized software to perform professional tasks.
34. Ability to carry out educational activities among employees of the industry and the population.
35. Ability to organize, implement and control the flow of documents during professional activities.
36. Ability to carry out artificial insemination of animals, to apply methods of control and intensive reproduction and to ensure the reproductive health of females and males.
37. Ability to assess and carry out ante-mortem inspection procedures on the basis of a risk analysis to exclude conditions and diseases for which they are not allowed to be sent for slaughter for use in the food chain.
38. Ability to correctly identify and assess aspects of welfare and conditions of humane slaughter of animals, hygiene of carcasses and slaughter products on the basis of risk analysis.
39. Ability to assess and carry out post-mortem inspection procedures for slaughter products on the basis of a risk assessment, followed by a decision on their further use in the food chain, taking into account safety and quality indicators.

40. Ability to conduct food safety and quality research, interpret the results obtained and make decisions about the further use of food.
41. Ability to understand and implement appropriate production and hygiene practices that provide the conditions for safe and quality food and feed.
42. Ability to use their professional capabilities to promote the development of veterinary medicine, knowledge and the concept of "Single Health" in order to improve animal health and welfare, the quality of animal care and veterinary health.
43. Ability to deal with incomplete information, deal with unforeseen circumstances and adapt to change.
44. Conduct a complete clinical examination and demonstrate the ability to make clinical decisions.

DISTRIBUTION OF HOURS OF CLINICAL TRAINING

General distribution of clinical practice according to the curriculum

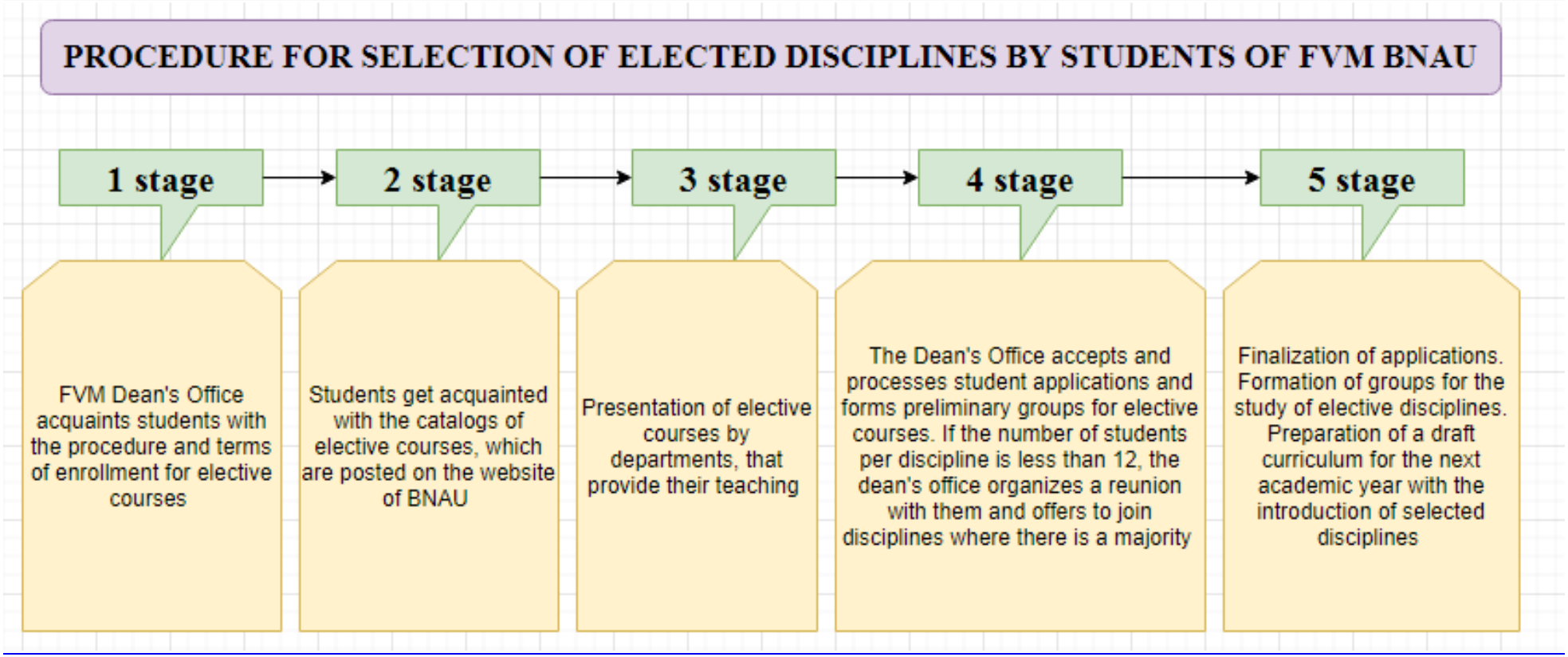
Name of practice	Semesters	Weeks
Clinical practice	6	4
Clinical practice	8	4
Clinical practice	10	4
Duty in the clinic	12	4

Distribution of clinical training hours by semesters according to the curriculum

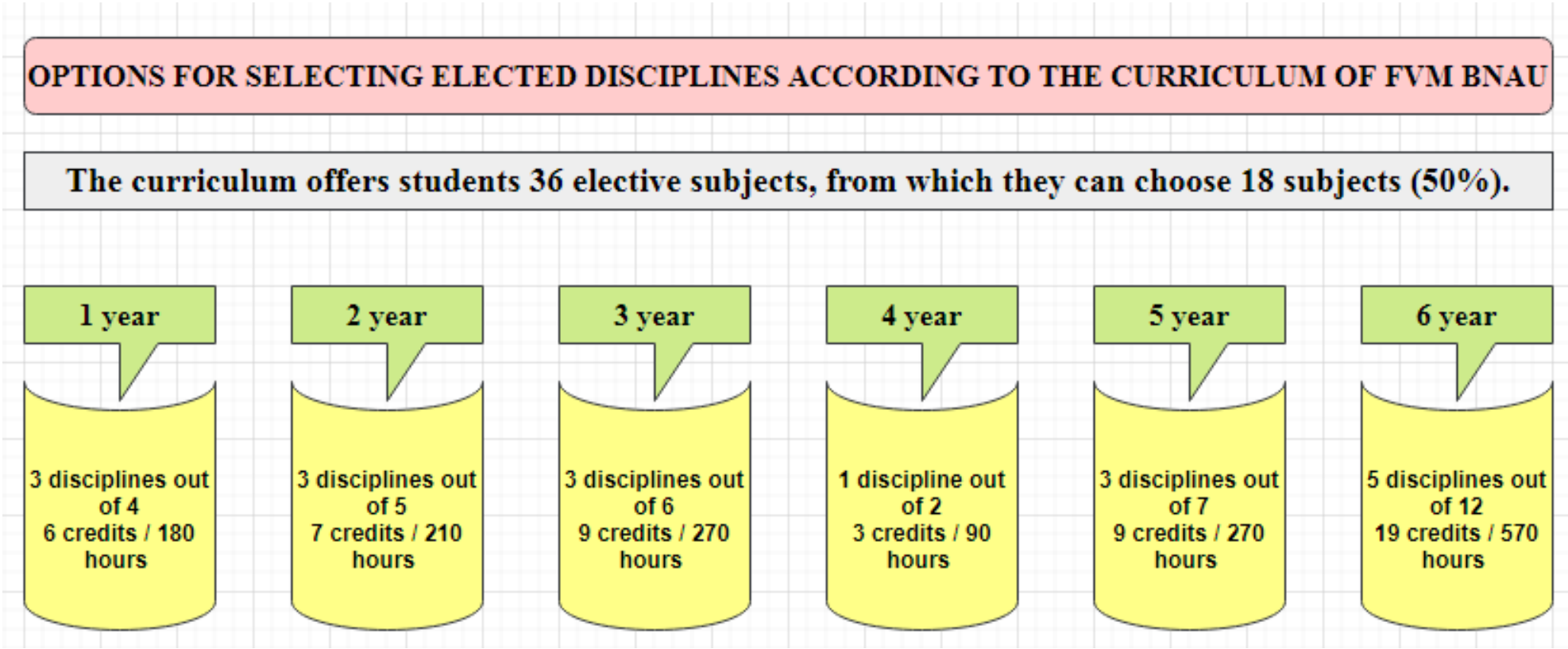
Clinic	Number of hours of clinical practice								
	3 year		4 year		5 year		6 year		Total hours
	credits	hours	credits	hours	credits	hours	credits	hours	
Ruminant clinic	1,3	38	0,6	19			1,2	36	**93**
Pig clinic	0,9	27	0,4	11			0,8	24	**62**
Horses clinic	0,9	27	0,5	16			0,8	24	**67**
Clinic of small animals	1,3	38	0,8	24			1,2	36	**98**
Clinic of poultry and exotic animals	0,2	5	0,5	14			0,8	24	**43**
Clinical practice, total	4,6	138	2,0	60	3,2	96			**294**
Clinical practice of necropsy			0,8	24					**24**

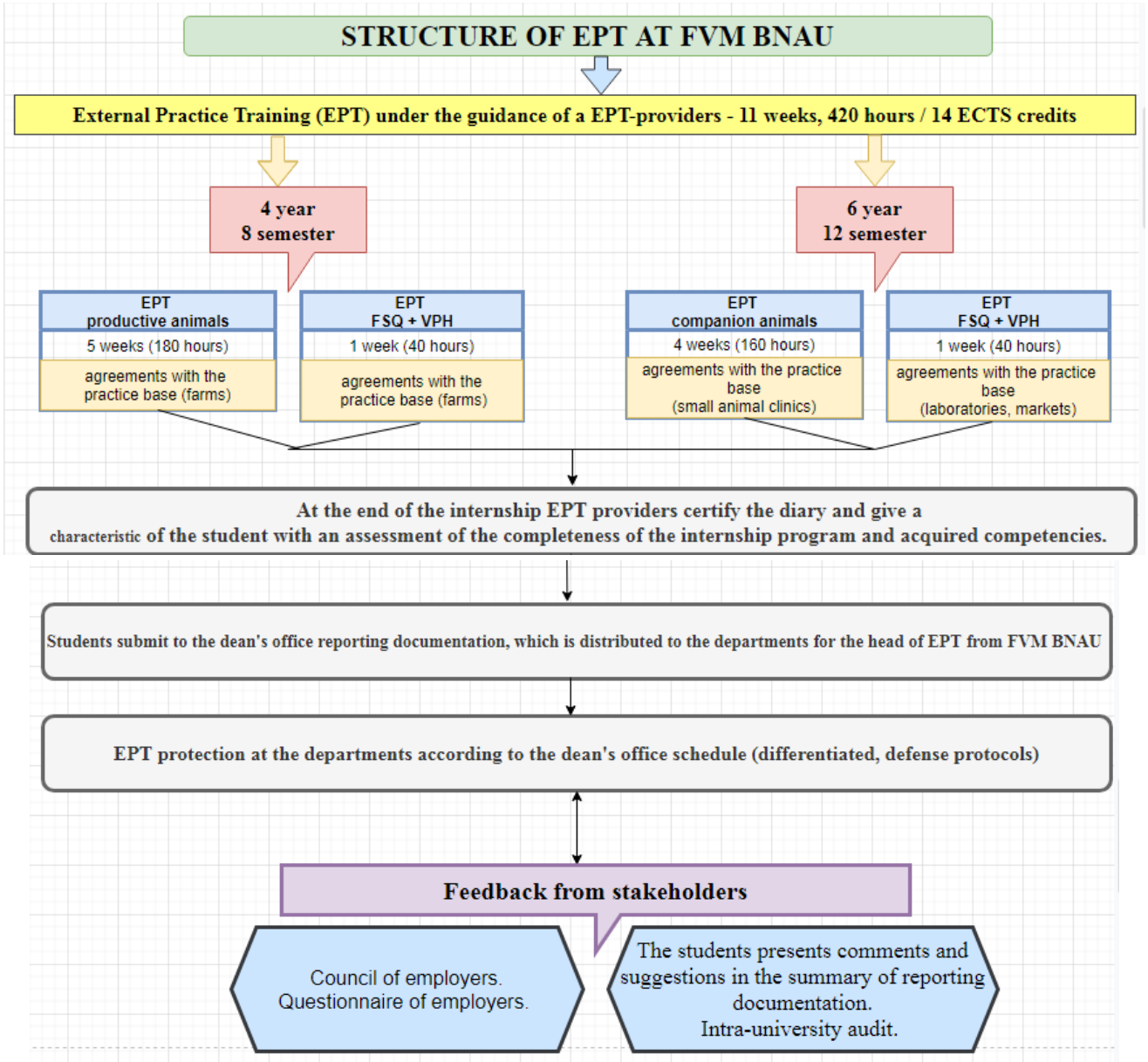
Notes. 1. Clinical training for different types of animals students undergo in the clinics of FVM BNAU, veterinary hospitals, private clinics and clinics, farms.

2. Clinical practice in the 5th year takes place in small animal clinics (small animal clinic FVM BNAU, private clinics, clinics).



«Regulations on elective courses at Bila Tserkva National Agrarian University» https://education.btsau.edu.ua/node/8


OPTIONS FOR SELECTING ELECTED DISCIPLINES ACCORDING TO THE CURRICULUM OF FVM BNAU
The curriculum offers students 36 elective subjects, from which they can choose 18 subjects (50%).
1 year
3 disciplines out of 4
6 credits / 180 hours
2 year
3 disciplines out of 5
7 credits / 210 hours
3 year
3 disciplines out of 6
9 credits / 270 hours
4 year
1 discipline out of 2
3 credits / 90 hours
5 year
3 disciplines out of 7
9 credits / 270 hours
6 year
5 disciplines out of 12
19 credits / 570 hours


STRUCTURE OF EPT AT FVM BNAU
External Practice Training (EPT) under the guidance of a EPT-providers - 11 weeks, 420 hours / 14 ECTS credits
4 year
8 semester
6 year
12 semester
EPT
productive animals
5 weeks (180 hours)
agreements with the practice base (farms)
EPT
FSQ + VPH
1 week (40 hours)
agreements with the practice base (farms)
EPT
companion animals
4 weeks (160 hours)
agreements with the practice base
(small animal clinics)
EPT
FSQ + VPH
1 week (40 hours)
agreements with the practice base
(laboratories, markets)
At the end of the internship EPT providers certify the diary and give a
characteristic of the student with an assessment of the completeness of the internship program and acquired competencies.
Students submit to the dean's office reporting documentation, which is distributed to the departments for the head of EPT from FVM BNAU
EPT protection at the departments according to the dean's office schedule (differentiated, defense protocols)
Feedback from stakeholders
Council of employers.
Questionnaire of employers.
The students presents comments and suggestions in the summary of reporting documentation.
Intra-university audit.

MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE
BILA TSERKVA NATIONAL AGRARIAN UNIVERSITY

Faculty of Veterinary Medicine

CATALOG OF ANNOTATIONS
OF COMPULSORY DISCIPLINES FOR FVM BNAU STUDENTS

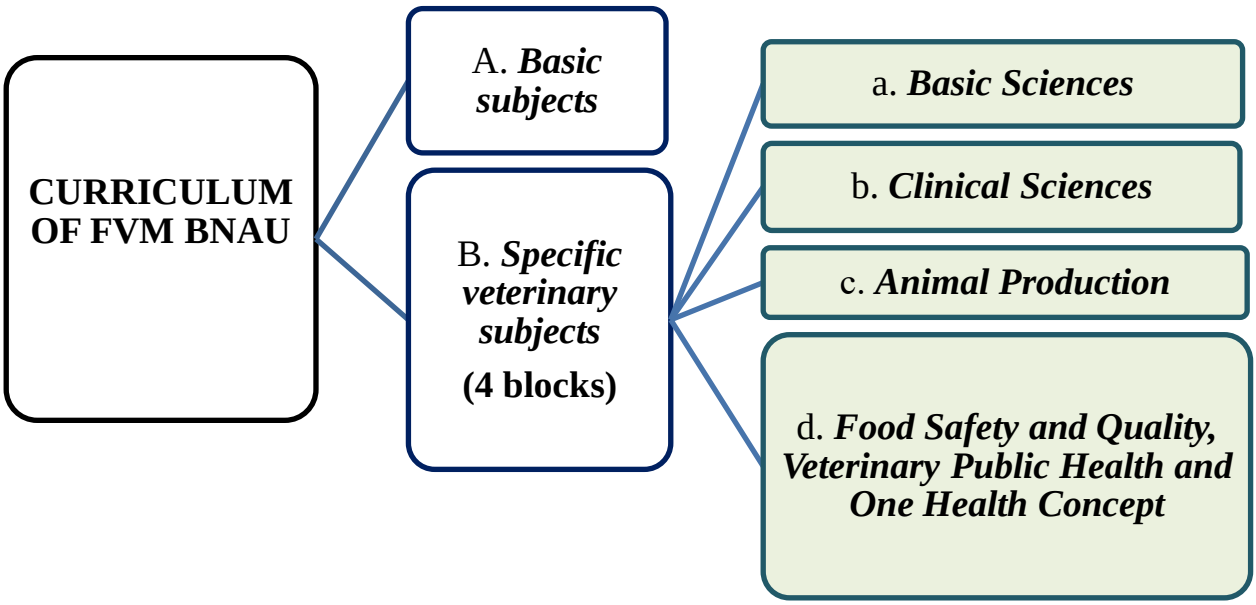
Field of knowledge: **21 “Veterinary medicine”**

Specialty: **211 "Veterinary Medicine"**

Level of higher education: **second (master's)**

Bila Tserkva

The catalog contains an annotated list of disciplines for students of the Faculty of Veterinary Medicine of the second (master's) level of higher education in accordance with the curriculum:



A. *Basic subjects*

Name of the university: Bila Tserkva National Agrarian University	
Name of the faculty: Faculty of Veterinary Medicine	
The name of the discipline	ADMISSION TO THE SPECIALTY
Teachers:	Mykola Ilnitsky, doctor habilitated DVM (guarantor).
Forms of study: Lectures / practical Study load: EKTS credits - 3 (90 hours) Weekly load: Student attendance: required	
Course and semester in which the discipline is planned to be studied	1, course I semester
Prerequisites for studying the discipline	To study the discipline "Introduction to the specialty" students must have basic training on the basis of general secondary education and colleges.
Methods of knowledge control	Test,
Learning outcomes and competencies	Students should know: The main periods of development of veterinary medicine and their connection with the change and development of social formations. Regularities of development of medical business in all periods of mankind in connection with the development and change of socio-economic formations, history, philosophy, achievements of science and culture. and be able to: To reveal the content of the main stages of formation and development of veterinary medicine from ancient times to the present in combination with socio-economic, political and cultural development of peoples, history, philosophy, folk medicine, scientific achievements in the context of human spiritual culture
Description of the discipline	
Knowledge base on the discipline	Auditoriums, anatomical museum**.**
Topics of classes	Lecture topics: Lecture 1. History of veterinary medicine as a scientific discipline. Veterinary medicine, its essence and significance for the national economy and society .. Lecture 2 Veterinary medicine in the ancient world. Folk medicine of primitive man and people of proto-Ukrainian culture. Lecture 3. Mousterian era. Late Paleolithic. Mesolithic. Neolith. Lecture 4 The emergence of veterinary medicine in connection with the domestication of animals and the development of

	animal husbandry during the Trypillia culture and the slave system in Ukraine, India, China, Mesopotamia, Egypt and other countries. Lecture 5 Veterinary medicine of ancient Greece and Rome. Lecture 6 The state and development of veterinary medicine in the Middle Ages and before the Renaissance. Lecture 7 Veterinary medicine of ancient Russia. Nikonovsky and Lavrentievsky chronicles about the state of medical affairs in Kievan Rus.
	Topics of practical classes: Content module 1 1. Objectives of teaching the history of veterinary medicine. 2. Veterinary medicine, its economic and social significance. 3. The main tasks and requirements for veterinary specialists. 4. History of development and formation of the Faculty of Veterinary Medicine of Bila Tserkva National Agrarian University Content module 2 5. Veterinary medicine in the countries of the ancient world. 6. Formation of scientific veterinary medicine and the role of ancient scientists of Greece and Rome in its development. 7. Veterinary medicine in the Renaissance. Content module 3 8. Veterinary medicine during the Second World War. 9. The contribution of domestic scientists in the development of veterinary education 10. Veterinary education in Ukraine, Tsarist Russia and Western Europe. 11. Veterinary medicine in Soviet times and during the independence of Ukraine (medical business, publication of textbooks, veterinary journals.) Content module 4 12. History of FVM. 13. Introduction of veterinary education in Ukraine, opening of veterinary universities. 14. Scientific achievements in the field of disease prevention and diagnosis
Recommended Books	1. PI Verbytsky, PP Dostoevsky, SK Rudyk History of Veterinary Medicine of Ukraine // Kyiv "Vetinform" 2002. 2. Rudik SK Course of lectures on the history of veterinary medicine // Kyiv, Aristei ", 2005. 3. Rudik SK Essays on the history of veterinary medicine // Kyiv, USGA, 2006. 4. Rudik SK History of the formation of the veterinary service in Ukraine // Kyiv, Bront, 1995. 5. Rudik SK A brief history of veterinary medicine of Ukraine // Kyiv, ANVIPU, 2005.
Language of instruction	Ukrainian

Структура дисципліни за видами занять

A Lectures	B Seminars	C Independent	D Practical	E Non-clinical	F Clinical	**H**
14	4	48	24			90год.(3 кредити)

Name of the university: Bila Tserkva National Agrarian University	
Name of the faculty: Faculty of Veterinary Medicine	
Subject	**LATIN LANGUAGE AND TERMINOLOGY**
Teachers	Tsvyd-Grom Olena Petrovna, Candidate of Philological Sciences, Associate Professor of the Department of Foreign Languages
Forms of education: practical **Volume of study loading**: ECTS credits -3 (90 hours); **Weekly work loading:** 1 semester - 2 0/2 **Student attendance:** required	
Course and semester in which the discipline is planned to be studied	1 year, 1 semester
Prerequisites for studying the discipline	There are not
Methods of knowledge control	Test
Learning outcomes and competencies	The result of teaching the discipline is the acquisition by students of the following knowledge and skills: Know: - Latin alphabet, rules of reading and emphasis; - vocabulary form of all parts of speech defined in the course; - features of declension of significant parts of speech (nouns, adjectives, verbs) system of tenses of the Latin verb; - cancellation of nouns and adjectives; conjugations; - adverbs and pronouns used in prescriptions and clinical terminology; - 50-70 winged Latin expressions. Be able: - read fluently in Latin; - perform a literal translation of Latin sentences; - be able to translate anatomical, histological, some biological and pharmaceutical terms from Latin into Ukrainian and from Ukrainian into Latin; - to determine the parts of a complex term, to understand the etymology of the term-composite, to understand the informative load of terms and to determine the general meaning of terms - composites; – - write the Latin part of the recipe correctly.
Description of the discipline	
Topics of classroom lessons	**Topics of practical classes** 1. History of the development of the Latin language. Phonetics.

	2. Division of words into syllables. Emphasis. 3. Verb. Grammatical categories of verbs. Verbs. 4. Noun. Grammatical categories of nouns. Cancellations. Conjugation. 5. Adjectives. Grammatical categories of adjectives. Conjugation of adjectives. 6. Adjectives. Pronouns. 9. Ways of word formation in the structure of medical terms. 10. The structure and rules of prescribing. Dosage forms.
Literature recommended	1. Семілетко В.І., Столбецька С.Б. Латинська мова : підручник / В.І.Семілетко, С.Б.Столбецька . – Біла Церква, БДАУ, 2002 – 160 с. 2. *Бєляєва* О. *М. Латинська мова* з *основами рецептури* і *клінічної термінології* / О. *М. Бєляєва*, І. *М. Сологор*. – К. : ВСВ «*Медицина*», *2011*. – *256* с. 3. Дерев'янченко Н. В., Литовська О. В. Латинська мова та медична термінологія: навчальний посібник (для студентів вищих мед. навч. закладів) / Н. В. Дерев'янченко, О. В. Литовська. – Харків : ХНМУ, 2017. – 172 с. 4. Шевченко Є.М. Латинська мова і основи медичної термиінології: навч. посіб. / Є.М.Шевченко. – К.: Медицина, 2012. – 240 с. 5. Зібрання крилатих висловів: практикум для самостійної роботи з дисципліни «Латинська мова» для студентів спеціальностей: 211 Ветеринарна медицина; 035 Філологія; 081 Право / упоряд. О.П. Цвид-Гром. – Біла Церква: БНАУ, 2019. – 42 с.
Language of instruction	Latin,Ukrainian

The structure of the discipline by type of occupation

A lectures	B practical	C Self-education	D laboratory	E non-clinical with animals,	F Clinical with animals	G other	H total
	28	62					90

Date of the last modification of the program	28.08.2020.

Date of last modification of the program Name of the university: Bila Tserkva National Agrarian University	
Name of the faculty: Faculty of Economics	
Subject	**BIOPHYSICS**
Teachers	Alexander Tsibulin, doctor habilitated (guarantor); Victor Nepochatenko, doctor habilitated, Oksana Strygina, PhD
Forms of study: Lectures / practical **Volume of study loading: ECTS-3 credits (90 hours);** **Weekly workloading: 1 semester - 4 (1/3)**	

Student attendance: required	
Course and semester in which the discipline is planned to be studied	1 year, 1 semester
Prerequisites for studying the discipline	«Mathematics "," Physics "," Biology»
Methods of knowledge control	Exam
Learning outcomes and competencies	Students must know and be able to: Knowledge: - mastery of scientific methodology for the analysis of natural phenomena; - mastering the basic physical laws and patterns; - understanding the essence of physical processes that underlie the functioning of living systems; - methods and techniques that are applicable to the study of biophysical phenomena. Skill: - analyze the structure of biological systems; - determine and measure the physical parameters of biological systems; - to model the interaction of physical factors with biological systems; - correctly use medical devices for diagnosis and treatment.
Description of the discipline	
The base of the discipline	Classrooms and laboratory of the department.
Topics of classroom lessons	Undamped, attenuated and forced oscillations. Wave processes and their characteristics. Physics of hearing. Ultrasound and infrasound. Fundamentals of bioreology. Surface tension. Internal friction, viscosity. Thermodynamic method study of medical and biological systems. Thermodynamics of open systems. Structural elements of biological membranes. Passive and active transport of substances through membrane structures. Membrane potentials rest. Potentials. Fundamentals of hemodynamics. Physical and biophysical basics of virography. Dispersion and impedance of biological tissues. Magnetic field and its characteristics. Electromagnetic oscillations and waves in biological environments. The effect of the electromagnetic field on biological objects. General characteristics and classification of electronic medical devices.

	Study of the characteristics of the optical microscope Fundamentals of refractometry Polarization of light .. Fundamentals of polarimetry. Absorption of light. Scattering of light. Dispersion of light. Thermal radiation of bodies, its characteristics. Basic ideas of quantum mechanics. Schrödinger's equation. Quantum mechanical methods of studying biological objects. Resonant methods of quantum mechanics. Luminescence. The phenomenon of the photo effect. The concept of electrography organs and tissues. Induced radiation. Lasers, their use in medicine. Ionizing radiation. X-rays. Radioactivity, basic types and properties. Dosimetry of ionizing radiation.
P67–69 recommended literature:	1. Савельев И.В. Курс общей физики. М.Наука. т.1-3, 1989. 2.Зисман Г.А., Тодес О.М. Курс общей физики. М. Наука. т. 1-3, Київ, “ Едельвейс”, Дніпро, 1994. 3.Волькенштейн В.С. Сборник задач по общему курсу физики. М. 4. Розумнюк В.Т., Якименко І.Л. Фізика. Основніпоняття, явища і закони. Посібник. – Б. Церква, 2004. – 71 с. 5. Грабовский Р.И. Курс физики: учебное пособие для с/х вузов. – М., 1980. – 607 с. 6. Посудін Ю.І. Основифізики і біофізики: Навчальнийпосібник. – Київ, НАУ, 2001. – 250 с. 7. Якименко І.Л., Розумнюк В.Т. Основнітермінифізики. Методичнівказівки для студентіваграрнихвузів. – Б. Церква, 2001. – 31 с. 8. Фізика з основами біофізики: Методичнівказівки до лабораторно-практичних занять для студентіваграрнихвузів / В.Т.Розумнюк, І.Л. Якименко, І.А. Непочатенко та ін. – БілаЦерква, 2005.
Language of instruction	Ukrainian

The structure of the discipline by type of occupation

A lectures	B seminars	C Self-education	D laboratory	E non-clinical with animals, models	F Clinical with animals	G other	H total
14		34	42				90

Date of the last modification of the program	28.08.2019 p.

Name of the discipline	**ZOOLOGY**

Lecturer	Oleksandr Khomiak Candidate of agricultural sciences, Associate professor
Year of study, semester	1th, 1 semester
Faculties where the students are offered to study the discipline	Faculty of Veterinary Medicine
List of competencies and learning outcomes provided by the discipline	**Learning outcomes** *Knowledges* - patterns of structure, life, reproduction and development of wild animals, which is the basis for the study of production technologies in fisheries; - the main systematic groups of animals of the world, as well as the evolutionary relationships between them; - the animal system and principles of modern classification and the historical origin of the major subtypes and classes of animals. *Skills:* - apply zoological knowledge in the development of biological measures for the control of parasites and vectors of pathogens; - use zoological knowledge about wild hydrobionts in breeding work; - use knowledge in the protection of wildlife and the biosphere as a whole.
Discipline description	
Students' limit in a group	25
Topics of in-class activity	**Lecture topics:** 1. Unicellular and intestinal cavity 2. Worms 3. Shellfish or molluscs 4. Arthropods 5. Primary, fish class 6. Classes amphibians (amphibians), reptiles 7. Classes of birds, mammals **Topics of practical classes:** 1. The simplest 2. Intestinal cavity 3. Flat worms 4. Round worms 5. Ringworms 6. Shellfish (Toothless) 7. Arthropods (river cancer, spider, ticks, insects) 8. Fish 9. Amphibians 10. Reptiles 11. Birds 12. Mammal
Language of teaching	Ukrainian

	години
A: lectures	14
B: seminars	
C: self-study under the supervision of a teacher	48
D: laboratory and desktop work	28
E: non-clinical work with animals	
F: clinical work with animals	
G: others (specify)	
H: total	90

Name of the university: Bila Tserkva National Agrarian University	
Name of the faculty: Faculty of Veterinary Medicine	
Subject	**FEED PLANT BIOLOGY AND TOXIC PLANTS**
Lecturer	Kachan Lesia Mykhailivna, PhD in Agricultural Sc., Ass. Prof. of the Department of Plant Breeding Technologies and Plant Protection
Forms of study: Lectures / practical **Volume of study load:** ECTS credits - 3 (90 hours) **Form of study:** full-time **Weekly loading:** 3 (1/2) **Student attendance:** obligatory	
Year and semester in which the discipline is planned to be studied	1st year, 1 semester
Prerequisites for studying the discipline	"Biology" (school course), "Chemistry", "Latin language and terminology"
Methods of knowledge control	Test
Learning outcomes and competencies	**Learning outcomes defined by the Standard of Higher Education in Ukraine for specialty 211 "Veterinary Medicine": PH1, PH2, PH7, PH10, PH12.** Students must know: main fodder plants; classification of fodder and poisonous plants; biological and ecological features of fodder and poisonous plants; effects of toxic plants on animal health. Be able to: use in practice the acquired knowledge from the course "Biological features of forage crops and toxic plants"; know perfectly morphological and biological features of forage crops; recognize the full list of groups of fodder crops, their productivity, which are the main in fodder production; navigate in special terms related to plant biology, found in the scientific literature; determine the species affiliation of individual crops; determine the species of poisonous plants; determine the impact of toxic plants on animal health.
Description of the discipline	
The base of the discipline	Classrooms, training and production center and laboratories of BNAU.

Topics of classroom lessons	Topics of lectures: 1. Introductory lecture. 2. Ecological features of forage plants. 3. Biological features of development of fodder plants. 4. General issues of field and meadow fodder production. 5. Natural forage lands of Ukraine. Topics of practical classes: 1. Grain crops (bread of the first and second groups). 2. Cereals (legumes). 3. Annual forage crops: Root and tuber crops. 4. Melons. 5. Annual herbs. 6. Cabbage fodder crops. 7. Uncommon fodder crops. 8. Plants of hayfields and pastures: Perennial legumes. 9. Perennial herbs. 10. Sedges. 11. Poisonous and harmful plants.
Recommended literature:	1. Адаптивні технології вирощування круп'яних культур: [колект. монографія: у 2 ч.] / за ред. д-рів с.-г. наук С.П. Полторецького і В.Я. Білоножка. – Умань: Сочінський М. М. [вид.], 2018. 2. Біологія та екологія сільськогосподарських рослин: підручник / В.Д. Паламарчук, І.С. Поліщук, С.М. Каленська, Л.М. Єрмакова. – Вінниця, 2013. – 724 с. 3. Годівля сільськогосподарських тварин: підручник / [Ібатуллін І.І., Мельничук Д.О., Богданов Г.О. та ін.]; за ред. академіка НААН України І.І. Ібатулліна. – Вінниця: Нова книга, 2007. – 616 с. 4. Лихочвор В. В., Петриченко В. Ф., Іващук П. В., Корнійчук О.В. Рослинництво. Технології вирощування сільського-сподарських культур / за ред. В. В. Лихочвора, В.Ф. Петриченка. – 3-е вид., виправ., допов. – Львів : НВФ Українські технології, 2010. – 1088 с. 5. Мостіпан М. І. Рослинництво. Лабораторний практикум.– Кіровоград: видавець – Лисенко В.Ф.,2015. – 320с.
Language	Ukrainian

The structure of the discipline by type of occupation

A lectures	B seminars	C Self-education	D laboratory	E non-clinical with animals, models	F Clinical with animals	G other	H total
14	2	48	26	-	-	-	90

Date of the last modification of the program	28.08.2020

Name of the university: Bila Tserkva National Agrarian University

Name of the faculty: Faculty of Veterinary Medicine	
Subject	**FOREIGN LANGUAGE FOR PROFESSIONAL PURPOSES**
Teacher	Reida Olga Andreevna, senior lecturer of the Department of Foreign Languages
Forms of education: practical **Volume of study loading: ECTS-8 credits (240 hours);** **Weekly workload: 1 semester - 2 (1/1); 2nd semester - 2 (1/1) 3rd semester - 2 (1/1); 4th semester - 2 (1/1)** **Student attendance: required**	
Course and semester in which the discipline is planned to be studied	1,2 years, 1,2,3,4 semesters
Prerequisites for studying the discipline	The program has a practical orientation, proposing the acquisition by students of professional and functional communicative competence in the use of English. This is done by integrating speech skills and language skills within the thematic and situational context according to the academic and professional spheres of the learner. The main task in teaching a foreign language - to teach students to know, understand, as well as consciously, competently and creatively use terms, be able to work with a foreign text, read literature on the specialty and original literature on the specialty; make reports on the studied topic and the content of the text in English; to conduct a conversation in the mode of "teacher-student", "student-student" on the mastered topic and the content of the text.
Methods of knowledge control	Test, exam
Learning outcomes and competencies	Students must know and be able to: Knowledge: - practical grammar course; - professional terminology. Skill: - read, translate and analyze authentic literature, scientific and journalistic literature in the specialty; - do written translation of articles, reports, messages, translate, analyze; - have the correct monological and dialogic speech, translate English-language professional texts into the state language, using bilingual terminological dictionaries, electronic dictionaries; - to prepare public speeches on a large number of sectoral issues, using appropriate means of verbal communication; – - to find new text, graphic, audio and video information contained in English-language industry materials (both in printed and electronic form), using appropriate search methods and terminology.
Description of the discipline	
The base of the discipline	Classrooms
Topics of classroom lessons	**Змістовий модуль 1. Ветеринарна медицина як наука**

	Тема 1.1. Вступ. Визначення історії становлення біології, головні етапи розвитку біологічної науки. Порядок слів в англійській мові. Дієслово tobe у PresentSimple Тема 1.2. Біологія як наука на сучасномуетапістановлення. Моя професія –ветеринар. Граматичні структури Thereis/are, havegot. Тема 1.3. Ветеринарна медицина як наука. Іменник. Множина іменників. Тема 1.4. Історія ветеринарної медицини. Множина іменників латинського походження. Чотири типи питань. Present Simple. Statements, Negatives, Questions Тема 1.5. Основні спеціалісти ветеринарії медицини. Present Continuous Statements, Negatives, Questions. Тема 1.6. Світ мікробів та паразитів. Бактерії. Основні характеристики бактерій. Роль бактерій у природі.«Cell reproduction», «Gregor Mendel». Past Continuous. Statements. Negatives. Questions. Тема 1.7. Віруси. Основні характеристики вірусів. Вплив вірусів на тварин. Future Continuous. Тема 1.8. Будова клітин. Основні характеристики клітин. Типи клітин. Тексти «Cell reproduction», «GregorMendel». Складанняпитань. Present Perfect/ Past Perfect. Statements. Negatives. Questions **Змістовий модуль 2. Класифікація тварин** Тема2.1. Класифікація тварин. Future Perfect. Active voice. Граматичні часи дієслова в активному стані. Тема 2.2. Безхребетні. Еволюція безхребетних тварин. Граматичні часи дієслова в активному стані. Тема 2.3. Основні типи безхребетних тварин. Модальні дієслова. Прийменники (in, at, on, within). Тема 2.4. Хребетні. Еволюція хребетних тварин. Основні характеристики хребетних. Vertebrates. Інфінітив. Функції інфінітива. Тема2.5. Використання Many, much, little, few, a little. Інфінітивна конструкція «Complexsubject» Тема 2.6. Ссавці. Основні характеристики ссавців. Використання Many, much, little, few, a little. Інфінітивна конструкція «Complexsubject» Тема 2.7. Рептилії, характеристики рептилій. Граматична конструкція «Complexobject». Тема 2.8. Амфібії. Особливості та характеристики. Порівняльна характеристика амфібій та рептилій. Тема 2.9. Риби. Іхтіологія – наука про риб. Види риб та середовище їх існування. Тема 2.10. Клас птахи. Загальна характеристика. ***Змістовий модуль 3. Система органів тварин.*** Тема 3.1. Tissues.Тканини. Структури: If I do….and If Idid Тема 3.2. Theclassificationoforgans. Наукова класифікація тканин. Функції тканин. Основні характеристики.

	Тема 3.3. OrgansandOrganSystems. Системи органів. Основні системи органів у тварин. Характеристики та будова систем органів. Структури: IfIknew…..IwishIknew. Тема 3.4. NutritionandDigestion. Особливості травної системи тварин. Хімічне травлення, травні соки.TheImmuneSystem. Імунна система. Тема 3.5. Thelymphaticsystem. Кров і кровоносна система. Зміст крові ссавців. Blood and circulatory system. FutureSimple. Тема 3.6. GasExchangeandCirculation. Дихальна система. Структури: If I had known…I wish I had known. Тема3.7. The urinary systemand reproductive system. Сечовидільна та репродуктивна система Тема 3.8. Skeletalsystem. Скелетна система.TheNervousSystem. Нервова система. Структура goingto. ***IV семестр. Змістовий модуль 4. Хвороби.*** Тема 4.1. InfectiousDiseases. Інфекційні захворювання Тема 4.2. Animal Diseases Caused by Bacteria.Хвороби тварин, спричинені бактеріями. Тема 4.3. NoninfectiousDiseases. Неінфекційні захворювання Тема 4.4. Hereditary, Congenital and Acquired Disease.Спадкові, вроджені та набуті захворювання Тема 4.5. General and Local Disease. General and Local Disease Тема 4.6. Structural and Functional Disease.Структурна та функціональна хвороба Тема 4.7. Epizootiology. Епізоотологія. ParasiteOriginDiseases. Хвороби спричинені паразитами Тема 4.8. Brucellosisasacontagiousdisease. Бруцельоз - заразне захворювання Тема 4.9 Classicalswinefever. Класична чума свиней. FootandMouthDisease. Ящур Тема 4.10. Anthraxtreatmentandprevention. Лікування і профілактика сибірської виразки
Literature recommended	1. Neil O' Sullivan James D. LibbinCareer paths: agriculture, Express Publishing, 2011 2. Комарова Е.Н. Английскийязык для специальности «Зоотехния» и «Ветеринария», «Академия», Москва, 2010. 3. EnglisforVeterinaryMedicine 1: учебноепособие для обучающихся по всемнаправлениямфакультетаветеринарноймедицины и технологииживотноводства / Саенко Е.С., Соломатина А.Г.– составители. – Воронеж: ФГБОУ ВО Воронежский ГАУ, 2017. – 120 с. 4. Glendinning Eric H., Howard Ron. Professional English in Use Medicine. Cambridge. 2011, 167 p. 5. Ehrlich Ann, Schroeder Carol L. Medical Terminology for Health Professions. 7 edition. — Cengage Learning, 2012. — 688 p.

	6. Gylys Barbara A., Masters Regina M. Medical Terminology Simplified. A Programmed Learning Approach by Body Systems Publisher: E. A. Davis. 2014 – 672p.
Language of instruction	English

The structure of the discipline by type of occupation

A lectures	B seminars	C Self-education	D laboratory	E Non clinical with animal models	F Clinical with animals	G other(practicali)	H total
		120				120	240

Date of the last modification of the program	28.08.2019 p.

Name of the university: Bila Tserkva National Agrarian University	
Name of the faculty: Faculty of Veterinary Medicine	
Subject	**BIOMEDICAL STATISTICS AND COMPUTER SCIENCE**
Teachers	Ulyana Revitska, PhD (Candidate of Physical and Mathematical Sciences)
Forms of study: Lectures / laboratory **Volume of study loading: ECTS-3 credits (90 hours);** **Weekly workloading: 2 semester - 2 (1/1)** **Student attendance: required**	
Course and semester in which the discipline is planned to be studied	1 year, 2 semester
Prerequisites for studying the discipline	School course of mathematics
Methods of knowledge control	Test
Learning outcomes and competencies	Students must know and be able to: Knowledge: - have deep knowledge in the field of information and communication technologies, which are used in professional activities; - know the principles and features of using specialized software. Skill: - be able to use information and communication technologies in the professional field, which requires updating and integration of knowledge; – - ability to perform statistical evaluation of the parameters of biological objects and processes in the

	bodies of animals of different species under normal and pathological conditions. Ability to model biological and technological processes.
Description of the discipline	
The base of the discipline	Classrooms of the department are equipped with computer equipment.
Topics of classroom classes	General and sample population; representativeness of the sample; determining the required sample size. Data entry in an Excel spreadsheet. –Discrete and interval variation series; empirical distribution function. Graphical representation of the distribution using the "Histogram" function. -Statistical hypotheses, errors of the first and second kind. Normal distribution. Excel statistical functions. –Critical points, critical areas. Student's, Pearson's criteria and conditions of their application. Excel algorithms useful in statistical calculations. –Correlation dependence, correlation coefficient, regression lines. –Curvilinear regression models.
Literature recommended	**1.** Біостатистика. Підручник за загальною редакцією члена-кореспондента АМН України, професора В. Ф. Москаленка. – Київ, Книга плюс, 2009. – 184 с. **2.** Вища математика. Теорія наукових досліджень у фармації та медицині: підручник / Е. І. Личковський, П. Л. Свердан. – К.,: Знання, 2012. – 476 с. 3. Математика в биологии и медицине / Н. Бейли. – М.: Мир, 1970. – 326 с. 4. Статистична обробка експериментальних даних: Навчальний посібник / О.П. Мельниченко, І.Л. Якименко, Р. Л. Шевченко – Біла Церква, 2006. – 38 с. 5. Елементи теорії ймовірностей та математичної статистики / Р.Л. Шевченко, У. С. Ревицька, В. В. Івасюк: Навчальний посібник. – Біла Церква, 2008. -216с.
Languge of instruction	Ukrainian

The structure of the discipline by type of occupation

A lectures	B seminars	C Self-education	D laboratory	E non-clinical with animals, models	F Clinical with animals	G other	H total
16		58	16				90

Date of the last modification of the program	28.08.2019 р.

Subjects	UKRAINIAN LANGUAGE (FOR PROFESSIONAL PURPOSES)
Teacher	Pohorila Svitlana Hryhorivna, Candidate of Pedagogical Sciences, Associate Professor of the Department of Slavic Philology, Pedagogy and Teaching Methods; Tymchuk Inna Mykolayivna, Candidate of Pedagogical Sciences, Associate Professor of the Department of Slavic Philology, Pedagogy and Teaching Methods.
Forms of education: practical **Volume of study load: ECTS-3 credits (90 hours);** **Weekly workload: 2nd semester - 2 0/2** **Student attendance: required**	
Course and semester in which the discipline is planned to be studied	1 course, 2 semesters
Faculties whose students are invited to study the discipline	Faculty of Veterinary Medicine
Methods of knowledge control	Exam
List of competencies and relevant learning outcomes provided by the discipline	The result of teaching the discipline is the acquisition by students of such knowledge and skills. Knowledge: state language, tactics and communication strategies; norms of modern Ukrainian literary language and their practical mastery; Skills: to communicate in the state language both orally and in writing; apply knowledge of the state language both orally and in writing; use the state language during professional and business communication; be responsible for fluency in the state language and the development of professional knowledge; correctly use different language tools in accordance with communicative intentions; to express opinions accurately for successful solution of problems and tasks in professional activity.
Description of the discipline	
Prerequisites for studying the discipline	General Ukrainian language course
The maximum number of students who can study at the same time	25 applicants
Topics of classes	**Topics of practical classes:** **Module 1. Language is a social phenomenon** Topic 1.1. The state language is the language of professional communication. Topic 1.2. Normativity is the main feature of the culture of professional communication. Topic 1.3. Functional styles of the Ukrainian literary language in professional communication. Topic 1.4. Scientific terminology in professional communication. Topic 1.5. Professional communication of future specialists in the specialty "Veterinary Medicine".

	Topic 1.6. The culture of oral professional communication of future professionals. Topic 1.7. Forms of collective discussion of professional problems. Topic 1.8. The art of public speaking. Topic 1.9. Scientific communication as a component of professional activity of future specialists in veterinary medicine. **Module 2. Business papers as a means of written professional communication** Topic 2.1. Document - the main type of business speech. Topic 2.2. Documents on personnel and contract issues. Topic 2.3. Documents on personnel and contract issues. Topic 2.4. Reference and information documents. Topic 2.5. Etiquette of business correspondence. Topic 2.6. Features of editing scientific texts of professional orientation. Topic 2.7. Execution of test tasks, conclusion and editing of documents.
Recommended Literature:	1. Baranovskaya LV, Ivashchenko NI, Sarazhinskaya IA, Baran NA Ukrainian language for professional purposes. A textbook for university students, compiled according to the requirements of credit-module learning technology. - Bila Tserkva: BSAU, 2008. - 176 p. 2.Gritsenko TB Ukrainian language for professional purposes: Textbook. - K .: Center for Educational Literature, 2019. 624 p. 3. Ukrainian spelling. - Kyiv: Condor Publishing House, 2019. - 284 p. 4. Shevchuk SV, Klimenko IV Ukrainian language for professional purposes: textbook. 5th ed., Corrected. and supplemented. K .: Alerta, 2019. 640 s.
Language of instruction	Ukrainian

The structure of the discipline by type of occupation

A lectures	B seminars	C independence	D laboratory	E non-clinical with animals models	F clinical with animals	G other	H total
	32	58					90 (3 credits)

Date of the last modification of the program	27.08.2020 y.

Name of the university: Bila Tserkva National Agrarian University	
Name of the faculty: Faculty of Veterinary Medicine	
Subject	**CHEMISTRY**
Teachers	Tsekhmistrenko Svitlana Ivanivna Doctor of Agricultural Science, Professor, DA Polishchuk Vatalii Mykolaiovych Ponomarenko Nataliia Viktorivna

	Polishchuk Svitlana Anatoliivna Candidate of Agricultural Science, Associate Professor at the Department of Chemistry, PhD
Forms of study: Lectures / practical **Volume of study loading: EKTS credits - 8 (240 hours);** **Characteristics of the discipline:** **Form of study: full-time** **Number of credits of the corresponding ECTS - 8** **The total number of academic hours is 240** **Lectures - 60 Practical classes - 92** **Self-education work - 88 hours.** **Teaching method: stationary** **Weekly loading:** **Student attendance: required**	
Course and semester in which the discipline is planned to be studied	1m, 2 m course II, III semester
Prerequisites for studying the discipline	Inorganic chemistry, bioinorganic chemistry, physical and coloid chemistry, organic chemistry
Methods of knowledge control	Test
Conditions for taking the course:	Attendance according to the rules of study, performance of individual tasks, participation and discussions, expression and argumentation of the point of view.
Learning outcomes and competencies	Learning outcomes Knowledges: – modern methods of physico–chemical analysis in veterinary medicine; - solutions and their properties, buffer solutions, the concept of osmosis, diffusion, adsorption; – the structure, functions and metabolism of carbohydrates, lipids, proteins, nucleic acids, amino acids, amines, vitamins, hormones, enzymes in normal and with various metabolic disorders; – chemical composition of urine, liver, kidneys, muscle and nervous tissues of farm animals; – exchange of proteins, lipids, carbohydrates, nucleic acids, vitamins, enzymes, hormones, water and minerals in the organism of farm animals and poultry; – to understand the relationship between different types of exchange; – specificity of metabolism of substances in different organs, tissues and cells. Skills: – to prepare labdishes for biochemical research, – to select biological samples; – to preserve and process biological samples by appropriate methods for conducting biochemical analyzes; – to prepare artificial solutions of carbohydrates, macro– and microelements, vitamins, proteins, amino acids and other substances;

	to determine the sorption properties of different surface–active substances; – prepare buffer solutions for research in vitro; – to prepare percent, normal, molar solutions; – to determine osmotic pressure; – to determine the active acidity of the medium; – to prepare colloidal solutions; – to use devices and laboratory equipment when studying the chemical composition of a living organism and indicators characterizing metabolic processes.
Short course plan:	Classification of analytical methods in veterinary medicine. Chemical reaction kinetics. Solutions. Chemistry of biogenic metals. Hydrocarbons. Structure, chemical properties and application of carbohydrates, lipids, nitrogen-containing compounds. Carbohydrates, lipids, proteins and nucleotide metabolism. Biochemistry of biologically active compounds. Biochemistry of tissues.
	Description of the discipline
The base of the discipline	Auditoriums, laboratories
Topics of classroom lessons	• Classification of analytical methods in veterinary medicine; • Chemical reaction kinetics. Catalysis. • Coordination compounds. • Solutions. • Chemistry of biogenic metals. • Hydrocarbons. • Structure, chemical properties and application of alcohols, aldehydes, ketones • Structure, chemical properties and application of carboxylic acids • Structure, chemical properties and application of carbohydrates • Structure, chemical properties and application of lipids • Structure, chemical properties and application of nitrogen-containing compounds, aminoacides, proteins • Heterocyclic compounds. Nucleic acids, alkaloids • Surface phenomena. Adsorbent. • Osmosis, Diffusion and methods of determining osmotic pressure. • Acid–base equilibrium in biological systems. Buffer solutions. • Colloidal solutions and methods of their obtaining. Properties of colloidal solutions. • Carbohydrates metabolism • Lipid metabolism • Protein matabolism • Nucleotide metabolism • Biological membranes • Lipid-soluble-vitamin. Water-soluble-vitamin. • Enzymes.

	• Lipophilic and hydrophilic hormones/ • Biochemistry of muscular and connective tissue. • Biochemistry connective tissue • Biochemistry liver. • Biochemistry of the kidneys and urine. • Biochemistry of nervous tissue.
Recommended literature:	1. Бойчук І.Д., Зубрицька Л.О. Органічна хімія. – К., 2013. – 240 с. 2. Загальна хімія : підручник / О. І. Панасенко та ін. Запоріжжя : ЗНУ, 2016. 462 с. 3. Кольман Я., Рем К.-Г. Наглядная биохимия. 4-е изд.: Пер. с нем. М.: Мир, 2017. □ 469 с 4. Кононський О.І. Біохімія тварин – К.: Вища школа, 2006. – 455 с. 5. Кононський О.І. Органічна хімія – К.: Дакор, 2003.– 568 с. 6. Кононський О.І. Фізична і колоїдна хімія. Підручник. – 2-е вид. доп. і випр. – К.: Центр учбової літератури, 2009. – 312 с. 7. Цехмістренко С.І., Кононський О.І., Цехмістренко О.С. Біохімія тварин з основами фізичної і колоїдної хімії. Практикум: Навч. посіб., 2011. – 216 с. 8. Stoker, H. Stephen. General, organic, and biological chemistry. Nelson Education, 2012.
Language of teaching	Ukrainian

Course evaluation:
Total number of assessment students: 50

A	B	C	D	E	FX
48,0	36,0	14,0	2,0	0,0	0,0

Структура дисципліни за видами занять

A lectures	B seminars	C Self-education	D laboratory	E non-clinical with animals, models	F Clinical with animals	G other	H total
60	10	88	82				240

Date of the last modification of the program	28.08.2020 p.

Name of the university: Bila Tserkva National Agrarian University	
Name of the faculty: Faculty of Biology and Technology	
Subject	**CELL GENETICS AND MOLECULAR BIOLOGY**
Teachers	Bushtruk Marina Vitalievna PhD (guarantor);
Forms of education: Lectures / practical Volume of study loading: ECTS credits -3 (90 hours); Weekly workloading: 2nd semester - 3 (1/2); Student attendance: required	
Course and semester in which the discipline is planned to be studied	1year(master), 2 semester

Prerequisites for studying the discipline	«Anatomy of farm animals, "Physiology", "Breeding", "Biotechnology", "Feeding" animals».
Methods of knowledge control	test
Learning outcomes and competencies	Students must know and be able to: Knowledge: - basic research methods; - structures of professional activity; - in the field of information and communication technologies used in professional activities; Skill: - choose the topic of research, put experiments, analyze, summarize and statistical processing of the data, compare them with the literature; - solve complex problems and problems that arise in professional activities; -perform professional activities that require updating and integration of knowledge information and communication technologies; -use information and communication technologies in the professional field, which requires updating and integration of knowledge.
Description of the discipline	
The base of the discipline	Classrooms of the department, farms of the research and development economy of the university, farms of agricultural enterprises.

Topics of classroom lessons	Cytological bases of heredity. The cell as the material basis of heredity. The leading role of the cell nucleus as a carrier of hereditary information. Chromosome morphology. Species features of karyotypes. Distribution of genetic material during cell division. Fertilization. Molecular basis of heredity. Structure of hereditary material (nucleic acids as carriers of genetic information). Chemical composition and structure of nucleic acids. General features of DNA replication. General features of transcription. General features and types of RNA Gene structure. From-creation of genetic information. Molecular mechanisms of the most important genetic processes. Protein biosynthesis on ribosomes. Genetic code and its properties. Protection and restoration of hereditary material. Inheritance of traits linked to sex. Evolution of sex formation: epigamous, progamous, synhamous. Sex inheritance as proof of chromosomal theory of heredity. Types of chromosomal sex determination. Symbolism of sex chromosomes and their genetic features. Mutational variability. The concept of mutations and mutagenesis, their place in the general scheme of modern classification of variability. The history of the doctrine of mutations and its role in the formation of a materialist worldview of understanding evolution. Genetic bases of hereditary resistance against diseases. Genetic resistance and susceptibility to diseases in animals. Inheritance of stability. Monogenic and polygenic nature of stability. The role of concordance in twins to determine hereditary disease. Determining the origin of offspring by blood type. Immunogenetics. Determination and use of blood groups in genetic examination of the authenticity of the origin of farm animals and poultry.
Literature recommended	1. Войтенко С. Л. Генетика/С. Л. Войтенко, К. В. Копилов, К. В. Копилова.-Редакційно – видавничий відділ ПДАА, 2014.- 227с. 2. Генетика з основами розведення та відтворення сільськогосподарських тварин / навчально-методичний посібник // С. Л. Войтенко, О.О. Васильєва, Л.В. Вишневський, Б.С. Шаферівський – Полтава : ПП Астрая., 2018 – 213 с. 3. Демидов С.В. Генетика постнатального онтогенезу / С.В. Демидов, Н.М. Топчій, Г.Д. Бердишев, Г.І. Климнюк, Т.І. Гавриленко. – К.: Фітосоціоцентр, 2006. – 251 с. 4. Жегунов Г.Ф. Цитогенетические основы жизни. Учеб. пособие для студентов высш. учеб.

	заведений / Г.Ф. Жегунов, Г.П. Жегунов. – Х.: Золотые страницы, 2004. – 672 с. 5. Кандиба Н.М. Генетика: курс лекцій: Навч. посіб. для студ. вищ. навч. закл. / Н.М. Кандиба. – Суми: Університетська книга, 2013. – 397 с. 6. Хмельничий Л.М. Основи генетики та селекції сільськогосподарських тварин [навчальний посібник] / Л.М.Хмельничий, І.О.Супрун.- К.:Аграрна освіта, 2011. – 497 с.
Language of instruction	Ukrainian

Структура дисципліни за видами занять

A lectures	B seminars	C Self-education	D laboratory	E non-clinical with animals, models	F Clinical with animals	G other	H total
16	-	42	32	-	-	-	90

Date of the last modification of the program	28.08.2019 p.

B. *Specific veterinary subjects*

a. *Basic Sciences*

Name of the university: Bila Tserkva National Agrarian University	
Name of the faculty: Faculty of Veterinary Medicine	
The name of the discipline	ANATOMY ANIMAL
Teachers:	Mykola Ilnitsky, doctor habilitated DVM (guarantor); Vasil Storozhuk, PhD, DVM; Victor Sokolsky, PhD, DVM; Vladimir Dudka, PhD, DVM. Vasily Melnikov.
Forms of study: Lectures / practical Study volume: EKTS credits -11 (330 hours) Weekly load: Student attendance: required	
Course and semester in which it is planned to study the discipline	1-2 course I, II, III semester
Prerequisites for studying the discipline.	To study the discipline "Animal Anatomy" students must have basic training in zoology and general biology, based on secondary education
Methods of knowledge control	Credit, credit, exam

Learning Outcomes and Competence.	Students must have a deep knowledge and understanding of the development of: - features of the structure of all organs and systems of their functions in domestic animals. be able to: determine the species and topography of individual organs; have dissemination skills.
	Description of the discipline
Knowledge base on the discipline	Auditoriums, prosectories, anatomical museum, training and production center of the university.
Topics of classes	Lecture topics: Module 1. Apparatus of movement Anatomy - the subject and methods of study, patterns of structure of the animal organism. The concept of embryonic leaves and their derivatives. General characteristics of the skeleton, its structure and development. Axial skeleton. Skeleton of the head (skull). Skeleton of the extremities. General characteristics of bone connections, General characteristics of skeletal muscles. Auxiliary muscles. Module 2. Dermatology The skin and its derivatives. Module 3. Splanchnology General characteristics of internal organs. Anatomical composition, patterns of respiratory structure. Anatomical composition of the digestive system. Anatomical composition and functional characteristics of the urinary system. Reproductive organs of males and females. Module 4. Angiology General concepts of the cardiovascular system. Morpho-functional characteristics of the lymphatic system. Morphological characteristics of hematopoietic organs and immune defense. Morphofunctional characteristics of endocrine glands and the concept of humoral regulation of body functions. Module 5. Neurology Anatomical composition and morphofunctional characteristics of the nervous system. Spinal cord. Leading pathways of the central nervous system. Spinal nerves. Brain. Cranial nerves and their morpho functional characteristics. Anatomical composition and morpho functional characteristics of the autonomic nervous system. Sense organs. Classification and characterization of the senses.
	Topics of practical classes: Module 1. Apparatus of movement Content module 1. Osteology Study of the structure and function of the skeleton of animals. Content module 2. Syndesmology. Study of bone connections Content module 3. Myology Study of the structure and function of skeletal muscles Module 2. Dermatology. Study of the structure of the skin and its derivatives. Module 3. Splanchnology Study of the structure and function of internal organs, respiratory system, digestion, excretion and reproduction.

	Module 4. Angiology Study of the structure and function of the cardiovascular system of hematopoiesis, lymphatic system and endocrine glands. Module 5. Neurology Study of the structure and function of the nervous system and sense organs.
Recommended Books:	1. Nomina anatomica veterinaria. International veterinary anatomical nomenclature in Latin, Ukrainian and English / V.T. Khomich, VS Levchuk, LP Goralsky and others. - K .. 2005. - 387 c. 2. Anatomy of domestic animals (Set of codebooks): Textbook / VK Kostyuk, VS Levchuk. - Kyiv: Agrarian Education, 2003.– 182 p. 3. Anatomy of domestic animals. Workshop: Textbook / SK Rudik, VS Levchuk, VT Khomich and others. - Kyiv: Agropromvydav Ukrainy, 2000. - 248 p. 4. Anatomy of domestic animals: Textbook / SK Rudyk, Yu.O. Pavlovsky, BV Kryshtoforova and others; For order. S.K. Rudika. - K .: Agrarian Education, 2001. - 575 p. 5..Anatomy of domestic animals / AIAkaevsky, YF Yudichev, SB Seleznev; under ed. SB Selezneva.- 6th ed., Corrected.- M .: Aquarium - Print, 2009, -638 p.
Language of instruction	Ukrainian

The structure of the discipline by type of occupation

A Lectures	B Seminars	C Independent	D Practical	E Non-clinical	F Clinical	**H**
44	6	140	70	70		330(11 loans)

Name of the university: Bila Tserkva National Agrarian University	
Name of the faculty: Faculty of Veterinary Medicine	
The name of the discipline: CYTOLOGY, HISTOLOGY AND EMBRYOLOGY	
Викладачі	Novak Vitaly Petrovich doctor habilitated DVM; Melnichenko Antonina Petrovna, PhD, DVM; Bevz Olga Sergeevna, PhD, DVM.
Forms of study: Lectures / practical Study volume: EKTS credits -7 (210 hours) Weekly load: Student attendance: required	
Course and semester in which it is planned to study the discipline	1st year 2nd semester and 2nd year 3rd semester
Prerequisites for studying the discipline.	To study the discipline "Cytology, Histology, Embryology" students must have basic training in biology on the basis of general secondary education, biochemistry, biophysics, animal anatomy.

Methods of knowledge control	credit, exam
Learning Outcomes and Competence.	Students should know: - structure and functions of somatic and germ cells, their reproduction; main stages of vertebrate embryogenesis; structural organization of tissues and organs at the microscopic and submicroscopic levels, their functions and genesis; and be able to: - work with a light microscope, have the basic method of making histological specimens; recognize the components of cells on electrograms; to differentiate on histological preparations certain types of cells, tissues, organs and their species features.
	Description of the discipline
Knowledge base on the discipline	Specialized histological classrooms, laboratory of microscopic analysis.
The maximum number of students who can study at the same time Topics of classes	25 students Lecture topics Module 1. Cytology 1. History, subject and methods of histological research, optical devices. General morphofunctional characteristics of cells. 2. Mitotic cell division. Amitosis, endomitosis, meiosis. Module 2. Embryology 3. Ontogenesis and phylogeny. Structure and genesis of mammalian germ cells. Types of eggs. Periods and phases of fertilization. Types of crushing. 4. Development of the lancet. Development of amphibians, fish, birds, mammals. Extraembryonic membranes, placenta. Module 3. General histology 5. Epithelial tissue. Glandular epithelium. 6. Connective tissue. Mesenchyme, reticular, fatty, pigmented, loose tissue. Blood, hematopoiesis. 7. Dense, cartilaginous and bone tissue. 8. Muscle tissue. 9. Nervous tissue. Neurons and neuroglia. 10. Nerve fibers. Receptors, effectors, synapses. Module 4. Special histology 11. The system of skin organs and skin derivatives. 12. Digestive organs. The structure of the tubular organs. Organs of the oral cavity. Salivary glands. 13. Esophagus, single-chamber stomach. Pancreas of ruminants. The structure of the 12 duodenum, small and large intestines. 14. Liver and pancreas. 15. Respiratory organs. Airways and lungs of mammals and birds. Module 5. Special histology

	16. Urinary organs. Kidneys, ultrastructure of the nephron, phases of urination. Juxtaglomerular complex. Urinary tract. 17. Organs of reproduction of males. Indifferent sexual bookmark and sex differentiation. Histostructure histostructure. Adnexa, prostate. 18. Female reproductive organs. Histostructure and hormonal activity of the ovaries; uterus, external genitalia. 19. Endocrinology. The pituitary-hypothalamic system and the connection of the pituitary gland with other endocrine glands. Genesis, structure and humoral activity of the pituitary gland. The pineal gland, thyroid gland, thyroid gland, adrenal glands, their structure and development 20. Cardiovascular system. Histostructure and histogenesis of the heart. Structure and classification of vessels. 21. Organs of immune protection and lymphopoiesis. Red bone marrow, thymus, lymph follicles, nodes, spleen, their organogenesis and histostructure. Module 6. Special histology 22. Nervous system. Meninges. Spinal cord, cortex of large hemispheres, cerebellum. Nerve trunk, perineural vagina, spinal and autonomic ganglia. 23. Aesthesiology. Organs of balance and hearing. Some elements of the eyeball. Laboratory and practical classes Module 1. Cytology. 1. The structure of the microscope. Plant cell. Inclusion of glycogen. 2. Granular endoplasmic reticulum, Golgi complex. 3. Mitosis, amitosis Module 2. Embryology 4. Ram sperm, mammalian egg. 5. The main stages of vertebrate embryogenesis. Placenta. Module 3. General histology. 6. Epithelial tissue. Single-layer prismatic and flat, multilayered non-keratinized epithelium. 7. Reticular, loose and dense connective tissue. 8. Blood of mammals and birds. 9. Hyaline, elastic cartilage, fibrous cartilage. 10. Transverse and longitudinal sections of the compact substance of the tubular bone. Enchondral bone development. 11. Muscle tissue: smooth and striated. 12. Nervous tissue: multipolar neurons, myelin fibers, encapsulated receptors (Fater-Pacini bodies). Modular control 4. Special histology. 13. Skin without hair and with hair. 14. Breast during lactation and dryness, hoof wall. 15. Tongue, taste bud, tooth development. 16. Esophagus, bottom of the stomach, glandular stomach of birds 17. Scar, grid, book. 18. Duodenum, empty, large intestine. 19. Parotid and sublingual salivary glands. 20. Liver of pig and horse, pancreas.

	21. Trachea, lungs of mammals and birds. 22. Module 4. Special histology Module 5. Special histology 23. Mammalian kidney, bladder, urethra. 24. Testis, ovary, uterus 25. Pituitary, thyroid and adrenal glands. 26. Myocardium, capillary network, artery and vein. 27. Thymus, lymph node, spleen. Module 6. Special histology 28. Spinal cord, cortex of large hemispheres, cerebellar cortex. 29. Spinal and autonomic ganglia, nerve trunk 30. Retina and Corti's organ Modular control 6.
Language of instruction	Ukrainian, English
Recommended Books	1. Novak VP, Bychkov Yu.P., Pilipenko M.Yu. Cytology, histology, embryology: Textbook. - Kyiv, 2008 2. R. Jennings, C. PremanandanVeterinary Histology. - 2018. - p. 233. 3. Novak VP, Melnichenko AP Cytology, histology, embryology: Textbook. - Bila Tserkva, 2005. - 256p. 4. Novak VP, Pilipenko M.Yu., Bichkov Yu.P. Cytology, histology, embryology. - K .: Bipa-P, 2001. - 288c 5. В.П. Novak, M.Yu. Пилипенко, Ю.П. Бичков. "Cytology, histology, embryology" Textbook, 2001. 6. Novak VP, Melnichenko AP, Bevz OS Workshop on special histology from the course "Cytology, histology and embryology" for full-time students in the credit-modular system of organization of the educational process / V.P. Novak, A.P. Melnichenko. O.S. Bevz. - Bila Tserkva, 2013. - 87p.

Структура дисципліни за видами занять

A Lectures	B Seminars	C Independent	D Practical	E Non-clinical	F Clinical	**H**
46	6	104	30	30		210 год. (7 кредитів)
Date of the last modification of the program		**28.08.2019 р.**				

Bila Tserkva National Agrarian University	
Faculty of Veterinary Medicine	
Subject	**ANIMAL PHYSIOLOGY**
Teachers	Alla Emelyanenko Candidate of Veterinary Sciences, Ass/ Prfofessor, PhD

	Lyudmyla Stovbetska Candidate of Veterinary Sciences, Ass/ Prfofessor, PhD
Teaching form: lection/practicals **Teaching load: credits EKTS** – 3 (90 hr.); **Weekly workload:** 3rd semester - 3 (1/2); 4th semester - 2 (1/1)Subject characteristics: Full time teaching Lection - 44 Practical training - 88 Self-study - 78 год. Teaching method: stationary **Weekly load:** **Students presence:** obligatory	
Year and semester of study	2nd year, 3rd - 4th semester
Previous conditions	"Animal Anatomy", "Cytology, Histology, Embryology", “Biochemistry”, “Zoology”, “Physics”, “Chemistry”
Control methods	Credit, performance of individual tasks and writing protocols of practical classes, exam
Conditions for taking the course:	Attendance according to the rules of study, substantiation of protocols of practical works, performance of individual tasks, successful passing of modules and final test.
Study results and competences	Students gain knowledge of the mechanisms of development of typical physiological processes, analyze, draw conclusions about the mechanisms of functioning of organs and systems of the body, which will provide fundamental training and acquisition of practical skills for future professional activities. Students must know and be able to: Knowledge: - patterns of physiological processes and mechanisms of regulation of functions in different organs and organ systems in healthy different species of domestic and other species of animals; - the influence of various internal and external factors on the course of physiological processes and mechanisms of their regulation in healthy animals of different species; - methods of studying the main functions of various organs and organ systems in domestic and other species of animals; -methods of research of morphofunctional indicators of blood, pulse rate, respiration, body temperature, composition of urine, milk and colostrum, gastric juice and bile, the study of which has practical use in the practice of veterinary medicine; - analysis of changes in the physiological norms of homeostasis of blood, urine, milk and colostrum, the composition of the main digestive juices, heart rate, respiration, body temperature; - results of biochemical blood tests - indicators of metabolism of proteins, fats, carbohydrates, minerals; - results of electrocardiography. ***Skill:*** -evaluate the course of physiological processes and mechanisms of their regulation in various organs and organ systems of clinically healthy animals;

	- assess the impact of animal species, age, sex, productivity level, physiological condition and time of year, time of day, ambient temperature, physical activity, proper feeding, animal nutrient and mineral supply, etc. on the course of physiological processes; - have methods of studying the basic functions of different organs and organ systems in different species of animals; - have methods of studying morpho-functional indicators of blood (number of erythrocytes, leukocytes, platelets, leukogram, ESR, color index, hemoglobin protein content in blood plasma, blood pH), determination of pulse rate, respiration, body temperature, urine composition, milk, colostrum, gastric juice and bile, determination of motor activity of the digestive tract; - analyze and compare the results of laboratory and functional studies with the limits of the physiological norm, which are inherent in different species of animals; - have the basic methods of determining indicators that characterize the metabolism of proteins, lipids, carbohydrates, minerals; - have the basic devices used in electrocardiography.
The summary of the course:	Physiology of the blood system. Physiology of the cardiovascular system. Physiology of excitable tissues and central nervous system. Physiology of higher nervous activity and analyzers. Physiology of the digestive system. Physiology of the respiratory and excretory systems. Physiology of endocrine regulation. Physiology of reproduction and lactation. Physiology of metabolism and energy.
Description of the subject	
Placing of teaching	Auditoriums, vivarium of NDC BNAU, interdepartmental laboratory
Audience study	**Lecture topics:** 1. Introduction. The doctrine of the blood system. 2. Shaped elements of blood and their functions. 3. Physiology of the cardiovascular system. 4. Functional characteristics of blood vessels. 5. Physiology of excitable tissues. 6. Physiology of the central nervous system. 7. General ideas about higher and lower nervous activity. 8. Physiological basis of behavior. 9. General properties of analyzers. Physiology of analyzers of sight, hearing. 10. Physiology of taste, smell and skin analyzers. 11. Physiology of the digestive system. The essence of the digestive process. 12. Digestion in the stomach. 13. Digestion processes in the multichambered stomach of ruminants. 14. Membrane digestion. Digestion in the intestines. 15. Physiology of the respiratory system. The essence of the respiratory process and its mechanism.

	16. Physiology of excretion processes and its significance for the body. Physiology of the kidneys and skin. 17. Physiology of endocrine regulation. 18. Physiology of endocrine glands. 19. Physiology of reproduction and lactation. Sexual and physiological maturity of females and males. 20. Physiology of animal reproductive organs. 21. Physiology of metabolism. 22. Physiology of thermoregulation.
	Topics of practical classes and independent classes: 1. Instruction. Acquaintance with methods of physiological researches. 2..Relation and interrelation of blood components. 3. Hemolysis and osmotic resistance of erythrocytes. 4. Physiological significance of erythrocytes in the blood of animals. 5. Physiological significance of leukocytes in the blood of animals. 6. Differentiation of blood cells of different species of animals and birds. 7. Physiological significance of hemoglobin in the blood of animals and birds. 8. Blood groups. 9. Physiological properties of the heart muscle. 10. Mechanisms of regulation of heart activity. 11. The role of the pumping function of the heart. 12. Dynamics of cardiac excitation. Registration and analysis of the electrocardiogram 13. Physiological patterns of hemodynamics. 14. Regulation of blood circulation. 15. Physiology of excitable tissues and central nervous system 16. The mechanism of skeletal muscle contraction 17. Work and theories of skeletal muscle fatigue 18. Bioelectrical phenomena in living tissues 19. Reflexes of the spinal cord 20. Properties of nerve centers. Nervous regulation of muscle tone. 21. The role of the brain in the regulation of body functions 22. Mechanisms of influence of the autonomic nervous system on the activity of the organism. 23. Complex reflex activity of the nervous system 24. Physiological bases of behavior 25. Visual sensory system 26. Auditory sensory system 27. Somato-sensory system. 28. The mechanism of salivation. Enzymatic properties of saliva. 29. The mechanism of secretion of gastric juice. Enzymatic activity of gastric juice. 30. The role of bile and pancreatic juice in digestive processes. 31. Motor activity of the digestive tract.

	32. Digestive processes in the multichambered stomach of animals. 33. The mechanism of respiratory movements 34. Lung volumes and capacities. 35. The mechanism of urine formation. 36. The role of the hypothalamic-pituitary system in the regulation of physiological functions. 37. Endocrine function of the pancreas. 38. Physiological role of hormones in the regulation of homeostasis. 39. Mechanisms of regulation of sexual functions in animals. 40. Sexual reflexes and behavior of animals. 41. Regulation of milk production. 42. Mechanisms of thermoregulation. 43. Regulation of metabolic rate.
Recommended literature:	Mazurkevich AY, Karpovsky VI, Kambur MD etc. Animal physiology. - Vinnytsia, New book, 2010 A textbook for practical work on animal physiology for students of the Faculty of Veterinary Medicine / AA Emelyanenko, O.A. Poroshynska, MP Nischemenko, VI Koziy, LS Stovbetska, SS Shmayun - Bila Tserkva. 2019.– 132 p. Naumenko VV, Dyachynsky AS, Demchenko VY, Derevyanko ID Physiology of farm animals. - K .: Publishing house "Agricultural Education". 1994.– 508 p.Reece WO, Erickson HH, Goff JP, Uemura EE, eds. Dukes' physiology of domestic animals. 13th ed. Ames, IA: Wiley Blackwell; 2015. Klein BG, Klein BG, eds. Cunningham's textbook of veterinary physiology. 5th ed. St. Louis, MO: Elsevier Saunders; 2013.
Language	Ukrainian

Course evaluation:
The number of students: 100

A	B	C	D	E	FX
30,0	40,0	20,0	10,0	0,0	0,0

The structure of the subject

A lections	B seminars	C self-study	D laboratory	E Nonclinical (no live animals)	F Clinical (with live animals)	G ot
44	10	78	48	30		

Last modification data	28.08.2019

The university: Bila Tserkva National Agrarian University	
The faculty: Faculty of Veterinary Medicine	
Subjects	**VETERINARY MICROBIOLOGY AND IMMUNOLOGY**
Teachers	Iryna Rublenko, doctor habilitated, DVM (guarantor); Andriy Andriychuk, PhD, DVM; Vladimir Zotsenko, PhD, DVM, Svetlana Taranukha, master, DVM; Denis Ostrovsky, master, DVM.
Forms of study: Lectures / practical	

Volume of study load: 3, 4 semester ECTS, 8 credits – (240 hours); 5 semester – 8 credits (120 hours); Weekly workload: 3, 4 semester ECTS, 8 credits – 5 (2/3); 5 semester – 4 (1/3); Student presence: obligatory	
Course and semester in which the subject is planned to be studied	2 th year,3,4 th semesters; 3 th year, 5 th semester
Prerequisites for studying the discipline	“Zoology”, “Animal Anatomy”, “Cytology, Histology, Embryology”, “Animal Physiology”, “Cell Genetics and Molecular Biology”, “Animal Physiology”,
Methods of knowledge control	Test
Conditions for taking the course	Pregnant students may not attend this course
Learning outcomes and competencies	**The result of teaching the discipline is that students receive the following knowledge and skills:** **Knowledge:** the spread of microorganisms, viruses, fungi, prions in nature, their role in the circulation of substances, the impact on animal life, products and raw materials of animal origin; pathogens of infectious diseases, their physical and chemical characteristics, methods of research of bacteria, fungi, viruses, mechanisms of detection and identification, development and completion of infectious diseases, methods of prevention and control of infectious diseases of animals; the importance of laboratory and clinical studies, the development of immunity and resistance to infections; basics of vaccinology and prevention, mechanisms and their application, principles of laboratory diagnosis of animal diseases. **Skills**: preparation of a bacterial smear for staining in microbiological research, methods of culture, inoculation, streaking and culture of different specimens, carry out indication and identification of microorganisms in clinical and pathological material, objects of environment; to carry out diagnostics of diseases using bacteriological, immunological and virological methods, to interpret and generalize diagnostic tests, results of the received researches with carrying out of preventive and medical actions, programs of immunoprophylaxis and health care; use of algorithms of classical and molecular diagnostics of infectious diseases, acquisition of practical skills of determination of antibiotic sensitivity and antibiotic resistance, ability to form and analyze risks of biological nature, to have principles of biosafety, biosecurity, including in laboratories.
Description of the subjects	

The base of the discipline	Auditorium and laboratory of the department, The laboratory of the State Food Service of Consumers of Ukraine.
Topics of classroom lessons	**Lecture topics:** Subject and tasks of microbiology. History of microbiology development. Systematics and morphology, structure, physiology of bacteria and fungi. Growth, reproduction and respiration, ecology of microorganisms. Microflora of milk, meat, feed and manure. The role of microorganisms in the transformation of substances in nature. Influence of environmental factors on microorganisms. Genetics of microorganisms. The doctrine of infection. Virulence factors. Antibiotics. Mechanisms of formation of antibiotic resistance in microorganisms, methods of its determination and monitoring program in accordance with international and European legislation. **Immunology.** Antigens and antibodies. Structural and functional characteristics. Definition of "antigen". Antigenicity, specificity and immunogenicity of antigens. Epitopes. Classification of antigens. Adjuvants. The specificity of the reaction antigen - antibody. Stages of the immune response. Dynamics of antibody formation and factors influencing antibody genesis. Genetics of immunoglobulins. Antigenic markers. Monoclonal antibodies. Anti-infective, protective immunity. Features of immunity at bacterial, viral, fungal, parasitic infections. Cytokines. **Special microbiology.** Pathogens of coccal diseases. Staphylococcus. The causative agent of anthrax. Pathogenic spirals and spirochetes, rickettsiae and chlamydia. Pathogens of mycoses, toxic fungi. Prions**.** **General and special virology.** The nature of viruses. Origin, morphology and chemical composition, physical structure, classification of viruses. Taxonomic characteristics. Cryptogram. Reproduction, genetics of viruses. Structural organization of the viral genome. Hereditary variability. Genetic and non-genetic interactions of viruses. Pathogenesis of viral infections. Classification of viral infections. Cytopathology of viral infections. Special virology. Ecology of viruses. The mechanism of occurrence and spread of viral infections. Influence of anthropogenic factors on the ecology of viruses. Immunopathology of viral infections. Specific prevention and chemotherapy of viral infections. Types of viral vaccines and their characteristics. Problems of chemotherapy of viral infections. General principles of laboratory diagnosis of viral diseases, virus isolation on sensitive test objects. Serological reactions and their use in laboratory diagnosis. Family of adenoviruses. Cattle adenoviruses. Infectious hepatitis virus in dogs. Egg-laying syndrome virus. Herpevirus family. Cattle infectious rhinotracheitis virus. Aujeszky's disease virus. Infectious laryngotracheitis virus of birds. **Topics of practical classes:** Bacteriological laboratory. Safety precautions. Immersion system of a light microscope. Morphology of bacteria. Production of smear preparations, imprint preparations from cultures of microorganisms and test material. Bacterial motility Dark field and phase contrast microscopy. Morphology of fungi and actinomycetes. Basic methods of sterilization and sterilizing equipment. Preparation of nutrient media. Technique of sowing from material and reseeding of cultures of microorganisms. Methods of isolation of pure cultures of microorganisms. Study of cultural and biochemical properties. Definition of the species. Bacteriophages. Antibiotics. Methods for determining the sensitivity of microorganisms to antibiotics. Determination of pathogenicity of microorganisms. Methods of infection and rules of dissection of laboratory animals. **Immunology**. Collection of immunological anamnesis, characteristics of the main immunopathological syndromes. Basic tests of laboratory immunodiagnostics. First and second level test. Obtaining corpuscular and soluble antigens. Preparation of

	components, strains of microorganisms, preparation, control of quantitative content of antigens in suspension, preservation. Sedimentary serological reactions. Agglutination reaction. Precipitation reaction. Complement fixation test. **Special microbiology** (microbiology of infectious diseases): laboratory diagnosis of avian streptococcus, mastitis, Escherichia coli and salmonellosis, Proteus, Listeriosis, erysipelas, pasteurellosis, zooanthroponotic plague, anaerobic enterotoxemia, lamb dysentery, emphysematous carbuncle, paratubobacteriosis, necrobacteriosis Cattle and sheep. Pathogenic fungi and laboratory diagnosis of mycoses, microspores, favus, actinomycosis, candidiasis, aspergillosis. Toxigenic fungi and laboratory diagnosis of mycotoxicosis, fusariotoxicosis, dendrodochiotoxicosis. **General virology.** Organization and equipment of virological laboratories. Rules for working with virus-containing material. Safety precautions. Selection of pathological material from animals for laboratory diagnosis of viral infections. Preparation of material for research. Detection of virions and intracellular inclusion bodies. Dyeing. Electron and immunoelectron microscopy. Indication of viruses Technique of infection of chicken embryos. Cultivation of viruses in cell culture. Titration of viruses by infectious activity. Titration of viruses by agglutination activity. Viruses that cause diseases of several species of animals: influenza, rabies, Aujeszky's disease, smallpox in animals and birds, foot and mouth disease. Cattle: parainfluenza. Cattle: parainfluenza, plague, infectious rhinotracheitis, adenoviruses and diarrhea, infectious gastroenteritis; contagious ecthyma of sheep and goats, catarrhal fever of sheep; pigs: classical and African plague, Tashen's disease; equine rhinopneumonia and infectious equine gastroenteritis. Carnivorous plague, infectious hepatitis of dogs, myxomatosis of rabbits, hemorrhagic disease of rabbits. Bird: Newcastle disease, infectious laryngotracheitis, Marek's disease, infectious bursal disease.
recommended literature:	1. Рубленко, І. О., Андрійчук, А. В., Зоценко, В. М., Тарануха, С. І., Островський, Д. М. Ветеринарна мікробіологія. Методичні рекомендації для *самостійного вивчення тем* з курсу "Ветеринарна мікробіологія з основами вірусології". – 2019, Біла Церква. – 45 с. 2. Зоценко В.М., Рубленко І.О., Білан А.В. та ін. Ветеринарна мікробіологія: посібник. – Біла Церква, 2017 – 184 с. 3. Бортнічук В.А., Скибіцький В.Г., Ібатулліна Ф.Ж. Практикум з ветеринарної мікробіології Вінниця, 2007. – 240 с. 4. Рубленко І.О. Чутливість мікроорганізмів до антибіотиків /Sensitivityofmicroorganismstoantibiotics/ Науково-методичні рекомендації для забезпечення практичної та самостійної роботи фахівців лабораторій та науково-дослідних установ ветеринарної медицини, викладачів та студентів факультетів ветеринарної медицини ВНЗ / І.О. Рубленко, A.Leblon,C.Prouillac, Z.Djelouadji. В.С. Шаганенко, Р.В.Підборська // Біла Церква, WorldOrganisationforAnimalHealth (OIE), VetAgroSup. – 2017. – 48с. 5. RachelWatson. General Microbiology by Rachel Watson http://www.freebookcentre.net/medical_text_books_journals/microbiology_ebooks_online_texts_download_1.html. 6. Md. AkramHosssain. Introduction&HistoryofMicrobiology. 2013. – p. 96. http://www.mmc.gov.bd/downloadable%20file/Introduction&%20history%20of%20microbiology%20for%20fb.pdf.

	7. David M. Rollins, D.M. Rollinsand S.W. JosephPathogenicmicrobiology. https://science.umd.edu/classroom/bsci424/Lectures/LectureSummaryList.htm. 8. Richard H. Gustafson. Antibiotics Use in Agriculture: An Overview. Moats; Agricultural Uses of Antibiotics ACS Symposium Series; American Chemical Society: Washington, 1986. https://pubs.acs.org/doi/pdf/10.1021/bk-1986-0320.ch001. 9. Інфекційні хвороби в клінічній практиці. 2013. https://www.ucsfcme.com/2013/slides/MDM13K01/MDM13K01Infectious_Disease_Syllabus.pdf
Language	Ukrainian

The structure of the subject

A lectures	B seminars	C independent	D laboratory	E non-clinical with animals, models	F clinical with animals	G other	H together
72	**20**	**156**	**76**	**36**	**0**	**0**	**360**

Date of the last modification of the curriculum	Developed for the first time for 2020-2021 academic year.

Name of the university: Bila Tserkva National Agrarian University	
Name of the faculty: Faculty of Veterinary Medicine	
Subject	**PATHOLOGICAL PHYSIOLOGY OF ANIMALS**
Teachers	Serhiy Shmayun, PhD, DVM (guarantor), Oksana Poroshynska, PhD
Forms of study: Lectures / practical **Volume training loading: creditsEKTS-7 (210 hours).** **Weekly workloading: 5th semester - 2 (1/1); 6th semester - 5 (1/4).** **Student attendance: required**	
Course and semester in which the discipline is planned to be studied	2–3 year, 5–6 semester
Prerequisites for studying the discipline	“Animal Anatomy”, “Cytology, Histology, Embryology”, “Animal Physiology”, “Biochemistry”, “Zoology”, “Physics”, “Chemistry”
Methods of knowledge control	Tests, performance of individual tasks and writing of protocols of practical classes, exam
Learning outcomes and competencies	Students must know and be able to: Knowledge: - main typical pathological processes, their etiology, mechanisms of development and completion; - mechanisms of adaptation and compensation for pathological processes and injuries;

	- main and secondary mechanisms of development of this or that pathological phenomenon and its main manifestations; - understanding and explanation of pathophysiological disorders of individual organs and systems of the body, their mechanisms of development. Skills: - to analyze causal disorders, pathological and adaptive-compensatory reactions, to find the leading link of pathogenesis; - apply the necessary methods for modeling and analysis of typical pathological processes; - solve computational and situational problems, analyze data of clinical situations; - - have the skills to make a preliminary diagnosis based on the results of biochemical studies of biological fluids of the animal;
Description of the discipline	
The base of the discipline	Classrooms, educational and scientific laboratory of the department, interdepartmental clinics, vivarium and farms of the research farm of the university.
Topics of classroom lessons	1. General etiology. 2. General nosology. 3. General pathogenesis. 4. Reactivity of the organism and its importance in pathology. 5. Immunological reactivity. Allergy. 6. Local circulatory disorders. 7. Inflammation. 8. Pathological processes in tissues. 9. Pathophysiology of thermoregulation. 11. Violation of acid-base balance and water-electrolyte metabolism. 12. Metabolic disorders. 13. Pathophysiology of blood. 14. Pathophysiology of systemic circulation. 15. Pathophysiology of the digestive system. 16. Pathophysiology of the respiratory system. 17. Pathophysiology of the excretory system. 18. Disorders of motor and sensory function of the nervous system. 19. Hypo- and hyperfunction of endocrine glands. 20. Types of disorders of the reproductive and lactation systems.
Recommended literature:	Навчальний посібник для практичних робіт з патологічної фізіології тварин для студентів факультету ветеринарної медицини / О.А. Порошинська, С.С. Шмаюн, В.І. Козій, М.П. Ніщеменко, Л.С. Стовбецька, А.А. Ємельяненко. – Біла Церква, 2019. – 119 с. Мазуркевич А.Й., Тарасевич В.Л., Данілов В.Б., Малюк М.О., Карповський В.І., Ковпак В.В. Патофізіологія тварин: підручник. – К. : Агроосвіта, 2013. – 414с. Атаман О.В. Патологічна фізіологія в запитаннях і відповідях – Вінниця: «Нова книга», 2007. – 512 с. Vegad J. L. A Textbook ofVeterinary GeneralPathology// J. L. Vegad– International Book Distributing, 2008 – 487 p.

	Vegad J. L. A Textbook ofVeterinary SystemicPathologySecond Revised and Enlarged Edition //J. L. Vegad–Madhu Swamy Ibdc publishers, 2010 – 563 p.
Language of teaching	Ukrainian

Структура дисципліни за видами занять

A lectures	B seminars	C Self-education	D laboratory	E non-clinical with animals, models	F Clinical with animals	G other	H total
30	10	108	42	20			210

Date of the last modification of the program	28.08.2019 p.

Name of the university: Bila Tserkva National Agrarian University	
Name of the faculty: Faculty of Veterinary Medicine	
Subject	**ANESTHESIOLOGY AND OPERATIVE SURGERY**
Teachers	
Forms of study: Lectures / practical **Volume of study loading:** EKTS credits - 6 (180 hours); **Weekly loading:** 6 hours **Student attendance:** required	
Course and semester in which the discipline is planned to be studied	3d year, 5-6 semester
Prerequisites for studying the discipline	"Animal Anatomy", "Cytology, Histology, Embryology", "Animal Physiology", "Pathological Physiology", "Veterinary Microbiology", "Propaedeutics and Diagnostic Imaging", "Pharmacology and Pharmacotherapy"
Methods of knowledge control	test, exam
Learning outcomes and competencies	Students should have basic knowledge and skills in general and local anesthesia, animal fixation, bandaging, tissue and injection, typical surgery on individual body parts and organs, taking into account their topographic and anatomical features, based on on the principles and procedures of bioethics and biosafety, asepsis and antiseptics.
Description of the discipline	
The base of the discipline	Classrooms, Museum of Surgical Pathology and Phantom Class, Interdepartmental Clinics and Farms of the University's Research Farm, Public and Private Clinics for Companion Animals, Farm Farms
Topics of classroom lessons	**Lectures** - General issues of operative surgery and topographic anatomy (the concept of surgery, classification of bleeding and their consequences, methods of prevention and

	cessation of bleeding) - Anesthesiology (pain physiology and specific features of pain response mechanisms, general anesthesia and monitoring of anesthetized animals, local anesthesia) - Topographic anatomy, operations and their anesthesia in the head, neck, chest and abdomen (introduction of a calming ring for bulls, rhinoplasty, trepanation of the walls of the paranasal sinuses, decontamination of ruminants; laparotomy and laparocentesis, puncture of the scar, rumochi, books, books) and abomazopexy in cattle, perforation of the cecum and colon in horses; structure and classification of hernias, surgery for umbilical, intravaginal and lateral abdominal wall hernias) - Topographic anatomy, operations and their anesthesia on the genitourinary organs (characteristics of castration methods, technique of castration of different species of males and females, post-castration complications; resection of the persistent bridle of the penis in a bull, resection of the preputial sac for phimosis, prolapse in a bull paraphimosis in the horse, extirpation of tumors on the penis in the bull, surgery in case of rupture of the protein shell of the penis in the bull, amputation of the penis in the horse, urethrotomy and urethrostomy in males, cystocentesis and cytotomy) - Topographic anatomy, operations and their anesthesia in the pelvis and extremities (repositioning and resection of the rectum, operations for anomalies of the anus and rectum, tail amputation; extirpation of the subcutaneous elbow, precarpal and heel bursa, tenotomy and resection of the tendon of the deep flexor digitorum longus of the finger, horse) cattle)
	Practical training - Basic techniques on the principles of bioethics and biosafety in surgery (animal fixation techniques, surgical instruments and equipment, prevention of surgical infection (disinfection of premises and equipment, surgeon's hands, operating field, instruments, sutures, dressings, surgical underwear and shoes), technique of injection of medicines, connection of fabrics (principles of connection, tools and suture material, classification of seams, technique of imposing of the general and intestinal seams and performance of intestinal anastomoses), desmurgia (dressing material, classification and the characteristic of different types of floors). , technique of applying different types of bandages and immobilizing bandages) - Anesthesiology (methods of monitoring the course of anesthesia and the function of vital organs of anesthetized animals, techniques for performing various types of local anesthesia, techniques for performing novocaine blockades) - Topographic anatomy, operations and their anesthesia in the head, neck, chest and abdomen (technique of conducting conduction anesthesia and individual operations; technique of jugular vein resection, tracheotomy, esophagotomy; technique of conducting conduction anesthesia of abdominal nerve nerves

	and individual operations; technique herniotomy for umbilical and intravaginal hernias) - topographic anatomy, operations and their anesthesia on the urogenital organs (technique of castration of different species of males and females; techniques of conduction anesthesia of the penis and individual operations; technique of conduction anesthesia of the perineum and individual operations) - topographic anatomy, operations and their anesthesia in the areas of the pelvis and extremities (operations on the rectum and anus, on the tail (technique of performing individual operations; technique of conducting conduction anesthesia of the nerves of the extremities in horses and cattle and individual operations)
Recommended Books:	1. Власенко В.М. Оперативна хірургія, анестезіологія і топографічна анатомія (загальна частина) / В.М. Власенко, Л.А. Тихонюк, М.В. Рубленко. – Біла Церква: БДАУ, 2003. – 512 с. 2. Власенко В.М. Оперативна хірургія, анестезіологія і топографічна анатомія (спеціальна частина) / В.М. Власенко, Л.А. Тихонюк, М.В. Рубленко. – Біла Церква: БДАУ, 2006. – 543 с. 3. Анестезія та добробут тварин / К. Портьє (VetAgro Sup), С.В. Рубленко, В.Г. Андрієць, М.В. Рубленко, М.Г. Ільніцький, В.М. Власенко. – Біла Церква, 2020. – 54 с. 4. Hendrickson A. Dean. Turner and Mcilwraith's techniques in large animal surgery / Dean A. Hendrickson, A. N. Baird. – 4th ed., 2013. – 352 p. 5. Duncanso G.R. Farm animal medicine and surgery: for small animal veterinarians / G.R. Duncanso. – MPG Printgroup Ltd, 2013. – 282 p.
Language of teaching	Ukrainian

The structure of the discipline by type of occupation

Subject	A	B	C	D	E	F	G
28	10	92	-	34	16	-	180 6 credits

Date of the last modification of the program	17.06.2020 p.

Name of the university: Bila Tserkva National Agrarian University	
Name of the faculty: Faculty of Veterinary Medicine	
Subjects	**PHARMACOLOGY AND PHARMACOTHERAPY**
Teachers	Rublenko Serhiy Vasyliovych Doctor of Veterinary Sciences, Professor of the Department of Parasitology and Pharmacology Avramenko Natalia Vladimirovna, Koziy Natalia Vladimirovna, Shaganenko Raisa Vladimirovna Candidates of Veterinary Sciences, Associate Professors of the Department of Parasitology and Pharmacology

Forms of study: Lectures / practical **Volume of study load: EKTS credits - 8 (240 hours);** **Weekly load:** **Student attendance: required**	
Course and semester in which the discipline is planned to be studied	3M course, 5 and 6 semesters
Prerequisites for studying the discipline	Anatomy", "Chemistry", "Biochemistry", studied in the 1st year, and "Physiology", "Microbiology", "Pathophysiology", studied in the 2nd semester of the second year and the first semester of the 3rd year.
Methods of knowledge control	Test, exam
Learning outcomes and competencies	Learning outcomes defined by the Standard of Higher Education of Ukraine for the specialty 211 "Veterinary Medicine": PH7, PH10, PH15.
List of competencies and relevant learning outcomes provided by the discipline	Students must know and be able to: Knowledge: -names of drugs in Ukrainian and Latin, the most commonly used synonyms, origin, chemical structure and composition of dosage forms, physical and chemical properties of substances related to storage and use; -ways of introduction into an organism and features of absorption, biotransformation and allocation from an organism of separate dosage forms; -mechanism of local, reflex and resorptive action of drugs on the body of animals of different species, on pathogens of parasitic and infectious diseases; - rules for the use of antibiotics, taking into account the antibiotic resistance of microorganisms and the withdrawal period of drugs; -indications and contraindications to use; -oriented therapeutic doses for animals of different species; -treatment of animals in case of poisoning in case of overdose. Skill: - proper use of basic veterinary chemotherapeutic drugs and antibiotics; - understanding the concept of cadence time after the use of antibiotics to prevent the presence of residues in products of animal origin, the mechanisms that lead to the development of antibiotic resistance in pathogens; - - possession of legal norms for storage, circulation and utilization of medicines, methodological principles of choice of medicines in the ratio of risk / effectiveness
Description of the discipline	
The base of the discipline	Audiences. Interdepartmental clinics and farms of the research farm of the university. Pharmacy of the clinic and open pharmacy of Bila Tserkva, farms and agricultural enterprises.

Topics of classroom classes	**Lecture topics**: 1. Subject "Pharmacology and pharmacotherapy", its content and objectives. Components, history of development and tasks of pharmacology at the present stage of development. 2. Ways of drug administration. 3. Types of action of drugs 4. The dose of drugs and its variety. Dependence of action of medicinal substances on various factors. 5. General and comparative characteristics of the action of substances that act on the central nervous system. Inhalation and non-inhalation drugs. Hypnotics. Alcohol, against convulsions 6. Psychotropic drugs of suppressive type of action. Neuroleptics, tranquilizers and sedatives. 7. Narcotic and non-narcotic analgesics. Features of action of antipyretic substances. 8. Substances that excite C.N.S. 9. General characteristics and classification of substances acting on the efferent nervous system. M- and H-cholinergic drugs 10. Adrenergic substances. Sympatholytics. H-cholinergic substances. Drugs of the group of ganglionic and muscle relaxants. 11. Classification and general characteristics of substances that inhibit CNR. 12. Substances that excite the afferent nervous system 13. Chemotherapy. General characteristics, history of development, principles and classification of chemotherapeutic substances. Organic dyes. Arsenic preparations. Nitrofurans. 14. Antibiotic resistance. Research and monitoring of resistance of microorganisms to chemotherapeutic substances. Sulfanilamide drugs. Derivatives of oxyquinoline, imidazole 15. General characteristics, sources and classification of antibiotics. Antibiotics of the β-lactam group. Methods of prevention of antibiotic resistance. 16. Antibiotics aminoglycosides, tetracyclines and other groups. Their use and complex antibiotics. Withdrawal period and methods of its control. 17. Anthelmintics. Coccidiostats. General characteristics, features of individual and group application 18. General characteristics and classification of antiseptic and disinfectants. Heavy metals. 19. Preparations of the phenol and cresol group. Direct oxidants and formaldehyde. Preparations of the group of iodine, chlorine, sulfur, acids, alkalis. Honey. 20. Characteristics of drugs that change the state of CCC and blood. Cardiac glycosides. Coagulants, anticoagulants, antispasmodics, antihistamines, blood and plasma substitutes. 21. Preparations of alkali and alkaline earth metals. Rehydration drugs. 22. General characteristics, classification of substances that affect metabolism. Vitamin, hormonal and enzyme preparations.

	Topics of laboratory classes: 1. General recipe. Nomenclature of substances. Prescription, its structure, rules of writing, recipes. 2. Pharmacy, incompatibility of drugs. Dosage. sterilization of drugs. 3. Solid bulk dosage forms 4. Solid compressed dosage forms 5 Dense dosage forms 6. Ointments, pastes, liniments, plasters. Tests on hard and soft dosage forms. 7. Solutions for external and internal administration 8. Solutions for injections and antibiotics. Dose calculation. 9. Other liquid dosage forms. 10. Tests on liquid dosage forms. Test work on the recipe. 11. General pharmacology. 12. Final lesson on general pharmacology and formulation. 13. Narcotic substances. 14. Alcohols, hypnotics, anticonvulsants. Psychosedative .. 15. Analgesics. 16. Substances that excite the central nervous system. 17. Final lesson on substances acting on C.N.S. 18. Substances that affect the autonomic nervous system. Cholinergic drugs. 19. Adrenergic and ganglionic substances. 20. Final lesson on vegetotropic substances. 21. Local anesthetics. 22. Drugs that protect the receptors of the sensitive nervous system 23. Substances that excite the afferent emergency. 24. Final lesson on substances acting on the afferent emergency. 25. Antimicrobial and antiparasitic substances. Organic paints, nitrofurans. 26. Sulfanilamide preparations, oxyquinoline and imidazole derivatives. 27. Modern principles of antibiotic therapy and antibiotic resistance. Antibiotics of the β-lactam group. 28. Antibiotics, aminoglycosides and drugs for local action. 29. Antibiotics of the tetracycline group, chloramphenicol, macrolides, and other groups. Prescription and justification for their use. 30. Withdrawal of antibiotics and control of their residues in livestock products. 31. Anthelmintic, antiprotozoal drugs and coccidiostats. 32. Study of mechanisms of resistance to chemotherapeutic substances. Comparison of principles and legally established requirements for their storage, sale and disposal. 33. Final lesson on chemotherapeutic agents. 34. Preparations of heavy metal salts. 35. Formaldehyde group and their derivatives. Phenols and cresols. 36. Oxidizers. Preparations of iodine, chlorine, sulfur. 37. Final lesson on antimicrobial drugs.

	38. Cardiotonic drugs. 39. Coagulants and anticoagulants. Proteolytic and antihistamines. Blood products, Glucose. Antispasmodics. 40. Preparations of salts of alkali and alkaline earth metals. Rehydration products. 41. Final lesson. on substances acting on the CCC and blood. 42. Water- and fat-soluble vitamin preparations. 43. Hormones and hormonal drugs. 44. Enzyme preparations and biogenic stimulants. 45. Final lesson on substances that affect metabolism.
Recommended Books	1. Khmelnytsky G.O., Dukhnitsky V.B. . Veterinary pharmacology. – Kyiv, 2017. – 571 p. 2. Veterinary Pharmacology and Therapeutics, 10th Edition / Editod by Jim E. Riviere , Mark G. Papich. – 2017, Wiley-Blackwell. - 1552 p. 3. Handbook of Veterinary Pharmacology / by Hsu, Walter H. – 2008. – 564 p. 4. Modern course of veterinary medicine Kirk / trans. with eng. - M .: LLC "Aquarium Print", 2005. - 1376 p. 5. Veterinary drugs. Directory. / Kanyuka O.I., Khariv I.I., Gunchak V.M., Gufriy D.F.- Lviv Publishing House PE "Bodlak", 2015. - 642 p.
Language of instruction	Ukrainia

The structure of the discipline by type of occupation

Subject	A	B	C	D	E	F	G	H
Pharmacology and Pharmacotherapy	44	14	106	70	6	-	-	240 (8 credit)

Date of the last modification of the program	28.08.2019.

University Name: Bila Tserkva National Agrarian University	
The name of the faculty: Faculty of Veterinary Medicine	
Subjects	**VETERINARY EPIDEMIOLOGY**
Lecturer	Taras Tsarenko, PhD, DVM, Iryna Rublenko, Dr. of. Sci., DVM;Tetiana Bakhur, PhD, DVM
Forms of study: Lectures / practical **Number of hours of study: ECTS** – 3 (90 год.); **number of hours per week:** 6 semester – 3 (1/2) **Student's presence:** mandatory	
A course and semester in which the study of discipline is planned	3 course, 6 semester
Prerequisites for studying discipline	«Ecology and Environmental Protection», «Veterinary Microbiology and Immunology», «Pathological physiology», «Pharmacology and Pharmacotherapy», «Biomedical Statistics and Informatics»
Methods of knowledge control	Test

List of competences and relevant learning outcomes provided by the discipline	Students need to know and be able to: ***Knowledge:*** – The laws of the epidemic process in populations of animals and poultry; – Patterns of the emergence and spread of diseases of different etiology; – Principles of risk analysis; – General principles of descriptive and analytical epidemiology; – Epidemiological methods and types of epidemiological research; – Sources of epidemiological data and methods. ***Skill:*** - to conduct operational analysis (sanitary-epidemiological observation, sanitary-epidemiological intelligence); - retrospective analysis (for a long period of time, in the territory, among animals); - to investigate the epidemic; - be able to apply against epidemiological and prophylaxis; - receive and use information from the corresponding sources; - critical assessment of published and statistical information; - be able to participate accordingly in epidemiological investigations, including collection, handling and transportation of samples or samples.
Description of discipline	
Base holding classes from discipline	Auditories, computer classes.
Themes of classroom classes	**Lectures:** **1. Determination of veterinary epidemiology.** Types of epidemiological research. Components of epidemiology, quantitative and qualitative research. Causal and consequences, evidence of medicine. Causality. Checking the hypothesis. Types of connections between phenomena and methods of their research. **2. Description of manifestations of diseases.** Types of populations. Prevalence, incident, mortality, mortality, survival. Geographic distribution. Characteristics of the disease. Characteristics of an animal (genotype, age, species, breed, behavior), characteristic of the pathogen (virulence, pathogenicity, consequences of infection, microbial colonization of the animal), signs of external medium (geography, climate, management, stress), interaction biological and statistical. **3. Transmission of infection and ecology of the disease.** Horizontal, vertical, transmissive, factors of support of the epizootic process, cross-border disease. Distribution of infections in populations and its regulation in the ecosystem. Natural Foreos of Diseases, Landscape Epizootology. **4. Pattern of diseases. Comparative epidemiology.** Epidemic curves. Kendala's theorem. Reproductive number. Trends spread disease. Types of biological models. Comparative research and their application.

	5. Collection and processing of epidemiological data. Classification of data. Measurement levels. Accuracy, reliability, reliability of data. Data quality control. Databases. Analysis and representation of numerical indicators. Descriptive indicators. Descriptive statistics, data distribution, confidence intervals. Visualization of quantitative and qualitative indicators. **6. Types of collection of samples, evaluation of prevalence, establishment of the presence of a disease in a population.** Confirmation of the connection of the disease and the hypothetical factor. Principles of choice of diagnostic tests. Calculation of sample size. Methods of statistical evaluation. Epidemiological calculators. Economics of supervisors. **7. Descriptive and analytical epidemiology. Observation studies.** Cohort, case-control and cross-sectional research. Design of epidemiological research. Epidemiological supervision. Goal and types of supervision. Data sources, oversight mechanisms. **8. Risk Analysis.** Description of risk. Risk analysis components: threat identification, assessment, risk management and communication. Quality and quantitative risk assessment.
	Topics of practical classes: **1. Determination of veterinary epidemiology. Causal-effects, evidence medicine.** Types of epidemiological research. Components of epidemiology, quantitative and qualitative research. Causality. Checking the hypothesis. Types of connections between phenomena and methods of their installation. **2. Description of manifestations of diseases.** Types of populations. Prevalence, incident, mortality, mortality, survival. Geographic distribution. **3. Characteristics of the disease.** Characteristics of an animal (genotype, age, species, breed, behavior), characteristic of the pathogen (virulence, pathogenicity, consequences of infection, microbial colonization of the animal), signs of external medium (geography, climate, management, stress), interaction biological and statistical. **4. Seminar.** **5. Transmission of infection and ecology of the disease.** Horizontal, vertical, transmissive, factors of support of the epizootic process, cross-border disease. Distribution of infections in populations and its regulation in the ecosystem. Natural Food Facility, Landscape Epizootology. **6. Патерн хвороби. Порівняльна епідеміологія.** Pattern of diseases. Comparative epidemiology. Epidemic curves. Kendala's theorem. Reproductive number. Trends spread disease. Types of biological models. Comparative research and their application **7. Collection and processing of epidemiological data.** Classification of data. Measurement levels. Accuracy, reliability, reliability of data. Data quality control. Databases. Analysis and representation of numerical indicators. Descriptive indicators. Descriptive statistics, data distribution, confidence intervals. Visualization of quantitative and qualitative indicators. **8. Seminar.**

	9. Confirmation of the connection of the disease and the hypothetical factor. Descriptive and analytical epidemiology. Observation studies. Principles of choice of diagnostic tests. Calculation of sample size. Methods of statistical evaluation. Epidemiological calculators. Cohort, case-control and cross-sectional research. Design of epidemiological research. **10. Epidemiological supervision.** Goal and types of supervision. Data sources, oversight mechanisms. **11. Analysis of risks.** The notion of risk. Risky analysis components: threat identification, assessment, management and risk communication. Quality and quantitative risk assessment. **12. Seminar.**
Recommended Books:	1. Veterinary Epidemiology 4th ed. Michael Thrusfield. John Wiley & Sons, 19 лют. 2018 р. - 888 стор. 2. Veterinary Epidemiology - An Introduction. Dirk U. Pfeiffer. John Wiley & Sons, 8 трав. 2013 р. - 152 стор. 3. Epidemiology for Field Veterinarians: An Introduction. Evan Sergeant, Nigel Perkins. CABI, 28 лип. 2015 р. - 319 стор. 4. A Dictionary of Epidemiology. 6th Edition by Miquel Porta. 320 pages. Publisher: Oxford University Press; 5 edition (July 3, 2014) 5. Veterinary Clinical Epidemiology: A Problem-Oriented Approach, Second Edition. Ronald D. Smith. CRC-Press. 1995 6. Animal Disease Surveillance and Survey Systems: Methods and Applications. by Mo Salman. November 2003 7. Makarov V.V. Эpyzootolohycheskaia metodolohyia [Methodology of Epizootology]. Rossyiskyi unyversytet druzhbы narodov. - M.: 2001. - 224 s., 39 tabl., 15 rys., bybl. 59 naym. 8. Epyzootolohycheskyi metod yssledovanyia [Epizootological research method]: Uchebnoe posobye./ Makarov V.V., Sviatkovskni A.V., Kuzmyn V.A., Sukharev O.Y. M 15 — SPb.: Yzdatelstvo «Lan», 2009. — 224 s
Teaching language	Ukrainian

Structure of discipline by types of classes

Subject	A	B	C	D	E	F	G	H
Veterinary Epidemiology	**1**	**6**	**5**	**1**		**-**	**-**	**120 (3 ECTS)**
	8	2	1	6	-	-	-	Department Epizootology 30 (1 кредит)
	4	2	1	6	-	-	-	Department Parasitology 30 (1 кредит)
	4	2	1	6	-	-	-	Department Microbyology 30 (1 кредит)

A: lecture; **B**: seminars; **C**: controlled self-learning; **D**: laboratory and descriptive work, **E**: non-clinical animal work; **F**: clinical work on animals; **G**: others (please specify); **H**: among

The date of the latest program modification	Developed for the first time in 2020-2021

Name of the university: BilaTserkva National Agrarian University	
Name of the faculty: Faculty of Biology and Technology	
Subjects	**ANIMAL NUTRITION**
Teachers	BomkoVitalii, doctor habilitated; Kuzmenko Oksana, PhD; TytariovaOlena, PhD.
Forms of education: Lectures/practical **Volume of study load:**loans **ECTS** – 4 (120 hours); **Weekly load:** 4 semester – 4(1/3); **Student presence:** compulsory	
Course and semester in which the discipline is planned to be studied	2nd year, 4th semester
Prerequisites for studying the discipline	"Animal Anatomy", "Animal Physiology", "Biochemistry", "Feed plant biology and toxic plants"
Methods of knowledge control	Exam
Learning outcomes and competencies	**Learning outcomes defined by the Standard of Higher Education of Ukraine for specialty 211 "Veterinary Medicine": PH7, PH9, PH10, PH12, PH19, PH 20** Students **must know**: the role of nutrients in animals of different species and groups; classification and nutritional value of feed; methods for assessing the nutritional value of feed; technology of feed preparation for feeding; basics of normalized feeding of animals of different species, sex and age groups; know and follow the requirements of DSTU and instructions for storage, transportation, production and use of feed. **Be able to:** according to the results of the analysis to calculate the nutritional value of feed; to make zootechnical analysis of forages; to compile rations according to detailed feeding norms, according to which (depending on the species of animals) the rationing of nutrients in rations according to 24–30 indicators instead of the previously accepted ones is provided; analyze feeding rations of animals of different species, sex and age groups; draw conclusions about the completeness of rations and the impact on metabolic processes, physiological condition, reproductive capacity, productivity and product quality; develop ways to improve animal nutrition; have methods and techniques to control the full value of animal feeding; to carry out organoleptic assessment of feedstuffs.
Description of the discipline	
The base of the discipline	Auditoriums, and laboratory of the department, interdepartmental clinics, farms of educational and research

	economy of the university, public and private farms and enterprises.
Topics of classes	– The role of feeding in improving animal productivity and disease prevention. Estimation of nutritional value of feeds by chemical composition. Digestion of feed as the first stage of the use of organic nutrients in animals. – Material changes in the body of animals under the influence of nutrients and energy of feed. – Energy, protein, fat, carbohydrate, mineral and vitamin nutrition of feed. Comprehensive assessment of nutritional value of feeds and rations. – Classification and brief description of basic feeds and additives. – Basics of normalized feeding of polygastric animals. – Basics of normalized feeding of monogastric animals. – Use of software and mobile applications in animal feeding. – Basics of normalized feeding of small domestic and exotic animals.
Recommended Books:	1. Workshop on feeding farm animals: textbook. manual / [Ibatullin II, Chigrin AI, Otchenashko VV etc.], ed. Academician of the NAAS of Ukraine II Ibatullin.– Zhytomyr: Polissya, 2013. - 442 p. 2. Feeding of farm animals: Textbook / V.S. Bomko, S.P. Babenko, O.Yu. Muscovite. - Kyiv, "Agricultural Education", 2010. - 278 p. 3. Practicum on feeding farm animals: textbook / [Ibatullin II, Melnyk YF, Otchenashko VV, etc.]; ed. Academician of NAAS of Ukraine II Ibatullina. - K .: 2015. - 422 c. 4. Recommendations for normalized feeding of pigs / ed. E.V. Rudenka, G.O. Bogdanova, V.M Kandibi. - K .: Arpap. Science, 2012. - 112 s. 5. Physiology of nutrition and feeding of horses: scientific-practical. Manual / [O.M. Zhukorsky, II Ibatullin, D.A. Volkov and others]; for order. OHM. Zhukorsky - K .: Agrarian Science, 2013. - 352 p. 6. Feeding sheep and goats: a textbook / IF Draganov, VG Dvalishvili, VV Kalashnikov. - M .: GEOTAR, 2011. - 208 p.
Language of instruction	Ukrainian

The structure of the discipline by type of occupation

A lectures	B seminars	C independent work	D laboratory	E non-clinical with animals, models	F clinical with animals	G other	H in all
16		56	48				120

Date of the last modification of the program	28.08.2020

Name of the university: Bila Tserkva National Agrarian University

Name of the faculty: Faculty of Biotechnology	
Name of discipline	**ETHOLOGY AND ANIMAL WELFARE**
Teachers	Yuriy Balatsky, PhD, DVM; Lesya Bondarenko, PhD, DVM;
Form of study: Lectures/practical **The amount of training load: ECTS** credits – 3 (90 h.); **Number of lessons per week:** 0,5 lectures, 2 practical **Student presence:** required	
Course and semester in which the discipline is planned to be studied	course 2, semester 4
Prerequisites for studying the discipline	«Inorganic and analytical chemistry», «Animal anatomy», «Animal physiology»,
Methods of knowledge control	Test
Learning outcomes and competencies	**Learning outcomes defined by the standard of higher education of Ukraine for specialty 211 «Veterinary Medicine»:** PH6, PH7, PH8, PH9, PH10, PH17 Students must know animals depending on the conditions of their keeping, feeding and operation, as well as life manifestations of different species of animals, sex, age and technological groups of animals, their adaptation, acclimatization, social behavior in groups depending on the technology of keeping. Be able to use knowledge of behavioral reactions of animals in practice in order to rationally use the genetic resources of animals, the production of quality products. Be able to analyze the actions of animals depending on the adaptive and social behavioral responses, assess the types of higher nervous activity of the animal, to form their proper behavior. Distinguish the causes of pathological behavioral reactions using the latest methods and correct unwanted behavior in animals.
Description of disciplines	
The base of the discipline	Auditoriums, research laboratories of BNAU interdepartmental clinics and farms of educational and research economy of the university, farms of agricultural enterprises
Topics of classes	1. Ethology as a science. A short sketch of the history of development. Defining the concept of welfare as a science, its task. 2. Forms of individual behavior of animals 3. Reproductive behavior 4. Organization of groups and social behavior of animals 5. Features of the behavior of birds. 6. Features of behavior of cattle and pigs 7. Features of behavior of horses and sheep. 8. National and international veterinary legislation
Recommended literature:	1. Ippolitova T.V. Ethology of animals. - M .: МГАВМиБ им. K.S. Scriabin, 1999, 32p.

	2. Zaporozhyan V.M., Aryaev M.L. Bioethics and biosafety: Textbook / V.M. Zaporozhyan, M.L. Aryaev. - K .: Healthy, 2013. - 456 c. 3. Tinbergen N. Social behavior of animals / trans. with English - M .: Mir, 1993. 4. Chaichenko G.M. Behavior and psyche of animals: A textbook. - Kyiv: Kyiv University Publishing and Printing Center, -2000. - 200 s. 5. Ignatenko. I.A. Ethology: A textbook. - For 3rd year full-time and part-time students in the direction of training 6. 040102 - biology. - Cherkasy, 2009. - 96 p. 6. Korzh O.P. Ethology of animals: a textbook. - Sumy: University Book, 2011. - 236 p. 7. Severinovskaya O.V. Ethology (basics of animal behavior): a textbook for higher education - D .: Dnepropetrovsk Publishing House. nat. University, 2010. - 292 p.8. Dugatkin, Lee Alan, 2009 Principles of animal behavior / Lee Alan Dugatkin. -- Third edition, 674 p. 9. Manning, Aubrey An introduction to animal behaviour 2012/ Aubrey Manning, Marian Stamp Dawkins. – 6th ed., 470 p.
Language of instruction	Ukrainian

Structure of discipline by occupation

A lectures	B seminars	C self-assessment	D laboratory and desktop work	E non-clinical animals, models	F clinical with animals	G other	H together
16	-	42	32	-	-	-	90

Date of the last modification of the program	28.08.2020 p.

Name of the university: Bila Tserkva National Agrarian University	
Name of the faculty: Faculty of Veterinary Medicine	
Subjects	**PARASITOLOGY AND INVASIVE DISEASES**
Teachers	Vladimir Goncharenko, PHD, DVM, Anatoly Antipov, PHD, DVM, Lyudmila Artemenko, PHD, DVM, Lyudmila Solovyova, PHD, DVM, Vladimir Shaganenko, PHD, DVM
Forms of study: Lectures / practical **Volume of study load: EKTS credits** - 7 (210 hours); **Weekly workload:** 7 semester 4 2/2 8 semester 3 1/2 **Student attendance:** required	
Course and semester in which the discipline is planned to be studied	4th year, 7th - 8th semester
Prerequisites for studying the discipline	"Chemistry", "Veterinary Clinical Biochemistry", "Internal Diseases of Animals", "Veterinary Microbiology", "Pharmacology and Pharmacotherapy", "Clinical Diagnosis and Diagnostic Imaging", "Pathological Anatomy and Necropsy", "Obstetrics, Gynecology and

	Gynecology with the basics of andrology "," Epizootology, infectious diseases and preventive medicine "
Методи контролю знань	Залік, виконання історії хвороби та захист курсової роботи, іспит
Learning outcomes and competencies	Learning outcomes defined by the Standard of Higher Education of Ukraine for specialty 211 "Veterinary Medicine": RN 5, RN 7, RN 8, RN 15. Students must know and be able to: ***Knowledge:*** - know the features of the biology of pathogens of infectious diseases, the pathogenesis of diseases, current regulations on methods of combating them and methods and means of physiotherapy, diet and pharmacotherapy - know the patterns of development of the epizootic process, etiology and pathogenesis of non-communicable, infectious and invasive animal diseases. Take into account the nature of various veterinary treatments, species, age, breed and individual characteristics of animals - know the patterns of development of the epizootic process, the etiology and pathogenesis of non-communicable, infectious and invasive diseases of animals and ways to prevent them and prevent ***ill:*** - the ability to apply a rational scheme of treatment of a sick animal, choosing etiotropic, noso-genetic, replacement, symptomatic, and if necessary - and radical therapy of a sick animal. Ability to use specific and symptomatic pharmaceuticals and drugs for the treatment of animals suffering from infectious and non-communicable diseases - compile and analyze the necessary veterinary documents and inspect animals and controlled loads. To form the concept of anti-epizootic measures, to analyze the effectiveness of disinvasion, disinsection, desaccharification to organize and carry out prophylactic treatments against infectious and invasive diseases, as well as to carry out medical examination of animals for the purpose of reasonable prevention of diseases and obtaining high-quality and safe products.
Description of the discipline	
The base of the discipline	Auditoriums, Museum of Parasitology, Laboratory of the Department, Interdepartmental Clinics and Farms of the University's Research Farm, Public and Private Clinics for Companion Animals, Farms of Agricultural Enterprises
Topics of classroom classes	**Lecture topics:** 1. Content module 1. General parasitology, trematodes, larval cestodes 2. Content module 2. Imaginal cestodes, ascariasis, trichuratosis. 3. Content module 3. Strongylatosis, spiruratosis, filariasis 4. Content module 4. Acarose and entomosis invasions of animals and their control.

	5. Content module 5. Veterinary protozoology.
	Topics of practical and independent classes: 1. Content module 1. General parasitology, trematodes, larval cestodes 2. Content module 2. Imaginal cestodes, ascariasis, trichuratosis. 3. Content module 3. Strongylatosis, spiruratosis, filariasis 4. Content module 4. Acarose and entomosis invasions of animals and their control. 5. Content module 5. Veterinary protozoology
Recommended Books:	1. Protozoan diseases of carnivores / OA Dubova, DV Feshchenko, TI Bahur, etc .; for order. OA Dubova. - Bila Tserkva, 2019. - 254 p. 2. Toxocariasis of dogs and cats: a textbook / T.I. Bahur, A.A. Antipov, VP Гончаренко, Л.М. Соловьова. - Bila Tserkva, 2018. - 54 p. 3. Global parasitology: Textbook / [Galat VF, Berezovsky AV, Soroka NM etc.]; edited by VF Galata. - K: ДІА, 2014. - 568 c. 4. Parasitology and invasive diseases of animals: textbook - 2nd ed., Revised. and add. / [В.Ф. Galat, A.W. Berezovsky, NM Soroka, MP Prussia] for ed. V.F. Galata. - K .: Урожай, 2009. - 368 c. 5. Ponomar SI Handbook of differentiation of pathogens of invasive animal diseases / S.I. Ponomar, VP Гончаренко, Л.М. Соловьова; For order. SI. Ponomarev. - Kyiv, 2010. - 327 p.
Language of instruction:	Ukrainian

The structure of the discipline by type of occupation

A Lectures	B Seminars	C Independent	D Practical	E Not clinical	FX Clinical
46	10	104	50		

Date of the last modification of the program	28.08.2019

Name of the university: Bila Tserkva National Agrarian University	
Name of the faculty: Faculty of Veterinary Medicine	
Subjects	**PATHOLOGICAL ANATOMY AND NECROPSY**
Teachers	Mykola Utechenko, PhD, DVM
Forms of study: Lectures / practical **Volume of study load:** EKTS credits - 7 (210 hours); **Weekly load:** **Student attendance:** required	
Course and semester in which the discipline is planned to be studied	4th year, 7-8 semesters

Prerequisites for studying the discipline	"Animal Anatomy", "Cytology, Histology, Embryology", "Animal Physiology", "Pathological Physiology" and clinical disciplines
Methods of knowledge control	Credit, defense of curation, exam
Learning outcomes and competencies	**Knowledge:** - know the features of the structure of the animal body according to the norms and possible changes in the shape and structure of organs in pathology; - have knowledge of the etiology and pathogenesis of animal diseases, current regulations relating to this type of professional activity, know the latest methods and techniques of laboratory research; - have current regulations. **Skill:** - work with a microscope and histological specimens. - select pathological material for histological, histochemical and other types of laboratory tests (bacteriological, virological, chemical-toxicological) and draw up accompanying documents for relevant studies. - use tools for necropsy. - correctly methodically and technically do necropsy of corpses of animals of different species. - to determine and describe the nature of pathological processes in organs and tissues on the basis of macro- and microscopic changes. - justify the underlying disease, its complications and comorbidities. - correctly and competently draw up a document based on the results of necropsy. - follow biosafety rules.
Description of the discipline	
The base of the discipline	Auditoriums, Museum of Pathological Anatomy and Necropsy Hall, Skvyra Recycling Plant
Topics of classes	**Lecture topics:** - Pathological anatomy, its content and significance. Biosafety. The concept of atrophy, general and local death. The general concept of dystrophy. Protein dystrophies. - Mixed dysproteinosis (impaired metabolism of gluco-, nucleo- and chromoproteins) - Fatty dystrophies. Atherosclerosis. Carbohydrate and mineral dystrophies. Lipidogenic and exogenous pigments. - Disorders of blood, lymph circulation and tissue fluid metabolism. Study of hyperemia: arterial and venous, anemia, stasis, ischemia. - Bleeding, hemorrhage, heart attacks, thrombosis, embolism. Circulatory and lymphatic disorders. Swelling, dropsy. Compensatory-adaptive processes. - General characteristics of inflammation. Alternative, exudative and proliferative type of inflammation.

	- Neoplasms (tumors). The study of tumors of connective tissue, epithelial origin, tumors originating from muscle and nerve tissue and complex. - The concept of hemoblastosis and their general characteristics. The most common leukemias in pets. - Diseases of the cardiovascular system and hematopoietic organs, respiratory organs. - Diseases of the digestive, nervous and urogenital systems. - Poisoning. Pathomorphology of mycotoxicosis and mycoses. - Acute bacterial diseases. - Chronic bacterial diseases - Viral diseases. - Sectional course. Fundamentals of forensic veterinary medicine.
	Topics of practical classes: - Pathanatomy, its content and significance. Biosafety. - Death, posthumous changes. - Atrophy. Necrosis. Apotosis. - Dystrophies (protein, fat, carbohydrates, minerals). - Local circulatory disorders. - Disorders of lymph circulation and tissue fluid metabolism. - Adapters and recovery processes. - Inflammation. - Neoplasms - Hemoblastosis. - Organopathology. - Sepsis. - Acute infectious diseases. - Chronic infectious diseases. - Viral diseases - Poisoning. Mycoses mycotoxicosis. - Parasitosis. - Basics of necropsy.
	Topics of independent classes: - General, local death. - General principles of pathological and anatomical dissection of farm animals. - Registration of documentation based on the results of necropsy. - The sequence of stages of pathological and anatomical dissection of pigs, poultry, cattle, cattle and horses, taking into account age groups. ¬ Postmortem visualization of pathologies in diseases of the cardiovascular system, hematopoietic organs, respiratory, digestive and peritoneal, genitourinary system and nervous tissue, metabolic disorders. - Procedure and documentation for the selection, packaging, recording and shipment of material for laboratory tests. ¬ Biosafety for necropsy. - Fundamentals of forensic veterinary medicine. - Pathomorphology of poisonings.

Recommended Books:	1. Etiology and pathomorphology of dystrophies: a textbook / [IV Papchenko, MV Utechenko, ME Ivanytsky and others]; for order. I.B. Papchenko and MV Utechenko - Bila Tserkva, 2006. - 132 p. 2. Жаров A.B. Dissection and pathomorphological diagnosis of animal diseases / A.V. Жаров, И.В. Ivanov, AP Strelnikov; under ed. A.V. Жарова. - M .: Колос, 2001. - 400 с. 3. Pathological anatomy of animals / P.P. Urbanovich, MK Potocki, II Gevkan [etc.] - K .: Vetinform, 2008. - 896 p. 4. Pathological and anatomical autopsy of farm animals with the basics of forensic veterinary medicine: Methodological recommendations for students of educational level - master and students of the Institute of Postgraduate Education / IV Papchenko, Yu.M. Tirsina, MV Utechenko - Bila Tserkva, 2018 - 54 p. 5. Zabello EM Pathological anatomy of infectious diseases of animals / E.M. Zabello. - K .: Аграрна наука, 1997. - 246 с. 6. Strukov AI Pathological Anatomy: Textbook / Per. from Russian, 4th ed., stereotypical. / A.I. Strukov, VV Serov. - Kharkiv: Fakt, 2000. - 864 p.
Language of instruction	Ukrainian

The structure of the discipline by type of occupation

Subject	A	B	C	D	E	F	G	H
Pathological anatomy and necropsy	30		102	28		50	-	210 7 Loans

Date of the last modification of the program	28.08.2019 p.

University Name: Bila Tserkva National Agrarian University	
The name of the faculty: Faculty of Veterinary Medicine	
Subjects	**EPIZOOTOLOGY, INFECTIOUS DISEASES AND PREVENTIVE MEDICINE**
Викладачі	Sergiy Bilyk, PhD, DVM; Oleksandr Dovgal, PhD, DVM; Olexandra Novik, DVM
Forms of study: Lectures / practical **Number of hours of study: ECTS** – 10 (300 год.); **Number of hours per week:** 7 semester – 2 (1/1), 8 semester – 5 (2/3), 9 semester – 6 (2/4). **Student's presence:** mandatory	
A course and semester in which the study of discipline is planned	4–5 years, 7–9 semester.
Prerequisites for studying discipline	"Anatomy", "Cytology, Histology, Embryology", "Physiology of Animals", "Pathological Physiology", "Anesthesiology and Operational Surgery", "Veterinary Microbiology and Immunology", "Veterinary Epidemiology", "Pharmacology and

	Pharmacotherapy", "Organization Veterinary service and public health care ", " Propedetics and diagnostic visualization", " Veterinary toxicology ", " Veterinary Clinical Biochemistry", " Pathological Anatomy and Necropsy ", " Parasitology and Invasive Diseases ".
Methods of knowledge control	Credit, course project protection, exam.
List of competences and relevant learning outcomes provided by the discipline	The result of teaching the discipline is the acquisition of the following knowledge and skills by students: **Knowledge:** - have professional and specialized knowledge and practical skills in the etiology, pathogenesis and epizootiology of infectious animal diseases, in particular transboundary bases of epidemiology according to OIE requirements; keeping and operating animals; - describe the nature and dynamics of physicochemical and biological processes that occur in the body of animals in normal and pathological conditions under the influence of environmental factors, the action of infectious agents, surgical and obstetric-gynecological interventions; - have professional-profile knowledge and understanding of the basic provisions of international and European animal welfare legislation; possess clinical and laboratory research techniques to monitor animal health and control the treatment of diseased animals and the prevention of animal diseases of different etiologies; - to understand the essence of the processes of production, storage and processing of biological raw materials. **Skills:** - be able to carry out sampling, canning, packaging and forwarding of samples of animal, plant and biotechnological origin for research, to carry out veterinary records, to draw up accounting documentation; - be able to identify the sources of the causative agent of infections, invasions, to determine the factors and mechanism of their transmission; ensure the isolated maintenance of sick and suspected animals of infectious or invasive animal disease; to carry out forced vaccinations of animals in disadvantaged and threatened service areas; to take measures aimed at preventing the spread of the pathogen and infestation beyond the epizootic hearth and eliminating the hearth itself; not allow the care of animals with zoonotic diseases; - have a methodology for conducting, epizootic, parasitological, chemical-toxicological, radiological, sanitary-hygienic studies for the diagnosis of animal diseases of non-infectious, infectious and invasive etiology using instrumental and laboratory methods; analyze the results of the study of biological material; to interpret the results of research in the light of the achievements of science and practice; - have common clinical and laboratory research techniques to monitor the health of animals and to maintain the production and

	circulation of food derived from animals treated and prophylactically, in accordance with the Single Health concept; - be able to organize the rehabilitation of livestock premises by chemical, biological and physical methods and to control it; - be able to operate the basic concepts of biosafety, biosecurity, to have the basics of bioethics; to analyze current and newest ethical problems of biotechnology and pharmaceutical industries; analyze the causes of epizootic situations and infectious diseases that have emerged in recent years.
Description of discipline	
Base holding classes from discipline	Аудиторії, лабораторія кафедри, міжкафедральні клініки та ферми навчально-дослідного господарства університету, державні та приватні клініки для тварин-компаньйонів, ферми сільськогосподарських підприємств.
Themes of classroom classes	**Lecture topics:** 1. The subject and tasks of epizootology. History of epizootic development. The role of Ukrainian scientists in the development of epizootology. Relation of epizootology with other sciences. 2. Infection and infectious disease. Forms of infection and their epizootological significance. 3. The spread of pathogenic microbes in the body of animals. Types of infection. 4. Epizootic process. Epizootic hearth. Natural fire. Anti-epizootic measures. 5. Nomenclature and classification of infectious diseases. Laws and categories of epizootology. Prevention of infectious diseases. 6. Anthrax. 7. Tuberculosis. 8. Brucellosis. 9. Leptospirosis. Listeriosis. 10. Chlamydiosis Rickettsiosis. 11. Dermatomycosis. 12. Emphysematous carbuncle. Ruler. 13. Malignant edema. Botulism. 14. FMD. Smallpox. 15. The tale. Aujeszky's disease. 16. Cattle leukemia. 17. African swine fever. 18. Classical swine fever. 19. Dysentery of pigs. 20. Teschen's disease. 21. Infectious atrophic rhinitis. 22. Colenterotoxemia. 23. PRRS. Parvovirus infection of pigs. 24. Spongiform cervical encephalopathy. 25. Blutang. 26. Nodular dermatitis. 27. Plague of small ruminants. 28. Malignant catarrhal fever. 29. Scrapie. 30. Horse Flu. Rhinopneumonia. 31. Sap. Myth.

	32. Infectious anemia of horses. 33. Viral arteritis of horses. Epizootic equine lymphangitis. 34. Western equine encephalomyelitis. 35. Viral haemorrhagic disease of rabbits. 36. Myxomatosis. 37. Dog plague. 38. Parvovirus of dogs. 39. Coronavirus enteritis of dogs. 40. Parahrips of dogs. 41. Adenovirus of dogs. 42. Calicivirus of cats. 43. Cat rhinotracheitis. Panleukopenia of cats. 44. Newcastle disease. 45. Infectious bursitis. Infectious bronchitis. 46. Pullorosis. 47. Viral hepatitis ducklings. 48. Bird flu. 49. Leukemia of the bird. 50. Marek's Disease. **Practical topics:** 1. Measures to eliminate the mechanism of transmission of the pathogen. Rules for working with infectious animals. Installation of isolators and infectious clinics. 2. Disinfection and its role in the system of anti-epizootic measures. 3. Deratization. 4. Levels of study of immunity. 5. Biology of the immune response. 6. Diagnosis of infectious diseases in epizootology. 7. Disposal of carcasses and animal waste. 8. Selection and forwarding of pathological material for laboratory examination. 9. Specific prevention. Therapy and treatment-and-prophylactic measures in infectious diseases. 10. Anthrax. 11. Tuberculosis. 12. Brucellosis. 13. Leptospirosis. Listeriosis. 14. FMD. Smallpox. 15. The tale. Aujeszky's disease. 16. Cattle leukemia. 17. There were pigs. Anaerobic eterotoxemia of young animals. 18. Hemophilous polyseritis. Infectious atrophic rhinitis. 19. Colenterotoxemia. Colibacteriosis. 20. Streptococcosis. Salmonellosis. 21. Teschen's disease. 22. Swine flu. Enzootic pneumonia of pigs. 23. Classical swine fever. 24. African swine fever. 25. PRRS. 26. Parvovirus infection of pigs.

	27. Circovirus infection of pigs. 28. Actinobacillus pleuropneumonia of pigs. 29. Vesicular exanthema of pigs. 30. Vesicular disease of pigs. 31. Spongiform cervical encephalopathy. Scrapie. 32. Plague of cattle. Plague of small ruminants. 33. Emkar. A sheep's bastard. 34. Blutang. 35. Nodular dermatitis. 36. Malignant catarrhal fever. 37. Paratuberculosis. 38. Infectious agalactia of sheep. 39. Contagious ectymus of sheep and goats. 40. Flu of horses. Rhinopneumonia. 41. Sap. Myth. 42. Infectious anemia of horses. 43. Viral arteritis of horses. 44. Epizootic equine lymphangitis. 45. Contagious metritis of mares. 46. Western equine encephalomyelitis. 47. Oriental equine encephalomyelitis. 48. Japanese equine encephalomyelitis. 49. Venezuelan equine encephalomyelitis. 50. Aleutian mink disease. 51. Viral haemorrhagic disease of rabbits. 52. Myxomatosis. 53. Carnivorous plague. 54. Infectious carnivorous hepatitis. 55. Parvovirus of dogs. 56. Adenovirus of dogs. 57. Coronavirus enteritis of dogs. 58. Parahrips of dogs. 59. Calicivirus of cats. 60. Cat rhinotracheitis. 61. Panleukopenia of cats. 62. Newcastle disease. 63. Infectious bursitis. 64. Marek's Disease. 65. Leukemia of the bird. 66. Infectious bronchitis. 67. Bird flu. Respiratory mycoplasmosis. 68. Smallpox birds. 69. Half-life. 70. Infectious laryngotracheitis. Sleep reduction syndrome. 71. Viral hepatitis ducklings. Geese parvovirus enteritis.
Recommended Books:	1. Ynfektsyonnыe bolezny zhyvotnыkh [Infectious animal diseases] / B.F. Bessarabov, A.A. Vashutyn, E.S Voronyn y dr.; Pod red. A.A. Sydorchuka. – M.: Kolos, 2007.– 671 s. (in Ukrainian) 2. Infektsiini khvoroby tvaryn z vezykuliarnym syndromom: Navch. Posibnyk [Infectious diseases of animals with vesicular syndrome] / L.Ie. Korniienko, V.O Busol, V.V. Nedosiekov ta in.;

	Za red. L.Ie. Korniienka. – Bila Tserkva: Bilotserkiv. derzh. ahrar. u-t, 2011.– 272 s. (in Ukrainian) 3. Sapronozni infektsiini khvoroby tvaryn [Sapronous infectious diseases of animals] / L.Ie. Korniienko, V.V. Nedosiekov, V.O. Busol ta in.: monohrafiia.– Za red. L.Ie. Korniienka, V.O. Busola.– Bila Tserkva: Bilotserkiv. derzh. ahrar. u-t, 2010.– 306 s. (in Ukrainian) 4. Transkordonni khvoroby tvaryn z osnovamy stempinh-autu: Navchalnyi posibnyk [Cross-border diseases of animals with the basics of stamping out] / V.V. Nedosiekov, V.V. Melnyk, V.V. Makarov // – Kherson: Hrin DS, 2015.– 336 s. (in Ukrainian) 5. Povilni infektsiini khvoroby tvaryn [Slow infectious diseases of animals] / Za red. L.Ie. Korniienka.– Cherkasy, 2009. – 508 s. (in Ukrainian) 6. Chastnaia tpyzootolohyia: ucheb. Posobye dlia studentov vysshykh uchebnykh zavedenyi [Special epizootology: Handbook for students of higher educational institutions] / pod red. V.V. Maksymovycha.– Mynsk: YVTs Mynfyna, 2010.– 628 s. (in Ukrainian)
Teaching language	Ukrainian

Structure of discipline by types of classes

A	B	C	D	E	F	G	H
66		128	82	12	12		300

A: lecture; **B**: seminars; **C**: controlled self-learning; **D**: laboratory and descriptive work, **E**: non-clinical animal work; **F**: clinical work on animals; **G**: others (please specify); **H**: among

Дата останньої модифікації програми	28.08.2019 р.
Name of the university: Bila Tserkva National Agrarian University	
Name of the faculty: Faculty of Veterinary Medicine	
Subject	**VETERINARY TOXICOLOGY**
Teachers	Olexander Chub, PhD, DVM; Nataliia Vovkotrub, PhD, DVM; Vasyl Bezukh, PhD, DVM
Forms of study: Lectures / practical **Volume of study load:** ECTS credits - 3 (90 hours) **Form of study:** full-time **Weekly loading:** 3 (1/2) **Student attendance:** obligatory	
Course and semester in which the discipline is planned to be studied	4 year, 7 semester
Prerequisites for studying the discipline	Veterinary clinical biochemistry, Animal nutrition, Animal physiology, Pathological physiology, Pharmacology and Pharmacotherapy, Propaedeutics and diagnostic imaging
Methods of knowledge control	Test

Learning outcomes and competencies	Students must know: current regulations, etiology and pathogenesis of animal poisoning and methods and techniques of their diagnosis; have professional knowledge of chemical and toxicological methods of animal and poultry poisoning diagnosis; basic toxicometry parameters; toxicological research methods. Be able to: sampling, preserving, packaging and forwarding the samples for chemical and toxicological studies; possess the chemical and toxicological research methods with using special devices and equipment; organize and conduct laboratory and special diagnostic tests; analyze the results of laboratory tests and formulate conclusions, recommendations, advice or make a diagnosis; use information and communication technologies in professional activities; develop toxicological algorithms and apply different treatment schemes in animals different origin poisoning; to develop and organize measures for the prevention of poisoning in farm and small domestic animals and poultry, and in the case of poisoning - to make a qualified diagnosis using modern research methods.
Description of the discipline	
The base of the discipline	Classrooms, Laboratory of Clinical Biochemistry of the Department of Therapy and Clinical Diagnostics, interdepartmental laboratory of the Faculty of Veterinary Medicine
Topics of classroom lessons	Topic 1. Subject, definition and objectives of toxicology. General review about poisoning. Topic 2. Chemical and toxicological analysis in veterinary medicine. Principles of determining toxicity parameters, risk assessment. Topic 3. General principles of diagnosis, treatment and prevention animals' poisoning. Topic 4. Animals' poisoning by nitrates and nitrites. Topic 5. Poisoning by compounds used as feed additives (urea, sodium chloride). Topic 6. Animals' poisoning by anticoagulants. Topic 7. General characteristics of animals' poisoning by plants. Poisoning by plants containing alkaloids and glycosides. Topic 8. Poisoning by plants containing glycoalkaloids and phylloerythrin. Topic 9. Poisoning by plants that contain excessive amounts of carbohydrates and organic acids. Topic 10. Poisoning by toxic substances contained in feed for technical processing (pulp and molasses). Topic 11. Poisoning by ornamental, cereal and mallow plants.
Recommended literature:	1. Vnutrishni khvoroby tvaryn / [V.I. Levchenko, I.P. Kondrakhin, V.V. Vlizlo ta in.]; za red. V.I. Levchenka. – Bila Tserkva, 2001. – Ch. 2. – S. 490–536. 2. Berny P. Guide pratique de toxicologie clinique veterinaire / P. Berny, S.Queffelec // Medcom. – Paris, 2014. – 351 p.

	3. Plumlee K. Clinical veterinary toxicology / K. Plumlee // Mosby, 2004. – 477 p. 4. Laboratorna veterynarna toksykolohiia: Navch. posibnyk / [V.I. Levchenko, A.V. Rozumniuk, Yu.M. Novozhytska ta in.]. – Bila Tserkva, 2012. – 216 s.
Language of teaching	Ukrainian

The structure of the discipline by type of occupation

A lectures	B seminars	C Self-education	D laboratory	E non-clinical with animals, models	F Clinical with animals	G other	H total
16	3	42	29	-	-	-	90

Date of the last modification of the program	28.08.2020

Name of the university: Bila Tserkva National Agrarian University	
Name of the faculty: Faculty of Veterinary Medicine	
Subject	**PROFESSIONAL ETHICS AND COMMUNICATIONS OF VETERINARY PRACTICE**
Teachers	Koziy Vasyl Ivanovych Doctor of Veterinary Sciences, Professor, DVM Emelyanenko Alla Anatoliyivna Candidate of Veterinary Sciences, Assistant, PhD
Forms of study: Lectures / practical **Volume of study loading: EKTS credits - 3 (90 hours);** **Characteristics of the discipline:** **Form of study: full-time** **Number of credits of the corresponding ECTS - 3** **The total number of academic hours is 90** **Lectures - 16 Practical classes - 16** **Self-education work - 58 hours.** **Teaching method: stationary** **Weekly loading:** **Student attendance: required**	
Course and semester in which the discipline is planned to be studied	4 - 8
Prerequisites for studying the discipline	-
Methods of knowledge control	Test
Conditions for taking the course:	Attendance according to the rules of study, performance of individual tasks, participation and discussions, expression and argumentation of the point of view.
Learning outcomes and competencies	Ethics, as part of philosophy, studies the relationships between people. The professional ethics of a veterinarian studies the

	peculiarities of communication and relationships of a veterinarian with animal owners, colleagues, managers, subordinates, other professionals and citizens in the performance of their duties. As a result of mastering the discipline the student must know: - main historical aspects of the development of veterinary ethics and worldview of attitudes towards animals; the importance of communication and "soft skills" skills for the profession of veterinary medicine; - ethical features of the profession of veterinary medicine; - moral challenges of the profession and ways to solve them; be able to: - in the process of performing official duties to combine the interests of society, animals, their owners and their own; - using standards of ethical behavior to maintain a high degree of trust and respect for the profession of veterinary medicine; - protect the health and welfare of animals and protect them from unjustified suffering; use "soft skills" in professional activities; - self-improvement in order to maintain a high level of modern professional knowledge.
Short course plan:	Philosophy and psychology of veterinary medicine. Normative ethics and basic criteria of moral evaluation. Collegiality in the work of a veterinarian. The veterinarian is the leader of the team. The relationship of a veterinarian with the owner of the animal. Remarks and complaints of clients, resolution of conflict situations. Fundamentals of the doctrine of humane treatment of animals in various fields of use.
Description of the discipline	
The base of the discipline	Auditoriums, educational veterinary clinic.
Topics of classroom lessons	**Lecture topics:** 1. Veterinary medicine as a profession. 2. Normative ethics and basic criteria of moral evaluation 3. Collegiality in the work of a veterinarian 4. Veterinary doctor - team leader 5. The relationship of the veterinarian with the owner of the animal 6. Communication with the owner of the animal 7. Evaluation of the problem of humane treatment of animals in different areas of use. 8. Ethical aspects of veterinary business
	Topics of practical classes and independent classes: 1. Ethical challenges of the veterinary profession 2. Veterinary management - the theory of situational leadership 3. The owner is the key to the successful work of a veterinarian 4. Features of the psychology of the owner depending on the direction of use of the animal: agriculture, pets, sports, research, etc. 5. Continuity in the work of a veterinarian

	6. Professional error, negligence, accident, crime. Classification of medical errors 7. Deontological requirements for diagnosis and prevention of animal diseases, cooperation between doctor and animal owner 8. The authority of the profession. Results
Recommended literature:	1. Панько І. С. Професійна етика лікаря ветеринарної медицини / І. С. Панько. – Біла Церква, 2006. – 272 с. 2. J. Tannenbaum Veterinary Ethics (animal welfare, client relations, competition and collegiality), Mosby, 615 pp. 3. Козій В.І. Добробут тварин (історичні, наукові та нормативні аспекти) / В.І. Козій // Навчальний посібник, Біла Церква. – 2012. – 320 с. 4. Хериот Д. О всех созданиях, больших и малых / Д. Хериот. – М. : Мир, 1987. – 382 с. 5. Хериот Д. И все они – создания природы / Д. Хериот. – М. : Мир, 1989. – 260 с
Language of teaching	Ukrainian
Course evaluation: **Total number of assessment students: 50**	

A	B	C	D	E	FX
48,0	36,0	14,0	2,0	0,0	0,0

Структура дисципліни за видами занять

A lectures	B seminars	C Self-education	D laboratory	E non-clinical with animals, models	F Clinical with animals	G other	H total
16	4	40	30				90

Date of the last modification of the program	28.08.2019 p.

b. *Clinical Sciences*

Name of the university: Bila Tserkva National Agrarian University	
Name of the faculty: Faculty of Veterinary Medicine	
Subject	**PROPAEDEUTICS AND DIAGNOSTIC IMAGING**
Teachers	Vasyl Bezukh, PhD, DVM; Andrii Melnyk, PhD, DVM; Nataliia Vovkotrub, PhD, DVM; Oksana Piddubnyak, PhD, DVM; Mykola Samoray, PhD, DVM
Forms of study: Lectures / practical **Volume of study load:** ECTS credits - 9 (270 hours) **Form of study:** full-time **Weekly loading:** 4 (2/2) **Student attendance:** obligatory	

Course and semester in which the discipline is planned to be studied	2-3 year, 4-5 semester
Prerequisites for studying the discipline	Biophysics, Chemistry, Animal anatomy, Animal nutrition, Animal physiology, Pathological physiology
Methods of knowledge control	Test, exam
Learning outcomes and competencies	Students must know: methods of animal examination and to have the technique of basic and special methods (probing, ECG, measurement of arterial pressure, etc.); the main stages of diagnosis, the importance of the syndrome and its place in the overall system of disease diagnosis. Be able to: conduct laboratory analyze methods of blood, urine, colostrum, gastric and pancreatic juice, feces; analyze the results, their origin, causes, relationships with other changes, diagnostic and prognostic significance of symptoms.
Description of the discipline	
The base of the discipline	Classrooms, Laboratory of Clinical Biochemistry of the Department of Therapy and Clinical Diagnostics, interdepartmental laboratory of the Faculty of Veterinary Medicine
Topics of classroom lessons	Topic 1. Methods of clinical examination of animals. Symptoms and syndromes of diseases. Diagnosis. Forecast. Topic 2. Basic and additional methods of cardiovascular system examination. Topic 3. Basic and special methods of respiratory system examination. Topic 4. Blood tests: physical properties and chemical parameters. Clinical significance and interpretation of blood parameters. Topic 5. Examination of the digestive system and liver in animals of different species – the basic and additional methods. Topic 6. Examination of the urinary system in different species of animals. Topic 7. Nervous system examination. Topic 8. Examinations features in animals of different species, poultry and ornamental birds.
Recommended literature:	1. Klinichna diahnostyka khvorob tvaryn / [Levchenko V.I., Vlizlo V.V., Kondrakhin I.P. ta in.]; za red. V.I. Levchenka i V.M. Bezukha. – Bila Tserkva, 2017. – 544 s. 2. Metody laboratornoi klinichnoi diahnostyky khvorob tvaryn / [Levchenko V.I., Holovakha V.I., Kondrakhin I.P. ta in.]. – K.: Urozhai, 2010. – 408 s. 3. Laboratorni metody doslidzhennia u biolohii, tvarynnytstvi ta veterynarnii medytsyni: dovidnyk / [V.V. Vlizlo, R.S. Fedoruk, I.B. Ratych ta in.]; za red. V.V. Vlizla. – Lviv: SPOLON, 2012. – 764 s. 4. Metabolichni khvoroby silskohospodarskoi ptytsi: metodychni rekomendatsii / [A.Iu. Melnyk, V.I. Levchenko, I.V. Papchenko ta in.]. – Bila Tserkva, 2013. – 31 s.

	5. Biokhimichni metody doslidzhennia krovi tvaryn: metodychni rekomendatsii / [V.I. Levchenko, Yu.M. Novozhytska, V.V. Sakhniuk ta in.]. – K, 2004. – 104 s.
Language of teaching	Ukrainian

The structure of the discipline by type of occupation

A lectures	B seminars	C Self-education	D laboratory	E non-clinical with animals, models	F Clinical with animals	G other	H total
44	14	120	32	42	18	-	270

Date of the last modification of the program	28.08.2020

Name of the university: Bila Tserkva National Agrarian University	
Name of the faculty: Faculty of Veterinary Medicine	
Subject	**OBSTETRICS AND BIOTECHNOLOGY OF REPRODUCTION WITH THE BASICS OF ANDROLOGY**
Teachers	Svitlana Vlasenko, doctor habilitated, DVM (guarantor); Boris Ivasenko, PhD, DVM; Yuri Ordin, PhD, DVM; Igor Plahotniuk PhD, DVM; Alexander Eroshenko PhD, DVM**.**
Forms of study: lectures / laboratory **Volume of study loading: ECTS credits - 10 (300 hours);** **Weekly workloading: 6 semester - 6 (2/4); 7th semester - 4 (1/3);** **Student attendance: required**	
Course and semester in which the discipline is planned to be studied	3, 4 year; 6, 7 semesters
Prerequisites for studying the discipline	“ Animal Anatomy ”,“ Cytology, Histology, Embryology ”,“ Animal Physiology ”,“ Pathological Physiology ”,“ Animal Feeding ”,“ Veterinary Microbiology ”,“ Clinical Diagnosis and Diagnostic Imaging ”,“ Pharmacology and Pharmacotherapy ”,“ Veterinary Clinical Biochemistry ”,“ Anesthesiology and operative surgery ”.
Methods of knowledge control	Test, performance and defense of medical history, exam
Learning outcomes and competencies	Students must know: - morpho-physiological features of the genitals of females and males; - physiology of sexual cyclicity; - technologies of artificial insemination of animals; - physiology of pregnancy, childbirth and the postpartum period and newborns;

	- etiology and mechanisms of pathology of pregnancy, childbirth and the postpartum period, newborns; - physiology and pathogenesis of breast diseases; - diagnostic algorithm and treatment protocols for obstetric diseases, breast pathology and newborn diseases; - causes of infertility in males and females. be able: - inseminate females by different methods; - diagnose pregnancy; - provide obstetric care; - diagnose obstetric diseases, functional disorders and pathologies of the breast and treat sick animals; – - to assess the condition of newborns and provide medical care for their diseases.
Description of the discipline	
The base of the discipline	Classrooms and laboratory of artificial insemination of the department, clinics of ruminants, pigs, horses, small animals and exotic animals, farms of the research center of the university, public and private clinics for companion animals, farms of agricultural enterprises.
Topics of classroom lessons	**Lecture topics:** - Introductory lecture; - Evolution of reproduction and morpho-physiological features of the reproductive system in farm animals; Sexual cycle; - Regulation of sexual function in animals; - Physiology and organization of natural insemination; - Obtaining and evaluating the quality of sperm; - Organization and technology of artificial insemination of farm animals in Ukraine; - Diagnosis of pregnancy; - Physiology of pregnancy; - Abortion; - Diseases of pregnant females; - Physiology of childbirth; - Pathology of childbirth; - Physiological features of newborns and their diseases; - Physiology of the postpartum period; - Pathology of the postpartum period; - Physiology of the breast; - Mastitis; - Infertility of animals. **Topics of laboratory classes:** - Instruction on safety, biosafety, bioethics and academic integrity; - Morphophysiological characteristics of the genitals of female males of different species; - Methods and techniques for obtaining sperm and assessing its quality; - Identification of sexual hunting and the optimal time for the introduction of sperm;

	- Preparation of sperm for injection. Doses of sperm. Methods of sperm introduction by artificial insemination; - Methods of diagnosis of pregnancy and its timing; - Development and position of the fetus in the uterus during different periods of pregnancy, determining its age; - Origin, development and functions of amniotic membranes. Placentogenesis and species features of the placenta. Provisional organs and features of blood circulation in the fetus; - Methods of obstetric research; - Indications and basic rules of obstetrics; - Obstetric instruments; - Some cases of obstetrics; - Exercises on the phantom to provide obstetrics; - Diagnosis of manure retention and treatment of animals; - Assessment of newborn development; - Methods of diagnosis and treatment of diseases of newborns; - Methods and tools for the introduction of drugs into the uterus and vagina; - Methods and tools for pathogenetic therapy for obstetric and gynecological diseases; - Diagnosis and treatment of postpartum subinvolution, metritis, addiction, paresis. – - Methods of breast examination, diagnosis and treatment of mastitis.
Literature recommended	1. Ветеринарне акушерство, гінекологія та біотехнологія відтворення тварин з основами андрології / В.А. Яблонський, С.П. Хомин, Г.М. Калиновський та ін.: За ред. В.А. Яблонського, С.П. Хомина: Підручник.− Вінниця: Нова Книга, 2006.− 592 с. 2. Manual of Equine Reproduction /S. Brinsko, T.Blanchard, D. Varner. – Mosby, 2011. – 336 pp. 3. Відтворення сільськогосподарських тварин: навчальний посібник // Г.Г. Харута, М.В. Вельбівець, С.С. Волков та ін. – Біла Церква: БНАУ, 2011. – 328 с. 4. Акушерство, гінекологія та штучне осіменіння сільськогосподарських тварин: навчальний посібник / Г.Г. Харута, С.С. Волков, І.М. Плахотнюк та ін. – К.: Аграрна освіта, 2013. – 445 с. 5. Фізіологія та патологія розмноження коней: Навчальний посібник / за заг. ред.. А.В. Березовського та М.І. Харенка. − К.: ДІА, 2014. − 440 с.
Language of instruction	Ukrainian

The structure of the discipline by type of occupation

A lectures	B seminars	C Self-education	D laboratory	E non-clinical with animals, models	clinical with animals	G other	H total

46	10	148	34	36	26		300

Date of the last modification of the program	28.08.2019 p.

Name of the university: Bila Tserkva National Agrarian University	
Name of the faculty: Faculty of Veterinary Medicine	
Subject	**GENERAL AND SPECIAL SURGERY OF LARGE ANIMALS**
Teachers	Mykhailo Rublenko, doctor habilitated, DVM (guarantor); Mykola Ilnitsky, doctor habilitated, DVM; Sergey Rublenko, doctor habilitated, DVM; Volodymyr Andriyets, PhD, DVM; Andriy Yaremchuk, PhD, DVM
Forms of study: Lectures / practical Volume of study loading: EKTS credits - 8 (240 hours); Weekly loading: Student attendance: required	
Course and semester in which the discipline is planned to be studied	3-4 year, 6-8 semester
Prerequisites for studying the discipline	"Animal Anatomy", "Cytology, Histology, Embryology", "Animal Physiology", "Pathological Physiology", "Anesthesiology and Operative Surgery", "Veterinary Microbiology", "Clinical Diagnosis and Diagnostic Imaging", "Pharmacology and Pharmacotherapy"
Methods of knowledge control	Test, medical history and defense of course paper, exam
Learning outcomes and competencies	***Students should know:*** clinical pathophysiology of general and local reactions of animals to injuries, nosological forms of surgical infection; features of regeneration of different types of tissues; pathogenetic bases of rational application of pharmacological, physical and surgical methods of treatment of surgical pathology in animals taking into account specific features. ***Students must be able to:*** have procedures for biosafety, asepsis and antiseptics, means and methods of emergency surgery and intensive care; rational anesthesia and postoperative analgesia; diagnostic algorithms and treatment protocols on the principles of bioethics for injuries, their complications and surgical pathology in different anatomical and topographic areas of horses, ruminants and pigs.
Description of the discipline	
The base of the discipline	Classrooms, Museum of Surgical Pathology and Phantom Class, Laboratory of the Department, Interdepartmental Clinics and Farms of the University's Research Farm, Public and Private Clinics for Companion Animals, Farms of Agricultural Enterprises
Topics of classroom lessons	Lecture topics: - Injuries and injuries in animals: classification and prevention. - The body's response to injury - shock, local and systemic inflammatory reaction. - Closed and open mechanical injuries - bruises, hematomas, wounds.

	- Surgical infection (nosological forms, pathogenesis, antibiotic resistance, systemic inflammatory reaction syndrome). - Diseases of bones and joints. - Diseases of muscles, tendons, tendon sheaths and bursae in horses, ruminants and pigs. - Veterinary orthopedics of horses, ruminants and pigs - Eye diseases in horses, ruminants and pigs - Surgical diseases in the head, neck, withers and thoracic cavity, abdominal wall and cavity in horses, ruminants and pigs
	Topics of practical and self-education classes: - Organization of surgical care (safety procedures, biosafety when working with surgically ill animals. Curation and medical history). - Clinical and visual methods of examination of a surgically ill animal. Postoperative care. Development of prevention systems for various types of injuries based on situational tasks - Research and treatment of animals with closed mechanical injuries (bruise, hematoma lymphoextravazate). - Diagnostic algorithms and treatment protocols for animals in shock. - Methods of pharmacological and physiotherapeutic regulation of inflammatory processes. - Diagnosis and treatment of animals with wounds (symptoms, hemostasis, methods of clinical and instrumental control, drainage, surgical methods and local pharmacological agents). - Diagnostic algorithms and treatment of surgical soft tissue infection (abscess, phlegmon, purulent wound, sepsis, specific infection in horses, ruminants and pigs - actinomycosis, actinobacteriosis, botryomycosis, tetanus) - Diagnostic algorithms, conservative and surgical methods of treatment of bone fractures in different species of animals. - Diagnostic algorithms and treatment of joint diseases (closed and open mechanical injuries, aseptic inflammatory processes, septic inflammatory processes - purulent arthritis, granulomatous arthritis, rheumatoid arthritis, degenerative-dystrophic processes) - Diagnostic algorithms and treatment of diseases of muscles (myositis), tendons (sprains and tears, wounds, aseptic and purulent tendinitis), tendon sheaths and bursae. - Veterinary orthopedics of horses, ruminants and pigs (biomechanics of the musculoskeletal system, methods of diagnosis of lameness, orthopedic clearing of hooves, diagnosis and treatment of subdermatitis, ulcerative and phlegmonous processes in the fingers, diagnostic algorithms and treatment protocols for diseases of the breast). - Eye diseases (anatomy and physiology of the eye, studies of animals with eye lesions, diagnostic algorithms and treatment protocols of eyelid diseases (eyelid wounds, eyelid inflammation, torsion and inversion of the eyelids, lowering of the upper eyelid), conjunctivitis and keratitis, keratoconjunctivitis, purulent retrobulbar phlegmon, eyeball prolapse, retinal diseases).

	- Diagnostic algorithms and treatment protocols of diseases in the head, occiput, neck and withers, chest wall and lower back, wall and abdominal organs in horses, ruminants, pigs.
Language of instruction	Ukrainian

The structure of the discipline by type of occupation

A Lectures	B Seminars	C Self-education	D Practical	E Non clinical	FX Clinical

Date of the last modification of the program	28.08.2019.

Name of the university: Bila Tserkva National Agrarian University	
Name of the faculty: Faculty of Veterinary Medicine	
Subject	**MEDICINE OF INTERNAL DISEASES OF LARGE ANIMALS**
Teachers	Volodymyr Sakhnyuk, Dr. hab., DVM (guarantor); Volodymyr Golovakha, Dr. hab., DVM; Leonid Bogatko, PhD, DVM; Victor Garkaviy, PhD, DVM; Mykhailo Tyshkivskyi, PhD, DVM; Olexander Chub, PhD, DVM
Forms of study: Lectures / practical **Volume of study load:** ECTS credits - 11 (330 hours) **Form of study:** full-time **Weekly loading:** 4 (2/2) **Student attendance:** obligatory	
Course and semester in which the discipline is planned to be studied	3-5 year, 6-9 semester
Prerequisites for studying the discipline	Animal anatomy, Cytology, histology, embryology, Veterinary microbiology and immunology, Veterinary clinical biochemistry, Animal nutrition, Animal physiology, Pathological physiology, Pharmacology and Pharmacotherapy, Propaedeutics and diagnostic imaging
Methods of knowledge control	Test, defense of medical history , exam
Learning outcomes and competencies	Students must know: types of therapy, treatment and prevention methods in large animals internal diseases, etiology and mechanisms of internal diseases in large animals, clinical laboratory methods and diagnostic imaging in large animals internal diseases; analysis and interpretation of laboratory results; pharmacological remedies and pathogenetic bases of treatment in animals internal pathology taking into account their species, age and physiological features and anatomical and topographic localization.

	Be able to: have techniques and means of emergency medical care and intensive care in animals' internal diseases, to have pharmacological and instrumental treatment methods, diagnostic algorithms and treatment protocols, their complications in large animals' internal and metabolic pathologies
Description of the discipline	
The base of the discipline	Classrooms, Laboratory of Clinical Biochemistry of the Department of Therapy and Clinical Diagnostics, interdepartmental laboratory of the Faculty of Veterinary Medicine, educational veterinary clinic (VTH), public and private clinics and farms.
Topics of classroom lessons	Topic 1. Organization of veterinary care for animals with internal and metabolic pathologies (safety procedures, biosafety approaches with sick animals. Care and medical history). Topic 2. Clinical examination methods and diagnostic imaging in sick animals. Familiarization of preventive animals' diseases systems in internal pathology and carrying out medical examination on the basis of situational tasks. Topic 3. Study and treatment of animals with cardiovascular diseases. Theoretical study some diseases. Topic 4. Diagnostic algorithms and treatment protocols for respiratory diseases. Topic 5. Reasoning for the use of ethiotropic and pathogenetic therapy methods for lung diseases. Topic 6. Diagnosis and treatment in digestive diseases in cattle, horses and pigs. Treatment protocols. Topic 7. Diagnosis and treatment the horses with colic syndrome. Gastric sounding technique, methods of medical care. Topic 8. Diagnostic algorithms and treatment in liver diseases (hepatitis, hepatodystrophy, cirrhosis). Topic 9. Diagnostic algorithms and treatment methods in urinary diseases (glomerulonephritis, pyelonephritis, nephrotic syndrome, urocystitis). Topic 10. Diagnostic algorithms and treatment in nervous system diseases (heatstress, meningoencephalitis, brain hyperemia). Topic 11. Diagnostic algorithms and treatment in blood diseases (anemia). Topic 12. Metabolic diseases in animals: etiology, diagnostic algorithms (biochemical blood, urine, milk examinations), treatment and prevention. Topic 13. Endocrine diseases: the main causes, diagnostic procedures, treatment protocols, prevention methods. Topic 14. Features of the disease in young stock. Classification, immunodeficiency: etiology, diagnosis, treatment, prevention. Topic 15. Diagnostic algorithms and treatment protocols for gastrointestinal diseases of newborn young stock. Organizational and special prevention methods. Topic 16. Metabolic diseases in young stock. Methods of diagnosis, treatment and prevention.

Recommended literature:	1. Vnutrishni khvoroby tvaryn: pidruchnyk / [Levchenko V.I., Kondrakhin I.P., Vlizlo V.V. ta in.]; za red. V.I.Levchenka. – Bila Tserkva, 2012. – Ch. 1. – 528 s. 2. Vnutrishni khvoroby tvaryn: pidruchnyk / [LevchenkoV.I., Kondrakhin I.P., Vlizlo V.V. ta in.]; za red. V.I.Levchenka. – Bila Tserkva, 2015. – Ch. 2. – 610 s. 3. Hodivlia silskohospodarskykh tvaryn: pidruchnyk / [Ibatullin I.I., Melnychuk D.O., Bohdanov H.O. ta in.]; za red. akademika NAAN Ukrainy I.I. Ibatullina. – Vinnytsia: Nova knyha, 2007. – 616 s. 4. Veterynarna klinichna biokhimiia: pidruchnyk /V.I. Levchenko ta in.; za red. V.I. Levchenka i V.V. Vlizla. 2-he vyd., pererob ta dop. Bila Tserkva, 2019. – 416 s. 5. Klinichna diahnostyka vnutrishnikh khvorob tvaryn / V.I. Levchenko, V.V. Vlizlo, I.P. Kondrakhin [ta in.]; Za red. V.I. Levchenka ta V.M. Bezukha – Bila Tserkva, 2017. – 544 s. 6. Bolezny loshadei. Sovremenye metody lechenyia /Per. s anhlyiskoho. – M.; OOO «Akvaryum-Prynt, 2007. – 1008 s. 7. Veterinary medicine. A textbook diseases cattle, sheep, pigs, goats and horses / Gts edition / Smit B.P. – 2002. 8. Textbook of internal medicine. / Stefen J. Etinger, Edvard C. Feldman. – 2005.
Language of teaching	Ukrainian

The structure of the discipline by type of occupation

A lectures	B seminars	C Self-education	D laboratory	E non-clinical with animals, models	F Clinical with animals	G other	H total
68	8	140	-	64	50	-	330

Date of the last modification of the program	28.08.2020

Name of the university: Bila Tserkva National Agrarian University	
Name of the faculty: Faculty of Veterinary Medicine	
Subject	**SURGICAL DISEASES OF SMALL PETS WITH ANESTHESIOLOGY AND RESUSCITATION**
Teachers	Mykhailo Rublenko, doctor habilitated, DVM (guarantor); Sergey Rublenko, doctor habilitated, DVM, Nikolay Ilnitsky, doctor habilitated, DVM, Vasily Koziy, doctor habilitated, DVM, Vladimir Andriyets, PhD, DVM
Forms of study: Lectures / practical **Volume of study loading: ECTS-6 credits (180 hours);** **Weekly loading: 6 hours** **Student attendance: required**	

Course and semester in which the discipline is planned to be studied	6th year, 11-12 semester
Prerequisites for studying the discipline	"Animal Anatomy", "Cytology, Histology, Embryology", "Animal Physiology", "Pathological Physiology", "Veterinary Microbiology", "Clinical Diagnostics and Diagnostic Imaging", "Pharmacology and Pharmacotherapy", "Anesthesiology and Operative Surgery"
Methods of knowledge control	Exam
Learning outcomes and competencies	Students must know the basics and clinical criteria of critical conditions of the cardiovascular, respiratory and urinary systems, the features of anesthesia for their occurrence; to monitor vital systems of dogs and cats in critical conditions using visualized diagnostic criteria; know and be able to form programs of anesthesiological support according to individual indicators of critical condition; know and be able to form protocols of infusion therapy according to individual indicators of critical condition; have diagnostic criteria and treatment algorithms for the most common diseases of small pets.
Description of the discipline	
The base of the discipline	Classrooms, Museum of Surgical Pathology and Laboratory of the Department, Clinic of Small Animals FVM BNAU, public and private clinics of small animals
Topics of classroom lessons	**Lectures** • • Immune system dysfunction and its correction in surgical pathology in dogs and cats • • Pathology of the hemostasis system in small pets • • Resuscitation and intensive care in small animals Cancer in small pets • • Diseases of the head in small pets • • Eye diseases in small pets • • Abdominal pathology in small pets
	Practical • Autoimmune diseases. Allergies. Post-traumatic immunodeficiency. • Diagnostic algorithms for coagulopathies • DIC syndrome. • General principles for the study of critically ill patients. Development of resuscitation equipment. Basic principles of intensive care. Mastering the technique of resuscitation. • Emergencies of the respiratory, cardiovascular and urinary systems • Anesthesiological support of cancer animals. Methods of anesthesia and analgesia. • X-ray diagnosis and interpretation of radiographs of cancer patients • Diagnostic algorithms for palliative and surgical methods of treatment of animals with tumors • Features of anesthesia in manipulations in the head. Blockades.

	• Dental diseases • Diseases of the ear, salivary glands • Mastering the technique of performing ophthalmic examinations • Anesthesiological support of ophthalmic manipulations • Diseases of the conjunctiva, cornea, iris, retina and light refractive media • Instrumental diagnosis of abdominal pathology • Anesthesiological support of abdominal surgical interventions • • Surgical diseases of the digestive system
Recommended Books:	1. Комп'ютеризовані ситуаційні задачі з «Оперативної хірургії, топографічної анатомії та анестезіології»: навчальний посібник / М.П. Чорнозуб, В.І. Козій, О.В. Ємельяненко, Л.А. Тихонюк. – Біла Церква, 2017. – 44 с. 2. Комп'ютеризовані ситуаційні задачі з ветеринарної хірургії: науково-методичний посібник для самостійної роботи студентів факультету ветеринарної медицини / М.В. Рубленко, В.М. Власенко, М.Г. Ільніцький [та ін.]. – Біла Церква, 2017. – 91 с. 3. Рубленко С.В. Анестезія свійських тварин та методи її контролю: методичні рекомендації / С.В. Рубленко. − Біла Церква, 2009. − 56 с. 4. Анестезіологічне забезпечення тварин залежно від їх віку та типу больової реакції: методичні рекомендації / М.В. Рубленко, С.В. Рубленко, Б.В. Пирин, Р.Г. Романенко. − Біла Церква, 2013. − 66 с. 5. Рубленко С.В. Механізми больової реакції та їх корекція у тварин: науково-методичні рекомендації / С.В. Рубленко. − Біла Церква, 2014. − 30 с. 6. Болезни ушей собак и кошек. Клинические случаи. / Родригес П.// Цветной атлас. Аквариум, 2019. – 108 с. 7. Иммунология и инфекционные заболевания собак и кошек. / Гутиэррес М. //Цветной атлас. Аквариум 2019. – 120 с. 8. Мониторинг и интенсивная терапия собак и кошек/Кибри Р., Линклэйтер Э. // Аквариум, 2018. – 650 с. **9.** Color atlas of veterinary ophthalmology.Second edition / Kirk N. Gelatt and Caryn E. Plummer // Ames, Iowa: John Wiley & Sons, Inc., 2017. – 420 p.
Language of teaching	Ukrainian

The structure of the discipline by type of occupation

Subject	A	B	C	D	E	F	G	H
Surgical diseases of small pets with anesthesiology and resuscitation	14	4	48			24		90 (3 credits)

Date of the last modification of the program	28.08.2019.

Name of the university: Bila Tserkva National Agrarian University	
Name of the faculty: Faculty of Veterinary Medicine	
Subjects	**TRAUMATOLOGY AND ORTHOPEDICS OF DOGS AND CATS**
Teachers	Mykhailo Rublenko, doctor habilitated, DVM (guarantor); Volodymyr Andriyets, PhD, DVM
Forms of study: Lectures / practical **Volume of study loading: ECTS-8 credits (240 hours);** **Weekly loading: 8 hours** **Student attendance: required**	
Course and semester in which the discipline is planned to be studied	6th year, 11-12 semester
Prerequisites for studying the discipline	"Animal Anatomy", "Cytology, Histology, Embryology", "Animal Physiology", "Pathological Physiology", "Veterinary Microbiology", "Propaedeutics and Diagnostic Imaging", "Pharmacology and Pharmacotherapy", "Anesthesiology and Operative Surgery", and special surgery "
Methods of knowledge control	Exam
Learning outcomes and competencies	The result of studying the discipline is the acquisition by students of knowledge about the pathogenesis and diagnostic algorithms of traumatic illness and its complications; molecular biological mechanisms of reparative osteogenesis; principles of anesthesiological support in traumatology and orthopedics; pathogenetic bases of molecular-biological mechanisms of systemic lesions of the musculoskeletal system Ability and possibility to make decisions on resuscitation measures in injured animals with adequate provision of anesthetized animals, to conduct typical methods of osteosynthesis, to form clinical and visual diagnostic algorithms for various nosological forms of orthopedic pathology
Description of the discipline	
The base of the discipline	Classrooms, Museum of Surgical Pathology and Laboratory of the Department, Small Animal Clinic of FVM BNAU, public and private small animal clinics
Topics of classroom classes	Lecture topics: – Injuries in small pets (nosological features of injuries; epidemiology and prevention of injuries; traumatic illness, post-traumatic complications. – Molecular biological mechanisms and clinical aspects of reparative regeneration. Fundamentals of transplantation (cell technology, use of PRP, PRF) – Methods and means of diagnosis and treatment in traumatology and orthopedics (clinical-morphological, instrumental-radiological, biochemical, conservative-surgical, operative, physical, pharmacological)

	– Systemic lesions of muscles and bone tissue and degenerative-dystrophic diseases of joints (immunoreactive arthropathy and myopathy, osteodystrophy, imperfect bone formation, osteodysplasia, osteochondropathy, arthrosis, systemic inflammatory processes) – Neoplasms and tumor-like diseases of joints and bones (nosological classification, diagnosis and methods of palliative surgery) – Diseases of the thoracic limb (nosological forms by anatomical and topographic localization) – Diseases of the pelvic limb (by anatomical and topographic location) – Injuries and neoplasia of the central nervous system. Hereditary and acquired peripheral neuropathies (neuroanatomy and neurological examination; cerebral traumatic, inflammatory neoplasia, toxicosis-organic, idiopathic diseases; nosological forms of peripheral neuropathies) – Damage to the skull, spine and pelvis (nosological forms by anatomotopographic localization)
	Topics of practical and self-education classes: - Anesthesiological support of animals with trauma and orthopedically ill dogs and cats - Mastering the practical skills of working with tools for operations on bones and joints - Research and management of animals with trauma and orthopedically ill animals - X-ray training for the diagnosis of pathology of joints and bones - Mastering the methods of treatment of post-traumatic complications and traumatic illness - Mastering the practical skills of treatment in traumatology and orthopedics (transport immobilization, bone surgery and osteosynthesis, joint surgery, ruptures of the cruciate ligaments and osteoarthritis, joint dysplasia, dislocations of the knee and elbow joint, osteochostitis, aseptic) - Methods of radiological diagnosis, assessment and treatment of joint dysplasia in dogs - Physical and pharmacological treatments in traumatology and orthopedics Development of diagnostic algorithms and methods of treatment of neoplasms of bones and joints; lesions of the central nervous system and peripheral neuropathies, injuries of the skull, spine and pelvis, diseases of the thoracic limb, diseases of the pelvic limb
Recommended literature:	1. ДенниХ. Ортопедия собак и кошек / Х. Денни, С. Баттервоф. – Аквариум-Принт, 2007. – 622 с. 2. Шебиц Х. Оперативнаяхирургиясобак и кошек / Х. Шебиц, В. Брасс. – Аквариум: Москва,1999. – 512 с. 3. Використання композитних матеріалів за переломів трубчастих кісток у тварин: науково-методичний посібник /

	М.В. Рубленко, В.Г. Андрієць, С.А. Семеняк та ін. – Біла Церква 2015. – 86 с. 4. Оперативна хірургія: практикум / Д.В. Сарбаш, М.Г. Ільніцький, О.В. Кантемир, П.О. Заїка, Д.В. Слюсаренко.– Х.: Стиль-Іздат, 2017. – 218 с. 5. Оперативна хірургія, анестезіологія і топографічна анатомія: підручник / Власенко В.М., Тихонюк Л.А., Рубленко М.В. – Біла Церква. 2006. – 544с. 6. Atlas of Small Animal Wound Management and Reconstructive Surgery / Michael M. Pavletic // Fourth edition. Hoboken, NJ: Wiley, 2018. – 860 p. 7. Current TechniquesIn Small Animal Surgery5th Edition/M. Joseph Bojrab / byTentonNewMedia. – 2014. – 1156 p. 8. Анестезія та добробут тварин. Карін Портьє (VetAgro Sup), Рубленко С.В., Андрієць В.Г., Рубленко М.В., Ільніцький М.Г., Власенко В.М. – БілаЦерква. – 2019.54 с.
Language of instruction	Ukrainian

The structure of the discipline by type of occupation

Subject	A	B	C	D	E	F	G	H
Traumatology and orthopedics of dogs and cats	16	8	86		10	30		150 (5 credits)

Date of the last modification of the program	28.08.2019.

Name of the university: Bila Tserkva National Agrarian University	
Name of the faculty: Faculty of Veterinary Medicine	
Subject	**INTERNAL DISEASES OF SMALL ANIMALS**
Teachers	Volodymyr Golovakha Prof. Hab., DVM; Oksana Piddubnyak, PhD, DVM; Andrii Kharchenko, PhD, DVM
Forms of study: Lectures / practical **Volume of study load:** ECTS credits - 5 (150 hours) **Form of study:** full-time **Weekly loading:** 3 (1/2) **Student attendance:** obligatory	
Course and semester in which the discipline is planned to be studied	5 year, 10 semester
Prerequisites for studying the discipline	Animal anatomy, Cytology, histology, embryology, Animal physiology, Pathological physiology, Pharmacology and Pharmacotherapy, Propaedeutics and diagnostic imaging
Methods of knowledge control	Exam

Learning outcomes and competencies	Students must know: anatomical and physiological dogs and cats features, their maintenance and feeding; features of pets' clinical research methods; theoretical training in etiopathogenesis and treatment of internal diseases; methods of laboratory tests and special methods for early diagnosis and the results interpretation; modern drugs of various pharmacological directions; maintaining veterinary documentation. Be able to: have methods and ways of emergency medical care and intensive care for internal diseases of small animals; have pharmacological and instrumental treatment methods in companion animals internal pathology; to develop diagnostic algorithms and treatment protocols for internal diseases of small animals and their complications.
Description of the discipline	
The base of the discipline	Classrooms, educational veterinary clinic (VTH), Laboratory of Clinical Biochemistry of the Department of Therapy and Clinical Diagnostics, interdepartmental laboratory of the Faculty of Veterinary Medicine, public and private pets' clinics
Topics of classroom lessons	Topic 1. Cardiovascular system diseases (pericarditis, myocarditis, myocardiopathy, myocardial infarction. Hypertension, endocarditis, heart disease. Congenital heart disease. Prevalence, symptoms, diagnosis and treatment of chronic cardiovascular failure. Topic 2. Respiratory system diseases: the nasal cavity and paranasal sinuses diseases. Rhinitis, laryngeal edema, laryngitis, tracheitis. Cat bronchial asthma, bronchopneumonia in dogs and cats, pulmonary edema, pulmonary emphysema. Topic 3. Digestive system diseases: the oral cavity patologies, salivary glands, pharynx, esophagus, gastric diseases: acute and chronic gastritis, gastric ulcer, gastric torsion. Intestinal diseases: histiocytic ulcerative colitis, chemo- and coprostasis, proctitis, paraanal sinusitis. Hepatitis, chronic degenerative hepatopathy. Steroid hepatopathy, lipidosis and liver obesity. Basic principles of treatment the liver failure in dogs. Topic 4. Liver and pancreas diseases: cholelithiasis, cholecystitis. Acute and chronic pancreatitis, pancreas atrophy. Topic 5. Kidney and urinary tract diseases: pathology syndromes of the renal system, acute and chronic renal failure. Pyelonephritis, glomerulopathy, glomerulonephritis. Renal amyloidosis, nephrotic syndrome. Polycystic kidney disease. Topic 6. Endocrine diseases: hypothyroidism in dogs and cats. Diabetes mellitus and diabetes insipidus in dogs and cats. Cushing's syndrome; hypocorticism in dogs and cats.
Recommended literature:	1. Vnutrishni khvoroby tvaryn / [V.I. Levchenko, I.P. Kondrakhin, V.V. Vlizlo, V.I. Holovakha ta in.]; za red. V.I. Levchenka. − Bila Tserkva, 2012. − Ch.1. − 528 s. 2. Uyllard Maikl D. Laboratornaia dyahnostyka v klynyke melkykh domashnykh zhyvotnыkh / Uyllard Maikl D., Tverden Harold, Tornvald Hrant H. – M.: OOO "Akvarium Buk", 2004. – 432 s. 3. Nymand Khans H. Bolezny sobak. Praktycheskoe rukovodstvo dlia veterynarnыkh vrachei (orhanyzatsyia

	veterynarnoi klynyky, obsledovanye, dyahnostyka zabolevanyi, lechenye) [Perev. s nem., 2-e yzdanye] / Khans H. Nymand, Peter F. Suter. – M.: OOO «Akvaryum Prynt», 2004. – 816 s.
Language of teaching	Ukrainian

The structure of the discipline by type of occupation

A lectures	B seminars	C Self-education	D laboratory	E non-clinical with animals, models	F Clinical with animals	G other	H total
16	6	86	4	10	28	-	150

Date of the last modification of the program	28.08.2020

Name of the university: Bila Tserkva National Agrarian University	
Name of the faculty: Faculty of Veterinary Medicine	
Subject	**REPRODUCTOLOGY OF SMALL ANIMALS**
Teachers	Svitlana Vlasenko, doctor habilitated, DVM (guarantor); Valery Lototsky, PhD, DVM; Igor Plahotniuk PhD, DVM; Alexander Eroshenko PhD, DVM.
Forms of study: lectures / laboratory **Volume of study loading: ECTS credits - 3 (90 hours);** **Weekly loading: 3 (1/3);** **Student attendance: required**	
Course and semester in which the discipline is planned to be studied	5 year; 10 semester
Prerequisites for studying the discipline	“ Animal Anatomy ”,“ Cytology, Histology, Embryology ”,“ Animal Physiology ”,“ Pathological Physiology ”,“ Veterinary Microbiology ”,“ Clinical Diagnosis and Diagnostic Imaging ”,“ Pharmacology and Pharmacotherapy ”,“ Veterinary Clinical Biochemistry ”,“ Aste operative surgery ”,“ Obstetrics and biotechnology of reproduction with basics of andrology ”.
Methods of knowledge control	Test
Learning outcomes and competencies	Students must know: - features of reproductive function in females of small animals; - biotechnology of reproduction of small animals; - etiological factors and pathogenesis of fertility disorders in females and males of small animals; - methods of control of reproductive function in small animals; be able: - get ejaculate from dogs and evaluate sperm;

	- determine the optimal time for the introduction of sperm to bitches using a vaginal swab; - to carry out artificial insemination of bitches; - diagnose pregnancy by ultrasound; - perform caesarean section in females of small animals; - perform ovariohysterectomy; - diagnose obstetric, gynecological, andrological diseases and treat sick animals; – - apply hormonal methods to regulate reproductive function in females of small animals.
Description of the discipline	
The base of the discipline	Classrooms and laboratory of artificial insemination of the department, clinic of small animals and exotic animals, public and private clinics for companion animals.
Topics of classroom classes	**Lecture topics:** - Physiology and features of regulation of sexual cycling of bitches and cats; - Physiology and biotechnology of insemination of females of small animals; - Obstetric and gynecological diseases in female small animals; - Andrological diseases of dogs and cats; - Pharmacological control of reproduction of dogs and cats. \ Topics of laboratory classes: - Methods of preparation and interpretation of the results of vaginal swabs; - Methods of obtaining sperm from dogs; - Methods of artificial insemination of bitches; - Ultrasound diagnosis of pregnancy in bitches and cats; - Methods of abortion in bitches and cats; - Pathology of pregnancy; - Obstetric examination during childbirth and rules of obstetrics; - Cesarean section in females of small animals; - Artificial feeding of the offspring; - Diagnosis and treatment of postpartum eclampsia, metritis, sapremium. - Gynecological diseases in females of small animals; - Pathology of the breast; - Andrological diseases.
Literature recommended	1. Фізіологія та патофізіологія розмноження дрібних тварин: Навчальний посібник / А.В. Березовський, М.І. Харенко, С.П. Хомин. – Житомир, 2017. – 392 с. 2. Руководство по репродукции и неонатологии собак и кошек: Пер с англ. / под. ред.. Дж Симпсон, Г. Ингланда, М. Харви. – М.: Софион. – 2005. – 280 с. 3. Алэн В.Э. Полный курс акушерства и гинекологии собак (Второе издание, испр. и доп. Гэри К.)/ Пер. с англ. О. Суворов. – М.: Аквариум ЛТД, 2002. – 448 с. 4. Veterinary Reproduction & Obstetrics 10th Edition / David Noakes, Timothy Parkinson, Gary. – England.Saunders Ltd, 2019. – 848 pp.

	5. Болезни кошек и собак: пер. с англ../ Ларри Патрик Тилл, Френсис Смит; под. ред. Е.П. Коперника. – М. : ГЭОТФЗ-медиа, 2010. – 848 с. 6. Ингленд Г. Акушерство и гинекология собак. / Г. Игленд. – К.: Аквариум-Принт, 2012. – 134 с.
Language of instruction	Ukrainian

The structure of the discipline by type of occupation

A lectures	B seminars	C Self-education	D laboratory	E non-clinical with animals, models	F Clinical with animals	G other	H total
16	2	56	4	6	6		90

Date of the last modification of the program	28.08.2019 p.

Name of the university: Bila Tserkva National Agrarian University	
Name of the faculty: Faculty of Veterinary Medicine	
Subject	**RUMINANTS DISEASES**
Teachers	Volodymyr Sakhnyuk, Dr. hab., DVM (guarantor); Olexander Chub, PhD, DVM; Igor Plakhotnyuk, PhD, DVM; Sergii Bilyk, PhD, DVM; Anatolii Antipov, PhD, DVM; Yaremchuk Andrii, PhD, DVM
Forms of study: Lectures / practical **Volume of study load:** ECTS credits – 10 (300 hours) **Form of study:** full-time **Weekly loading:** 6 (2/4) **Student attendance:** obligatory	
Course and semester in which the discipline is planned to be studied	6 year, 11-12 semester
Prerequisites for studying the discipline	Animal anatomy, Cytology, histology, embryology, Veterinary microbiology and immunology, Veterinary clinical biochemistry, Animal nutrition, Animal physiology, Pathological physiology, Pharmacology and Pharmacotherapy, Propaedeutics and diagnostic imaging, Herd health management, Animal production, including breeding and husbandry, Obstetrics and biotechnology of animal reproduction with basics of andrology, Medicine of internal diseases of large animals
Methods of knowledge control	Test, exam
Learning outcomes and competencies	Students must know: types and methods of therapy for the treatment of ruminant, methods of prevention the internal

	ruminant diseases, etiology and mechanisms of development of internal, obstetric, surgical, infectious and invasive diseases, the ruminants necropsy, clinical laboratory methods and diagnostic imaging of ruminants; analysis and interpretation of laboratory results; pharmacological remedy and pathogenetic treatment bases of internal pathology in ruminants taking into account species, age and physiological features of its course and anatomical and topographic localization. - modern methods and drugs for veterinary and sanitary treatments (disinfection, deratization, disinsection); rules and especially infectious animals; - methods of diagnosis of infectious diseases; - methods of farms epidemiological examination, selection and transfer the pathological material, diagnostic tests; - based on the results of diagnostic studies to develop anti-epizootic measures. Be able to: have methods and means of emergency medical care and intensive care for ruminants diseases of various etiologies, to have pharmacological and instrumental methods of ruminants treatment; diagnostic algorithms and treatment protocols of animals diseased, their complications. - to conduct an epidemiological examination of the farm and draw up an act; to conduct allergic testing of animals, to take blood samples from different species of animals for serological tests; draw up supporting documents for the material; to organize and carry out treatment and prophylactic measures in case of infectious diseases in animals; draw up the acts on the work performed: diagnostic tests, preventive and compulsory vaccinations, disinfection, deratization, disinsection and other anti-epizootic measures.
Description of the discipline	
The base of the discipline	Classrooms, interdepartmental laboratory of the Faculty of Veterinary Medicine, educational veterinary clinic (VTH), public and private farms.
Topics of classroom lessons	- Organization of medical care in ruminants' internal, obstetric, surgical, infectious, invasive and metabolic pathology (safety procedures, biosafety when working with sick ruminants). - Clinical examination and diagnostic imaging in a sick animal. Development of prevention systems in ruminant internal diseases and carrying out medical examination on the basis of situational tasks. - Examination and treatment of cattle with cardiovascular system diseases (traumatic pericarditis, myocardial infarction, and their theoretical study. - Diagnostic algorithms and treatment protocols for respiratory diseases in young ruminants. - Diagnosis and treatment of pancreas diseases (rumen dystony, acute tympany, rumen acidosis and alkalosis, abomasum displacement) in cattle. Treatment protocols. - Diagnostic algorithms and treatment of liver diseases in cattle, sheep and goats (hepatitis, hepatodystrophy, cirrhosis)

	- Metabolic diseases in animals: etiology, diagnostic algorithms (biochemical blood, urine, milk, examination), treatment and prevention. Multiple internal pathology. - Gynecological diseases. - Mechanisms of pathogenetic connection of obstetric and gynecological diseases. - Differential diagnosis of gynecological diseases by ultrasound and clinical methods. - Modern means and methods of gynecological diseases treatment in cows. - Emergent and transboundary infections. - Prion infections (Spongiform encephalopathy of cattle. Sheep scrapes). - Infectious nodular dermatitis. Blutang. - Contagious eczema of sheep and goats. Adenomatosis of sheep and goats. - Vesicular stomatitis. - Paravaccine. - Epizootic situation in Ukraine due to parasitism in ruminants. Environmental aspects of the problem. - Zoonotic invasions in cattle and sheep. - Development of a pathological process in cattle with endo- and ectoparasitosis. - Prevention of ruminants' invasive diseases under different technological conditions. Modern views on the optimization of the problem of combating invasive diseases of small ruminants and cattle. Food security of the livestock industry in the event of parasitic distress. - A comprehensive approach in the diagnosis of ruminant parasites. - Lifelong and postmortem quantitative methods of parasitological research and evaluation of the effectiveness of antiparasitic measures. - Dynamics of clinical manifestation of ruminant fasciolosis. Substantiation of special diagnostics and control measures. - Diagnosis and differential diagnosis of dicroceliosis and eurythremosis of ruminants. Etiotropic and pathogenetic therapy. Prevention. - Monitoring of the epizootic situation regarding bovine cysticercosis using the modern methods. Morphobiological substantiation of diagnostics and control measures. Cysticercosis of the serous integuments of the internal organs and subcutaneous tissue in ruminants: the dynamics of the pathological process and clinical signs, lifelong and postmortem diagnosis, prevention. - Prevalence of anoplocephalidosis invasion in ruminants. Morpho-biological substantiation of diagnostics and control measures. - Neoascarosis in calves, strongylatosis of the digestive tract: features of epizootology, dynamics of pathogenetic changes in the infested macroorganism, a comprehensive approach to diagnosis, therapy and prevention.

	- Sarcoptoidosis of ruminants and aphids, their manifestation, differential diagnosis, a comprehensive approach to treatment and prevention. Psoroptoidosis in cattle and small ruminants: diagnostics, seasonal, breed and technological features of control measures. Thrombidiformiacarosis in ruminants: epizootic situation, manifestation, modern approaches in the development and organization of control measures. - Biosafety for necropsy. General principles of pathological and anatomical autopsy in ruminants. Preparation of documents for the results of the work. - Pathological and differential diagnosis of acute and chronic infectious diseases. - Pathomorphological diagnosis of diseases of viral etiology. - Pathomorphology for metabolic disorders. - General principles of pathological and anatomical autopsy of ruminants. Preparation of documents for the results of the work. - Biosafety. - Sequence of stages of pathological and anatomical autopsy in cattle and small ruminant. Testing the technique of dissecting animal carcasses. - Organopathology. - Pathomorphology for diseases of infectious and non-infectious etiology. - Pathomorphology of tumor processes. - Pathological diagnosis in newborn calves, lambs, goats diseases and diseases caused by metabolic disorders.
Recommended literature:	1. Vnutrishni khvoroby tvaryn: pidruchnyk / [Levchenko V.I., Kondrakhin I.P., Vlizlo V.V. ta in.]; za red. V.I.Levchenka. – Bila Tserkva, 2012. – Ch. 1. – 528 s. 2. Vnutrishni khvoroby tvaryn: pidruchnyk / [LevchenkoV.I., Kondrakhin I.P., Vlizlo V.V. ta in.]; za red. V.I.Levchenka. – Bila Tserkva, 2015. – Ch. 2. – 610 s. 3. Hodivlia silskohospodarskykh tvaryn: pidruchnyk / [Ibatullin I.I., Melnychuk D.O., Bohdanov H.O. ta in.]; za red. akademika NAAN Ukrainy I.I. Ibatullina. – Vinnytsia: Nova knyha, 2007. – 616 s. 4. Veterynarna klinichna biokhimiia: pidruchnyk /V.I. Levchenko ta in.; za red. V.I. Levchenka i V.V. Vlizla. 2-he vyd., pererob ta dop. Bila Tserkva, 2019. – 416 s. 5. Klinichna diahnostyka vnutrishnikh khvorob tvaryn / V.I. Levchenko, V.V. Vlizlo, I.P. Kondrakhin [ta in.]; Za red. V.I. Levchenka ta V.M. Bezukha – Bila Tserkva, 2017. – 544 s. 6. Veterinary medicine. A textbook diseases cattle, sheep, pigs, goats and horses/ Gts edition / Smit B.P. – 2002 7. Textbook of internal medicine. / Stefen J. Etinger, Edvard C. Feldman. – 2005.
Language of teaching	Ukrainian

The structure of the discipline by type of occupation

A lectures	B seminars	C Self-education	D laboratory	E non-clinical with	F Clinical with animals	G other	H total

				animals, models			
48	8	156	-	52	36	-	300

Date of the last modification of the program	28.08.2020

Subjects	**DISEASES OF PIGS**
Teacher	Bronislav Yarchuk, PhD, DVM; Volodymyr Honcharenko, PhD, DVM; Mykola Chornozub, PhD, DVM; Ihor Plakhotniuk, PhD, DVM; Viktor Harkavyi, PhD, DVM; Ivan Papchenko, PhD, DVM
Course and semester in which you plan to study the discipline	4 - 5 M course, 8 - 9 semester
Faculties whose students are invited to study discipline	Faculty of Veterinary Medicine
List of competences and relevant learning outcomes provided by the discipline	Students must have basic knowledge and practical skills in the development and implementation of measures for the diagnosis, treatment and prevention of diseases of infectious and non-communicable etiology, the principles of safe keeping of pigs.
Description of the discipline	
Prerequisites necessary for the study of the discipline	Auditoriums and laboratories of the departments of the faculty, interdepartmental clinics of the faculty and the farm of the research farm of the university, farms of agricultural enterprises.
Maximum number of students who can study simultaneously	10-11 applicants
Classroom topics	**Lecture topics:** 1. Infectious diseases of pigs. - General and specific prevention. - Circovirus infection, influenza, viral transmissible gastroenteritis, reproductive and respiratory syndrome, enzootic pneumonia. 2. Parasitic diseases of pigs. - Features of development and measures to control cestodes of pigs. - Measures to control and prevent nematodes in pigs. - Drugs for the treatment and prevention of arachnoentomoses of pigs. - Diagnosis and measures to control coccidiosis in pigs. 3. Surgical diseases of pigs. - Anesthesiological support of surgical care in pigs. Prevention of technological injuries in pig breeding. Fundamentals of etiotropic and pathogenetic therapy of inflammatory processes in pigs.

	- Etiology, diagnosis, treatment and prevention of diseases of the joints, bones, muscles and tendon-ligamentous apparatus of the extremities in pigs. - Etiology, diagnosis, treatment and prevention of hoof disease in pigs. - Etiology of umbilical and inguinal hernias in pigs and their prevention. 4. Obstetric, gynecological and andrological diseases of pigs. - Modern reproduction technologies. - Organization, technological stages and normative indicators for natural and artificial insemination of pigs. - Causes and assessment of infertility and infertility in pigs. 5. Internal diseases of pigs. - Basics of diagnosis, therapy and prevention of internal diseases of pigs. - Diseases of the digestive system of pigs. - Metabolic diseases of piglets. 6. Pathological anatomy and necropsy of swine diseases. - Pathological changes in anaerobic dysentery, colibacillosis, viral transmissible gastroenteritis, cholieterotoxemia. - Pathological changes in erythema, dysentery, hemophilic polyserositis, hemophilic pleuropneumonia, pasteurization, leptospirosis, tuberculosis. - Pathological changes in enzootic encephalomyelitis, Aujeszky's disease, classical and African plague.
	Practical topics: 1. Infectious diseases of pigs. - Biosafety measures in pig farms. - Aujeszky's disease, enzootic encephalomyelitis, reproductive and respiratory syndrome, viral transmissible gastroenteritis, rotavirus disease, vesicular disease, vesicular exanthema, smallpox, enterovirus enteritis, adenovirus, paramyxovirus. 2. Parasitic diseases of pigs. - Methods of lifelong and postmortem diagnosis of helminthiasis. - Diagnosis, treatment and prevention of teniosis, echinococcosis, asparagus. - Diagnosis, treatment and prevention of ascariasis, trichurosis, esophagostomosis, trichinosis, olulanosis, strongyloidiasis. - Diagnosis, treatment and prevention of arachnosis. 3. Surgical diseases of pigs. - Methods of herniotomy for umbilical and inguinal hernia in pigs. - Methods of castration of boars and boars, cryptorchids and hermaphrodites, pigs, preparation of boar-probe. - Technological operations in piglets - methods of biting and grinding teeth, caudotomy. - Methods of surgical treatment of anomalies of the rectum and anus, rectal prolapse in pigs - Methods of corrective and therapeutic clearing of hooves in pigs 4. Obstetric, gynecological and andrological diseases of pigs.

	- Technological and pharmacological methods of stimulating sexual cycling in pigs. - Methods of pregnancy control and abortion prediction. Causes and preventive measures for low fertility in pigs. - Therapeutic and prophylactic measures for the syndrome of metritis-mastitis-agalactia in sows. - Diagnosis and treatment of metritis, uterine induration, ovarian and fallopian tube diseases in sows. - Methods of correction of reproductive function in boars. Non-communicable diseases of the genitals in boars. 5. Internal diseases of pigs. - Features of medical examination in pig breeding. Methods of drug administration. Anti-nutrients in feed as a cause of non-communicable diseases in pigs. - Therapy and prevention of myocarditis, endocarditis and pneumonia in pigs. - Therapy and prevention of diseases of the mouth, pharynx, esophagus, stomach, intestines and liver. - Therapy and prevention of malnutrition, hypoglycemia, iron deficiency anemia, parakeratosis and D-hypovitaminosis in piglets. 6. Pathological anatomy and necropsy of swine diseases. - Pathological changes in salmonellosis, diplococcal septicemia, streptococcosis. - Pathological changes in reproductive and respiratory syndrome, circovirus infection of pigs. - Pathological changes in stachybotriotoxicosis, fusariotoxicosis, aspergilotoxicosis. - Biosafety, equipment and rules for working with corpse material. - Analysis of pathological and anatomical changes, preparation of pathological and anatomical diagnosis, conclusion and protocol of autopsy of piglets.
Language of instruction	Ukrainian

Name of the university: Bila Tserkva National Agrarian University	
Name of the faculty: Faculty of Veterinary Medicine	
Subjects	**INFECTIOUS DISEASES OF POULTRY**
Teacher	Alexander Dovgal PhD, DVM Andriy Yaremchuk PhD, DVM Mykola Utechenko, PhD, DVM Andriy Melnyk, PhD, DVM; Vitaly Sakara, Master, DVM Lyudmila Solovyova, PhD, DVM
Forms of study: Lectures / practical **Study load: EKTS credits - 10 (300 hours)**	

Weekly load: 6 hours **Student attendance: required**	
Course and semester in which the discipline is planned to be studied	6 M course, 11-12 semester
Prerequisites for studying disciplines	Animal anatomy; Cytology, histology, embryology; Animal physiology; Pathological physiology; Veterinary microbiology; Clinical diagnosis and diagnostic imaging, pharmacology and pharmacotherapy; General and special epizootology. Parasitology and invasive diseases.
Methods of knowledge control	Modular control, credit, exam
Learning outcomes and competencies	**Know:** To know the peculiarities of keeping and technology of poultry breeding of different productive directions; features of methods of clinical research of birds of different species; etiopathogenesis and treatment of internal diseases of birds; methods of laboratory tests for early diagnosis and control of the effectiveness of treatment and prevention measures; modern drugs of various pharmacological directions; management of the organization of treatment-and-prophylactic measures for internal diseases of poultry; maintenance of veterinary documentation; Know the features of the structure of the animal body according to the norms and possible changes in the shape and structure of organs in pathology; To have knowledge of the etiology and pathogenesis of animal diseases, current regulations relating to this type of professional activity, to know the latest methods and techniques of laboratory research; Know the nature and dynamics of physicochemical and biological processes that occur in animals in normal and pathological conditions under the influence of environmental factors, the action of infectious agents, surgical and obstetric and gynecological interventions Have current regulations. Know the features of prevention and treatment of surgical diseases in different parts of the body, its anesthesia in birds, gaining practical skills in performing various surgical manipulations, osteosynthesis, beak correction, endoscopic sex determination, on the principles and procedures of bioethics and biosafety, asepsis and antiseptics. Know the methods of lifelong diagnosis of parasitic diseases of birds and measures to combat them. Know the methods of postmortem diagnosis of parasitic diseases of birds and measures to combat them. **Be able:** Be able to assess the veterinary support for the production of eggs and poultry meat in industrial production, private farms and zoos; clinically examine birds of different species and areas of productivity; diagnose the most common internal diseases of poultry by clinical symptoms; to take blood for biochemical

	research and to receive serum from it; interpret the results of clinical and biochemical studies for early diagnosis of internal pathology and monitoring of treatment and prevention measures; purposeful use of pharmacological agents, combining different methods of their introduction; to give water-soluble medicines through the system "Dosatron"; properly maintain veterinary documentation and reporting. Acquisition by students of basic knowledge on the features of prevention and treatment of infectious diseases in different species of birds. Be able to identify sources of pathogens, invasions, determine the factors and mechanism of their transmission; to provide isolated keeping of sick and suspected animals with infectious or invasive disease; carry out forced vaccinations of animals in disadvantaged and endangered service areas; take measures aimed at preventing the spread of the pathogen and invasion outside the epizootic outbreak and the elimination of the outbreak itself; do not allow people with zoonoses to take care of animals. Be able to operate with the basic concepts of biosafety, biosecurity, have the basics of bioethics; analyze current and current ethical issues in the biotechnology and pharmaceutical industries; analyze the causes of epizootic situations and infectious diseases that appear in recent years. Be able to analyze information, make informed decisions, be able to acquire modern knowledge. Be able to analyze the scientific literature, use modern information resources, Be able to take, preserve, package and send samples of animal, plant and biotechnological origin for research, to conduct veterinary accounting, to prepare reporting documentation. Have a methodology for conducting epizootological, parasitological, chemical-toxicological, radiological, sanitary and hygienic research to diagnose animal diseases of non-communicable, infectious and invasive etiology using instrumental and laboratory methods; analyze the results of the study of biological material; interpret the results of research taking into account the achievements of science and practice. Correctly methodically and technically do necropsy of poultry carcasses of different species. Use necropsy tools. To determine and describe the nature of pathological processes in organs and tissues on the basis of macro- and microscopic changes. Justify the underlying disease, its complications and comorbidities. Correctly and competently draw up a document based on the results of necropsy. During the training practice to independently analyze the epizootic situation directly in farms of different forms of ownership. Be able to practice methods of lifelong and postmortem diagnosis in order to establish the diagnosis.

	Be able to diagnose parasitic diseases of birds. Be able to carry out antiparasitic treatments of sick birds. Be able to make the necessary forms of medicines. Be able to write prescriptions for them and treat sick birds. Be able to develop bioecological measures for the prevention of parasites.
Description of the discipline	
The base of the discipline	Auditoriums, laboratory of the department, museum of pathological anatomy and necropsy hall, interdepartmental clinics and farms of the research farm of the university, farms of agricultural enterprises.
Topics of classes	**Lecture topics:** 1. General veterinary and sanitary measures are aimed at preventing the introduction of the pathogen into the poultry farm 2. Features of diagnosis of infectious diseases of birds. 3. The organization and carrying out of inoculations of a bird against infectious diseases. 4. Tuberculosis of birds. 5. Colibacteriosis. 6. Avian influenza. 7. Nkasl's disease. 8. Marek's disease. 9. Topographic anatomy of birds of different species (features of surgical interventions and operative accesses in different anatomical and topographic areas) 10. Anesthesiological support of surgical interventions in poultry (local and general anesthesia, infusion therapy and resuscitation) 11. Technological operations in intensive poultry farming (beak correction, endoscopic sex determination, copulation) 12. Surgical diseases in intensive poultry farming (splitting, self-eating, subdermatitis, fractures) 13. Injury prevention in industrial poultry. The use of the principles of welfare in poultry for disease prevention and reducing the number of technological operations (analysis of maintenance technology, types of injuries and ways to prevent it) 14. Biosafety. Pathological and anatomical diagnosis of diseases of embryos and young birds with infectious diseases. 15. Pathological and anatomical diagnosis of diseases of the ovaries and metabolic diseases. 16. General approaches to pathological diagnosis of poisoning in poultry, mycoses and mycotoxicosis. 17. Pathological and anatomical diagnosis of bacterial, invasive diseases and pathology of viral etiology. 18. Types of keeping, technology of obtaining eggs and poultry meat and veterinary support and schemes of its cultivation in the conditions of industrial production. 19. Group antigen nonspecific prevention of poultry diseases. 20. Diseases of the respiratory and digestive organs. 21. Metabolic diseases of poultry (alimentary dystrophy, obesity, hepatodystrophy, A-, D-, E- and B-hypovitaminosis of poultry, metabolic disorders). 22. Assessment of the epizootic situation, diagnosis and treatment of trematodes and cestodes of birds 23. Assessment of the epizootic situation regarding avian nematodes, diagnostic, therapeutic and prophylactic measures. 24. Acarosis and entomoses of birds. Prevention. 25. Measures to control protozoan birds.

	Topics of practical classes: 1. Responsibilities of veterinary specialists of poultry farms 2. Causes and ways of spreading infectious diseases of poultry 3. Disinfection 4. Deratization on poultry farms, features of carrying out. 5. Immune system of birds. Immunity and its types. 6. Determination of the intensity of immunity in infectious diseases. 7. Vaccination of poultry 8. Tuberculosis of birds. Intestinal spirochetosis. 9. Pullorosis. Colibacteriosis. Ulcerative enteritis. Salmonellosis. 10. Campylobacteriosis. Pasteurellosis. Necrotic enteritis. 11. Hemophilosis of birds. Ornithobacteriosis. Pseudomonas. Ornithosis. 12. Bird flu. 13. Infectious bronchitis..Infectious laryngotracheitis. Infectious anemia of chickens. 14. Infectious bursal disease..Nkasl disease. Marek's disease. 15. Viral enteritis of geese. Viral hepatitis of ducks. 16. Infectious enteritis of turkeys. Hemorrhagic enteritis of turkeys. 17. Pneumovirus infection. Meningocephaly of turkeys. 18. Rhinotracheitis of turkeys. Rash of turkeys. Arizonaz. 19. Surgical interventions in poultry (practical development of topographic anatomy and surgery of birds) 20. Diagnosis and prevention of surgical diseases in egg production and broiler breeding (development of surgical pathology, asepsis and biosafety in various technological areas of poultry) 21. Stress, aggression, cannibalism, self-injury as the main etiological factors of surgical pathology in modern poultry (anesthesia and prevention of stress and injury during basic technological operations) 22. Diseases of the extremities in birds during intensive rearing (Features of various forms of poultry keeping, compliance with bioethical requirements and prevention of diseases of the extremities in birds) 23. Surgical pathology with traditional, modern (aviary, veranda) and organic technologies of poultry keeping 24. Features of pathological and anatomical autopsy of poultry carcasses. Registration of documentation based on the results of necropsy. 25. Selection of pathological material for microscopy. bacteriological, virological and toxicological studies. 26. Organopathology. 27. Pathomorphology of tumor processes in poultry. 28. Pathomorphology in the absence of protein and essential amino acids. 29. Pathomorphology in non-communicable and infectious pathology. 30. Pathomorphology for poisoning. 31. Features of physiology and clinical research of poultry of different species. Anamnesis. Analysis of keeping and feeding birds. 32. Veterinary documentation in poultry farming. 33. Diseases of avian embryos and their diagnosis.

	34. Embryonic dystrophy. Diseases of avian embryos in violation of the incubation regime. Ovoscopy of hatching eggs. 35. Diseases of the ovaries: a) salpingoperitonitis; b) difficult egg-laying; c) yolk peritonitis. 36. Alimentary dystrophy, white muscle disease, perosis. 37. Uric acid diathesis. 38. Obesity. Hepatodystrophy. 39. Stress. Technological and chemotherapeutic measures for stress prevention in poultry. 40. Epizootic assessment of bird trematodes at the present stage. Diagnosis and control measures. 41. Study of the epizootic situation in cestodes of birds. Diagnosis, treatment and prevention of cestodes of poultry. 42. Assessment of the epizootic situation with regard to avian nematodes, diagnostic methods, means of treatment and prevention. 43. Nematodes of terrestrial and waterfowl. 44. Arachnoses of birds. Methods of diagnosis, treatment and prevention. 45. Bird entomoses, differential diagnosis, control and prevention measures. 46. The structure of the causative agents of avian eimeriosis, biological features, control measures. 47. Diagnosis of protozoa of birds, treatment and prevention measures.
	Topics of independent classes 1. Requirements for poultry farms 2. Causes and ways of spreading infectious diseases of poultry 3. Prevention of infectious diseases of poultry 4. Establishment of farms free from infectious diseases of poultry 5. Choice of disinfectants. 6. Features of disinfection in poultry farms. 7. Features of disinsection in poultry farms. 8. Physical methods of disinfection on poultry farms. 9. Equipment for disinfection in poultry farms. 10. Preparation of premises for disinfection. 11. Chemical methods of disinfection on poultry farms 12. The immune system of birds. 13. Immunity and its types. 14. Stress and its prevention in birds. 15. Methods of research of immunity. 16. The structure of the immune system of birds. 17. Determination of the intensity of immunity in birds. 18. Forecasting and diagnosis of infectious diseases of poultry. 19. Determination of the intensity of immunity in infectious diseases. 20. The use of aerosols for the treatment of sick birds. 21. Vaccination of poultry by injection. Vaccination "in ovo". Vaccination of poultry by feeding vaccines. Intacular, intanasal vaccination of pizza.

	22. Vaccination in the membrane of the wing and by rubbing into the feather follicles. 23. Pasteurellosis. 24. Pseudomonas. 25. Respiratory mycoplasmosis. 26. Infectious synovitis. 27. Respiratory diseases of chickens. 28. Immunosuppressive diseases. 29. Smallpox. 30. Neuseriosis. 31. Mycoplasmosis of geese. 32. Riemelosis of ducks. 33. Duck plague. 34. Bacteriosis of ducks. 35. Mycoses and mycotoxicosis. 36. Rhinotracheitis of turkeys. Aerosaculite of turkeys. 37. Cannibalism of birds. 38. Modern approaches to the diagnosis and prevention of diseases caused by metabolic disorders. Pharmacological drugs market review. 39. Features of rationing of poultry of different species (total nutritional value). 40. Features of rationing of feeding of poultry of different species (vitamin and mineral composition). 41. General principles of diagnosis and prevention of diseases caused by disorders of protein and carbohydrate-lipid metabolism. 42. General principles of diagnosis and prevention of macro- and microelementosis. 43. Diagnosis and prevention of disorders of calcium, phosphorus, magnesium and sulfur metabolism. 44. Diagnosis and prevention of metabolic disorders of iron, zinc, copper, cobalt, selenium and iodine. 45. Development of technological maps of veterinary and sanitary support in the cultivation of agriculture. birds of different species. 46. Group antigen-nonspecific prevention of poultry diseases. 47. Modern digital means of introducing the livestock industry. 48. Assessment of the epizootic situation and the effectiveness of measures to combat trematode infestations of birds. 49. Study of morphological features of cestode larvae. Study of measures to combat cestode infestation of birds. 50. Study on macro- and micropreparations of helminths and organs affected by bird parasites. 51. Assessment of the epizootic situation regarding nematodes of animals of different species and ages. 52. Study of the technique of examination of poultry feces for the presence of nematode eggs. 53. Evaluation of the effectiveness of treatment of birds with arachnoids.

	54. Detection of parasitic insects on the body of birds and their differentiation (malophages). 55. Study of methods of clinical and laboratory diagnosis of avian eimeriosis.
Language of instruction	Ukrainian.

Структура дисципліни за видами занять

A Лекції	B Семінари	C Самостійна	D лабораторні	E неклінічні з тваринами	F клінічні з тваринами	G інше	H разом
48	7	156	34	23	32		300

Дата останньої модифікації програми	18.06.2020 р.

c. *Animal Production*

Name of the university: Bila Tserkva National Agrarian University	
Name of the faculty: Faculty of Biology and Technology	
Subject	**LIVESTOCK BREEDING**
Teachers	Bushtruk Marina Vitalievna PhD (guarantor);
Forms of education: Lectures / practical Volume of study loading: ECTS credits - 5 (150 hours); Weekly workloading: 2nd semester - 5 (2/3); Student attendance: required	
Course and semester in which the study of the discipline is planned	2 year (master), 4 semester
Prerequisites for studying the discipline	«Anatomy of farm animals, "Physiology", "Breeding", "Biotechnology", "Feeding" animals "," Genetics ".
Methods of knowledge control	Exam
Learning outcomes and competencies	Students must know and be able to: Knowledge: - basic research methods; - structures of professional activity; - in the field of information and communication technologies used in professional activities; Skill: - choose the topic of research, put experiments, conduct analysis, generalization and statistical processing of the obtained data, compare them with the literature data; - solve complex problems and problems that arise in professional activities; - to carry out professional activities that require updating and integration of knowledge of information and communication technologies;

	- use information and communication technologies in the professional field, which requires updating and integration of knowledge.
Description of the discipline	
The base of the discipline	Classrooms of the department, farms of the research farm of the university, farms of agricultural enterprises.
Topics of classroom lessons	Biological and economic features of cattle. Features of the constitution and exterior of cattle of different directions of productivity. Cattle productivity and methods of its estimation. Reproduction of a herd of cattle. Biological and economic features of pigs. Biological features, origin and economic significance of pig breeding. Breeding and productive qualities of pigs and methods of their evaluation. Conditions and categories of fatness. Features of reproduction of a herd of pigs. The main planned breeds. Biological and economic features of DRC. Economic importance, biological features, constitution and exterior of sheep and goats. Methods of breeding work in sheep breeding. Selection work in sheep and goat breeding. Herd reproduction. Biological and economic features of agriculture birds. Biological features of poultry. Breeds and crosses of poultry. Theoretical foundations of poultry breeding. Breeding and breeding work in poultry farming. Milk, beef and pork production technology. Biological and economic features of cattle and pigs. Features of the constitution and exterior of cattle of different directions of productivity. Cattle productivity and methods of its estimation. Reproduction of a herd of cattle. Modern technologies of milk and beef production. Modern technologies of pork production. Meat production technologies on an industrial basis. Productive qualities of sows. Technology of goat and sheep production. Industrial technologies for the production of milk and meat of goats and sheep on an industrial basis. Intensification of sheep and goat production. Production of sheep and goat products. Sheep and goat products. Wool, physical-mechanical and technological properties of wool. Types of elementary fibers of sheep wool. Reproduction of the flock, keeping sheep. Mechanization of production processes in sheep breeding. Obtaining sheep products. Breeding and use of horses. Economic importance, biological features and productivity of horses. Current condition, economic importance, use of horses, features of the exterior of different areas of productivity, gaits of horses. Features of horse breeding. Working and productive qualities of horses. Use and care of work horses. Technology of poultry production. Technology of beekeeping production. Technology of beekeeping production. Biological features of bee breeds used in Ukraine. Technology of rabbit and animal production. Characteristics of rabbit breeding as a branch of productive animal husbandry.

	Origin and biological features of rabbits and fur animals. Breeding, reproduction and breeding of rabbits and fur animals. Technology of meat and skin and down rabbit breeding. Intensive rabbit meat production technology.
Literature recommended:	1. Вертийчук А.І., Масенко М.І., Плуженко І.Л. та інш. Основи тваринництва і ветеринарної медицини – Урожай, 2004. – 650 с. 2. Гопка Б. М. Конярство / Б. М. Гопка, М. П. Хоменко, П. М. Павленко. – К. :Вища освіта, 2004. — 319 с. 3. Засуха Т.В., Зубець М.В., Сирацький Й.З., Тимченко О.Г. та ін. Розведення сільськогосподарських тварин з основами спеціальної зоотехнії. – К.: Аграрна наука, 1999. – 512 с. 4. Розведення с.-г. тварин /М.З. Басовський, Д.Т. Віннічук, В.П. Коваленко та ін. - К., Урожай, 1998. - 405 с. 5. Розведення сільськогосподарських тварин / [М. З. Басовський, В. П. Буркат, Д. Т. Вінничук та ін.] ; за ред. М. З. Басовського. — Біла Церква, 2001. — 400 с. 6. Розведення сільськогосподарських тварин. Навчальний посібник. І.А. Рудик, М.В. Буштрук, І.С. Старостенко та ін. К., 2009. 339 с. 7. Методи наукових досліджень у тваринництві та ветеринарній медицині (Навчальний посібник для студентів магістратури, аспірантури та докторантури). Яблонський В., Яблонська О. – Четверте видання. К.: В-во ТОВ "АграрМедіаГруп", 2012. - 297 с.
Language of instruction	Ukrainian

The structure of the discipline by type of occupation

A lectures	B seminars	C Self-education	D laboratory	E non-clinical with animals, models	F Clinical with animals	G other	H total
32	-	70	48	-	-	-	150

Date of the last modification of the program	28.08.2019 p.

Name of the university: Bila Tserkva National Agrarian University	
Name of the faculty: Faculty of Veterinary Medicine	
Subject	**HERD HEALTH MANAGEMENT**
Teachers	Nataliia Vovkotrub, PhD, DVM; Svitlana Vlasenko, Ph.D. Hab., DVM; Volodymyr Andriiets, PhD, DVM
Forms of study: Lectures / practical	

Volume of study load: ECTS credits - 6 (180 hours) **Form of study:** full-time **Weekly loading:** 4 (2/2) **Student attendance:** obligatory	
Course and semester in which the discipline is planned to be studied	5 year, 10 semester
Prerequisites for studying the discipline	Ethology and animal welfare, Animal nutrition, Animal production, including breeding and husbandry, Propaedeutics and diagnostic imaging, Obstetrics and biotechnology of animal reproduction with basics of andrology, General and special surgery of large animals, Medicine of internal diseases of large animals, Zoonoses and the concept of One health, Parasitology and invasive diseases, Epizootology, infectious diseases and preventive medicine
Methods of knowledge control	Exam
Learning outcomes and competencies	Students must know: basic herd health management algorithms using the principles of national and international legislation, animal welfare standards for humane methods of breeding, transportation and operation, basic approaches to the development and implementation of the necessary hygienic conditions on the farm in compliance with biosafety rules; animal examination's methods and have the technique of applying basic and some special examination's methods; modern technologies of intensive reproduction and basics of animal orthopedics; substantiation of complex prevention of infertility and mastitis. Be able to: properly manage all hazards that threaten the health of animals and people on the farm, examine livestock using tools, special devices, laboratory equipment, etc. to carry out the necessary manipulations during professional activities and analyze the results in order to draw conclusions about state of animal health and further planning, organization and implementation of treatment and prevention measures for livestock with diseases of non-contagious, infectious and invasive etiology; apply hormonal therapy taking into account the indications and contraindications, as well as its pharmacological support; to carry out gynecological examination with the subsequent development of systemic infertility prevention, orthopedic examination.
Description of the discipline	
The base of the discipline	Classrooms, laboratories, educational veterinary clinic (VTH), educational and farms of agricultural enterprises.
Topics of classroom lessons	Topic 1. Management of calf rearing. Topic 2. Veterinary treatments of calves. Topic 3. Biosafety management during calf rearing. Topic 4. Cows welfare management. Topic 5. Zoonoses control programs on dairy farms. Topic 6. Rules for the use of veterinary drugs in the herd health management system.

	Topic 7. The software systems as a tool of herd health control on the farm. Topic 8. Reproductive dairy herds' health and the reproduction level of highly productive cows. Topic 9. Technological factors of symptomatic infertility in cows. Topic 10. Monitoring the distributions of mammary gland diseases in cows, causes analysis of their occurrence, depending on the technological, breed, age, microbiological, traumatogenic factors. Topic 11. Control and maintenance of orthopedic cows' health.
Recommended literature:	1. Zdorovia stada ta yoho otsinka: Metodychni rekomendatsii dlia mahistriv FVM / V.V. Sakhniuk, V.M. Bezukh, N.V. Vovkotrub, O.V. Chub (Bila Tserkva); Marie-Anne Arcangioli, Claire Becker, Gille Lesorbe (Lion). – Bila Tserkva, 2020 . – 36 s. 2. Syhnaly korov / Yan Hulsen // Praktycheskoe rukovodstvo po menedzhmentu v molochnom zhyvotnovodstve: Vetvice, 2010. – 98 s. 3. Posibnyk z molochnoho fermerstva / Ya.Kh. Kremers, H.P. Bondarenko, L.M. Stolpnyk ta in.; za red. Kremersa Ya.Kh., Teresa V.M., Maksymova M.H. – K.: TsP "Komprynt". – 2017. – 120 s. 4. Klinichna diahnostyka khvorob tvaryn / [Levchenko V.I., Vlizlo V.V., Kondrakhin I.P. ta in.]; za red. V.I. Levchenka i V.M. Bezukha. – Bila Tserkva, 2017. – 544 s. 5. Metody laboratornoi klinichnoi diahnostyky khvorob tvaryn / [Levchenko V.I., Holovakha V.I., Kondrakhin I.P. ta in.]. – K.: Urozhai, 2010. – 408 s. 6. Patolohiia molochnoi zalozy u koriv, ovets i kiz: metod. vkazivky / I.M. Plakhotniuk, S.S. Volkov, B.P. Ivasenko, Yu.M. Ordin. – Bila Tserkva, 2015. – 26 s. 7. Farmakolohichne zabezpechennia intensyvnoho vidtvorennia koriv / S.A. Vlasenko, Yu.M. Ordin, I.M. Plakhotniuk ta in. – Bila Tserkva, 2019. – 153 s. 8. Stymuliatsiia i synkhronizatsiia statevoi tsyklichnosti u koriv ta metody pidvyshchennia zaplidnenosti / H.H. Kharuta, S.S. Volkov, V.V. Lototskyi ta in. – Bila Tserkva, 2009.–21 s. 9. Vlasenko S.A. Kompleksne likuvannia koriv za metrytu iz zastosuvanniam antyseptykiv na polimernii osnovi ta dezahrehantiv: metodychni rekomendatsii dlia spetsialistiv i mahistriv z veterynarnoi medytsyny / S.A. Vlasenko, M.V. Rublenko. – Bila Tserkva, 2015. – 25 s.
Language of teaching	Ukrainian

The structure of the discipline by type of occupation

A lectures	B seminars	C Self-education	D laboratory	E non-clinical with animals, models	F Clinical with animals	G other	H total

32	10	84	8	10	36	-	180

Date of the last modification of the program	28.08.2020

d. *Food Safety and Quality, Veterinary Public Health and One Health Concept*

Name of the university: Bila Tserkva National Agrarian University	
Name of the faculty: Faculty of Veterinary Medicine	
Subject	**SAFETY, QUALITY OF FOOD AND FEED**
Teachers	Vasyl Lyasota, doctor habilitated, DVM; Oksana Khitska, PhD, DVM; Nataliya Bukalova, PhD, DVM; Volodymyr Dzmil, PhD, DVM; Nataliya Tyshkivska, PhD, DVM
Forms of study: Lectures / practical **Volume of study loading: ECTS credits - 9 (270 hours);** **Weekly workloading: 7 semester - 4 (2/2); 8 semester - 6 (2/4)** **Student attendance: required**	
Course and semester in which the discipline is planned to be studied	4 year, 7–8 semester
Prerequisites for studying the discipline	«Animal Anatomy "," Animal Hygiene "," Veterinary Microbiology "," Veterinary Toxicology "," Obstetrics, Gynecology and Biotechnology of Animal Reproduction with the Basics of Andrology "," Epizootology, Infectious Diseases and Preventive Medicine "," Parasitology and Invasive Diseases»
Methods of knowledge control	Test, exam
Learning outcomes and competencies	Learning outcomes defined by the Standard of Higher Education in Ukraine for specialty 211 "Veterinary Medicine": PH1, PH9, PH10, PH11, PH12. Students must know and be able to: Knowledge: - know the terminology of national and international (FAO standards, Codex Alimentarius, IEB, etc.) food legislation on food safety and quality; - know the basics of technology and hygiene of animal slaughter; - know the requirements and analyze good hygiene practices (hygiene requirements) throughout the food chain; - know the criteria for assessing the safety and quality of food and feed for productive animals; - know the standard operating procedures for sampling, documenting the results of state control, testing the safety and quality of food;

	- have basic knowledge of the HACCP system (know the terminology, understand the principles); - know the basics of food hazard analysis and risk assessment related to physical, chemical, biological hazards, as well as their impact on human health; - know the classification and characteristics of foodborne diseases, ways to prevent them, understand the risks to consumers; - know the procedure and principles of investigating cases of foodborne illness related to food consumption; - know the structure and procedures of interaction of government agencies and institutions that ensure food safety and human health, be able to establish communication with other professionals. Skill: - be able to conduct pre-slaughter and post-slaughter inspection of animals and poultry at slaughterhouses (slaughterhouses), as well as post-slaughter inspection of animals killed on the hunt; - be able to determine the use of slaughter products after the post-mortem inspection; - carry out the seizure of food, ie measures aimed at preventing the spread of unsafe food to consumers; - to carry out veterinary and sanitary control over the disposal (disinfection), utilization and destruction of products of slaughter of animals unfit for consumption, which will ensure their safety for humans, animals and the environment. - be able to analyze the hygienic conditions of primary milk production, assess the quality and safety of raw milk; - be able to analyze good hygiene practices (hygiene requirements) throughout the food chain; - have practical skills (methods and techniques) to control the safety and quality of food, be able to interpret research results and make decisions about further use of food; - be able to analyze the results of tests of safety and quality of food and feed in order to improve hygienic conditions and ensure food safety throughout the food chain; - analyze the results of national programs for monitoring toxicants, residues of veterinary drugs and contaminants in food, laboratory tests, draw conclusions about each stage of the "food chain" and provide the necessary recommendations; understand the risks associated with physical, chemical, biological hazards and their impact on humans.
Description of the discipline	
The base of the discipline	Classrooms, Research Laboratory of Veterinary Sanitary Examination and Hygiene of Livestock Products of BNAU, Dairy Farm of TPC BNAU, State Laboratories of Veterinary and Sanitary Examination in Markets, Slaughterhouses, Processing Enterprises
Topics of classroom lessons	**Lecture topics:** 1. Introduction to the discipline. The main provisions of national legislation on food safety and quality.

	2. Fundamentals of European and international legislation on food safety. OIE international standards in the field of food safety. 3. Transportation of slaughter animals, their pre-slaughter content. Animal welfare during transportation and before slaughter. 4. Slaughterhouse processing enterprises and veterinary and sanitary requirements for them. 5. Procedures for ante-mortem inspection of animals. Fundamentals of technology and hygiene of slaughter of animals and processing of slaughter products. 6. Organization and methods of post-mortem inspection of slaughter products. Principles of audit and official control at enterprises (slaughterhouses). Analysis of hygienic conditions and risk assessment for slaughter and primary processing of animals. 7. Commodity science of meat. 8. Post-mortem inspection and sanitary assessment of slaughter products in case of detection of infectious diseases. 9. Post-mortem inspection and sanitary assessment of animal slaughter products in case of detection of invasive diseases. 10. Food toxicoinfections and toxicosis, their prevention. Public health (risks and prevention of zoonoses and foodborne diseases). Interaction of government agencies and institutions that ensure food safety and human health. 11. Fundamentals of technology, hygiene of canning and veterinary examination of meat products. 12. Assessment of fish quality and safety. 13. General concepts of milk. National standard requirements for whole cow's milk. 14. Veterinary and sanitary conditions for obtaining and primary processing of milk on farms. 15. Veterinary and sanitary assessment of milk in case of infectious diseases. 16. Fundamentals of the HACCP system (legal framework, terminology, basic principles). 17. Hygienic requirements for the sale of food products in retail chains (food markets, markets). Features of state control of food products of animal origin in the food market. 18. Traceability of food products (terminology, general concepts and principles). Informing consumers. 19. Safety and quality of feed for productive animals. Law of Ukraine "On Food Safety and Hygiene". Traceability of feed.
	Topics of practical classes: 1. Familiarity with the rules of safety, biosafety and the principles of academic integrity. Categories of fattening of slaughter animals and carcasses according to state standards. 2. Procedures for post-mortem examination of the main lymph nodes, head, internal organs and carcasses of slaughter animals. 3. Application of the fitness mark and veterinary stamps. Commodity evaluation and labeling of meat.

	4. Hygienic requirements for meat shops and pavilions. Varietal cutting of meat carcasses for retail trade. 5. Methods for determining the meat of different species of animals. 6. Methods for determining the meat of patients killed in the agonal state and dead animals. Sanitary assessment. 7. General veterinary prevention measures in accordance with the concept of "early detection system" for the prevention and timely identification of outbreaks of foodborne diseases. Sanitary evaluation of meat for the detection of foodborne pathogens (salmonella, Escherichia coli, staphylococci, streptococci, listeria, clostridia). 8. Procedures and methods of post-mortem diagnosis of products of slaughter of animals with parasitic zoonoses (trichinosis, cysticercosis, echinococcosis and fasciolosis). 9. Fundamentals of research methods of outbreaks of foodborne diseases. Sources for finding updated information on epizootic and epidemiological well-being. 10. Disinfection of conditionally suitable meat, quality control of disinfection. Procedures for the treatment of animal waste. 11. Methods for determining the degree of freshness of meat of different species of animals and poultry. Sanitary assessment of meat of different freshness. 12. Sampling and veterinary examination of salted and salted-smoked products. 13. Hygiene of production, assessment of quality and safety of canned meat. Defects of bank canned food, their sanitary assessment. 14. Production hygiene, assessment of quality and safety of sausages. Defects of sausages, their sanitary assessment. 15. Quality and safety of edible animal fats. Sampling procedures and methods for testing the freshness of edible animal fats. Changes in fat during production and circulation. 16. Sampling procedures, procedure and methods of fish research. Organoleptic assessment of fish quality by tasting. Determination of fish freshness and sanitary assessment of fish of different freshness. Fish defects, sanitary assessment. 17. Veterinary sanitation expertise of food eggs. Commodity classification, marking. Egg defects, sanitary assessment. 18. Procedures for sampling and preservation of milk samples. Organoleptic evaluation and defects of milk. 19. Determination of density, degree of purity, acidity of milk, dry matter and dry skim milk residue. Analysis of the obtained results on compliance with the requirements of DSTU. 20. Determination of the mass fraction of fat, protein, lactose in milk. Interpretation of the obtained results. 21. Methods of control of naturalness of milk, sanitary assessment of milk for falsification. Detection of milk from cows with mastitis. Determination of somatic cell content in milk.

	22. Biological hazards in milk. Preparation of reductase test with resazurin and methylene blue for rapid diagnosis of microbial contamination of milk. 23. Classification and range of dairy products, features of their production technology. Vetsanekspertiza of dairy products (cream, sour cream, sour milk cheese, butter, hard cheeses, etc.). 24. National system for control of residues of contaminants, toxicants and veterinary drugs in food. 25. Food hazards and risk analysis for consumers (basic aspects and general concepts). 26. Requirements of the state standard to honey. Classification, chemical composition, nutritional value and properties of honey. Sampling procedures, assessment of honey quality and safety. 27. Vetsanekspertiza food products of plant origin (vegetables and fruits, fresh and salted, dried fruits, tropical fruits) in the food market. 28. Legislative requirements and methods of official control of animal by-products
Recommended literature	1. Ветеринарно-санітарна експертиза з основами технології і стандартизації продуктів тваринництва / О.М. Якубчак та ін. Київ, 2005. С. 500−503. 2. Ветеринарно-санітарна експертиза рослинних харчових продуктів: навчальний посібник / І.В. Яценко та ін. Харків: Еспада, 2011. 256 с. 3. Ветеринарно-санітарна експертиза молока і молочних продуктів в Україні: теоретична частина та лабораторний практикум / І.В. Яценко та ін. Харків: Еспада, 2013. 384 с. 4. Гігієна молока і молочних продуктів. Частина 1. Гігієна молока: Підручник / І.В. Яценко та ін. Харків: «Диса Плюс», 2016. 416 с. 5. Якубчак О.М., Тютюн А.І., Таран Т.В., Джміль В.І. Гігієна первинної переробки тварин і продуктів забою: Навчальний посібник. К.: ЦП «Компринт», 2015. 156 с. 6. Гігієна і експертиза харчових тваринних гідробіонтів та продуктів їх переробки. Частина 1. Гігієна і експертиза рибопромислової продукції: Підручник / І.В. Яценко та ін. Харків: «Диса Плюс», 2017. 680 с.
Language of teaching	Ukrainian

The structure of the discipline by type of occupation

Subject	A	B	C	D	E	F	G	H
Safety, quality of food and feed	60	20	118	42	30	-	-	270 (9credits)

A: lectures **B**: seminars; **C**:controlled self-study; **D**: laboratory and descriptive work, **E**: non-clinical work on animals; **F**:clinical work on animals; **G**:other; **H**: total

Date of the last modification of the program	28.08.2019 p.

Name of the university: Bila Tserkva National Agrarian University	
Name of the faculty: Faculty of Veterinary Medicine	
Subject	**FOOD HYGIENE AND STATE CONTROL**
Teachers	Vasyl Lyasota, doctor habilitated, DVM; Oksana Khitska, PhD, DVM; Nataliya Bukalova, PhD, DVM; Volodymyr Dzmil, PhD, DVM; Nataliya Tyshkivska, PhD, DVM
Forms of study: Lectures / practical **Volume of study loading: ECTS credits - 4 (120 hours);** **Weekly workloading: 9 semester - 5 (2/3)** **Student attendance: required**	
Course and semester in which the discipline is planned to be studied	5 year, 9 semester
Prerequisites for studying the discipline	"Safety, quality of food and feed", "Veterinary microbiology", "Food microbiology", "Epizootology, infectious diseases and preventive medicine", "Parasitology and invasive diseases"
Methods of knowledge control	Exam
Learning outcomes and competencies	Learning outcomes defined by the Standard of Higher Education in Ukraine for specialty 211 "Veterinary Medicine": PH9, PH10, PH12. Students must know and be able to: Knowledge: - know the requirements for food hygiene; - know the procedures for planning and implementing measures of state control of food market operators; - know the specifics of the analysis of potential hazards (physical, chemical and biological) in food, the use of prognostic microbiology, principles and methods of food risk management; - know the basic principles of risk-oriented food safety control system, the criteria for assessing the degree of risk from economic activity, and the procedure for determining the frequency of implementation of planned measures of state control of facilities; - know the basic principles of organization and functioning of the HACCP system, conducting an audit of ongoing procedures based on the principles of HACCP R; - know the legislation on international trade in animals and food, the requirements of national legislation on the import (forwarding) of goods with food into the customs territory of Ukraine, transit of goods with food through the territory of Ukraine, special conditions for import of food and feed; - know the procedure and principles of state control of sanitary and hygienic conditions in catering establishments and retail chains.

	Skill: - have knowledge of national, international and European legislation in the field of food and feed safety; - develop plans and organize measures of state control, inspect food market operators for compliance with food legislation and their compliance with the hygienic conditions of production and circulation of food products; evaluate the plan of sanitary control of the enterprise in accordance with the level of sanitary safety of final food products; - be able to identify and analyze food hazards throughout the food chain and apply scientific methods to assess sanitary hazards and risks associated with animals, food and the environment, as well as their impact on public health; - have the methods and tools needed to control risks (GHP, GMP, HACCP) at the enterprise; - have the basic principles of organization and operation of the Food Safety Management System (HACCP / ISO 22000), be able to assess the effectiveness of the HACCP system and conduct an audit of ongoing procedures based on HACCP principles; - plan and implement traceability of the food chain, ie identify the market operator and track food turnover; - to carry out border state control of cargoes with objects of sanitary measures, which are imported into the customs territory of Ukraine, are in transit or exported outside it; - understand the importance and conduct educational work on compliance with the requirements and principles of hygiene among food market operators and consumers.
Description of the discipline	
The base of the discipline	Classrooms, State Food and Consumer Services in Bila Tserkva, Bila Tserkva Border Inspection, DLVSE Markets in Bila Tserkva.
Topics of classroom lessons	**Lecture topics:** **1.** General requirements for food hygiene. Legislative aspects, rights, duties and responsibilities of food market operators. 2. Sanitary crisis management. Traceability in the food chain. Inspection of market operators for compliance with food legislation. The plan of sanitary control of the enterprise according to the level of sanitary safety of final products. Requirements for the introduction of traceability established at the international level in the EU and Ukraine. Traceability: its components, goals and objectives. Assessment of the traceability of the food product, withdrawal procedures / feedback at the local level. 3. Analysis of hazards and risks associated with food and the environment. Identification of food hazards in the food chain and scientific methods for assessing health hazards and their impact on public health. 4. Introduction of the principles of risk-oriented approach to objects. Basic principles of risk-oriented food safety control system. Scientific methods of risk assessment and management, their impact on public health.

	5. Methods and tools needed to develop a risk control strategy (GHP, GMP). Prerequisite programs. Importance of hygiene principles: good hygiene practices (GHP) and prerequisite programs (PRP), flexibility and conditions of application. 6. Food Safety Management System (HACCP): principles, implementation and flexibility. 7. The system of state control over compliance with legislation on food, feed, by-products of animal origin. Legislative aspects (Law of Ukraine "On state control over compliance with legislation on food, feed, animal by-products, animal health and welfare"). Powers of executive bodies in the field of state control. Responsibilities, rights and requirements for state veterinary inspectors. 8. State control at the border. International legislation on sanitary safety control during international trade in animals and products of animal origin. Legislation on international trade in animals and food. The role of international organizations (FAO, Codex Alimentarius, OIE, WHO, etc.) in the regulatory support of international trade in food. World Trade Organization (WTO) Agreement on the Application of Sanitary and Phytosanitary Measures (SPS Agreement). 9. National legislation on sanitary control during international trade in animals and products of animal origin. Requirements of the national legislation concerning import (forwarding) of cargoes with foodstuff to the customs territory of Ukraine, transit of cargoes with products through the territory of Ukraine, special conditions of import of foodstuff and forages. State control of the exporting country. 10. Sanitary and veterinary measures at the border. Carrying out official state control (supervision) at the border. Principles of implementation of the "single window" during the implementation of veterinary and sanitary control. Information support for state control at the border. 11. State control in the networks of direct sales of food products (restaurants and catering, markets, food markets). Liability of market operators for violation of sanitary rules and regulations for the prevention of infectious diseases and mass poisoning.
	Topics of practical classes: 1. Best practices (GMP, GHP) of food production "from the field to the table". Best practices for milk and dairy production. Best practices in meat production. Best practices in aquaculture products. Best practices in beekeeping. 2. Analysis of hazardous factors in food. Seminar (supervised group work): Preparation and presentation of personal presentations (dangerous factors of different food groups, their risks for people). 3. Criteria for assessing the degree of risk from economic activity and the procedure for determining the frequency of implementation of planned measures of state control of facilities. 4. Systems for the rapid exchange of information on the presence of hazards in food and risks to human health associated

	with food. RASFF system (European Rapid Alert System for Food and Feed). Instructions for behavior after receiving the information message. Workshop (supervised group work - webquest): Analysis of RASFF annual reports on major food hazards and risks. Preparation and presentation of personal presentations. Seminar (controlled group work - case studies): analysis of hygienic conditions and prerequisite programs for a particular food market operator. 5. Requirements for the development, implementation and application of permanent procedures based on the principles of the Food Safety Management System (HACCP) (Order of the Ministry of Agrarian Policy № 590). 6. HACCP system: assessment of compliance and effectiveness. Audit of ongoing procedures based on HACCP principles. An act drawn up as a result of a state control measure in the form of an audit of permanent procedures based on the principles of the HACCP (Order of the Ministry of Agrarian Policy № 446). 7. Seminar (controlled group work - case studies): Practical activities according to the HACCP method: flow diagram, analysis of hazardous factors, determination of CPC for the stages of production of a particular food product. Establish critical boundaries, monitoring system and corrective actions for identified CPCs. 8. Principles and requirements for state control. Measures of state control (audit, inspection, pre-slaughter and post-slaughter inspection, sampling, laboratory examination (testing), documentary inspection, compliance check). State control planning (long-term and annual plans) .. 9. Methodology of inspection and audit of food market operators. Requirements for maintaining mandatory reporting documentation. Execution of an act drawn up as a result of a planned (unscheduled) measure of state control (inspection) regarding compliance by market operators with the requirements of food legislation (Order of the Ministry of Agrarian Policy № 447). Proceedings in cases of violation of the legislation on food and feed. Temporary cessation of production and / or circulation of food and / or feed. 10. Basic principles of the Unified information system of veterinary and sanitary control. Laboratory Information Management System (LIMS). Information system for conducting inspection activities and maintaining registers (mechanisms for study and processing). 11. State control of food of animal origin and live animals. Features of state control over slaughterhouses and meat dismantling and deboning facilities. Decisions of the state veterinary inspector made on the basis of information about the food chain. State control of fish products. State control of raw milk. 12. Practical training on production: Visiting the Department of the State Food and Consumer Service in Bila Tserkva

	(acquaintance with the procedures of state control of food market operators and record keeping). 13. Special conditions for import of food and feed. Requirements for customs warehouses, warehouses in free customs zones, intended for storage of products that do not comply with the legislation. Re-import of cargoes with products. Restrictions on the import (shipment) of goods with products to the customs territory of Ukraine. Handling of goods imported (shipped) to the customs territory of Ukraine, which do not comply with the law. Special conditions for the import of food and feed. 14. Border inspection posts (BIP). Inspection of goods with products at the designated border inspection post. Physical inspection of cargoes with products. Laboratory tests (tests). Practical training on the production: Visiting the Bila Tserkva Border Inspection Point (PIP) of the South-Western Regional Service of State Veterinary and Sanitary Control and Supervision at the State Border and Transport (acquaintance with the procedures of state control at the border and record keeping). 15. Practical aspects and procedure for state control of food products in direct sales networks. visiting markets.
Recommended literature:	1. Богатко Н.М., Букалова Н.В., Сахнюк В.В., Джміль В.І. Особливості впровадження системи НАССР на м'ясо-, молоко- та рибопереробних підприємствах України: Навчальний посібник. Біла Церква, 2016. 283 с. 2. Гігієна молока і молочних продуктів. Частина 2. Гігієна молочних продуктів: Підручник / І.В. Яценко та ін. Харків: «Диса Плюс», 2016. 424 с. . 3. Якубчак О.М., Тютюн А.І., Таран Т.В., Джміль В.І. Гігієна первинної переробки тварин і продуктів забою: Навчальний посібник. К.: ЦП «Компринт», 2015. 156 с. 4. Гігієна і експертиза харчових тваринних гідробіонтів та продуктів їх переробки. Частина 1. Гігієна і експертиза рибопромислової продукції: Підручник / І.В. Яценко та ін. Харків: «Диса Плюс», 2017. 680 с. 5. Гігієна і експертиза харчових тваринних гідробіонтів та продуктів їх переробки. Частина 2. Гігієна і експертиза водних ссавців, безхребетних гідробіонтів, продукції з риби: Підручник / І.В. Яценко та ін. Харків: «Диса Плюс», 2017. 648 с.
Language of teaching	Ukrainian

The structure of the discipline by type of occupation

Subject	A	B	C	D	E	F	G	H
Food hygiene and state control	28	10	50	32	-	-	-	120 (4кредити)

A: lectures; B: seminars; C: controlled self-study; D: laboratory and descriptive work, E: non-clinical work on animals; F: clinical work on animals; G: other; H: total

Date of the last modification of the program	Developed for the first time for 20202021 academic year.

Subjects	ORGANIZATION OF VETERINARY SERVICE AND PUBLIC HEALTH
Teacher	Korniienko Lubov Mykolayivna Candidate of Veterinary Science, Associate Professor, Department of Epizootology and Infectious Diseases
Course and semester in which you plan to study the discipline	4 B course, 7 semester; 5 S course, 9 semester; 3 SPB course, 5 semester; 4 M course, 7 semester; 3 SP M course, 6 semester.
Faculties whose students are invited to study discipline	Faculty of Veterinary Medicine
List of competences and relevant learning outcomes provided by the discipline	The result of teaching the discipline is the acquisition of the following knowledge and skills by students: **Knowledge:** – the basics of the legislation on veterinary medicine and food safety; – organizational structure of the State DPSS of Ukraine and the veterinary medicine service in general and in its respective territory; – organization of work of veterinary medicine specialists in territorial bodies of management, enterprises and institutions of public service; – peculiarities of organization of work of departmental and private veterinary service; - planning and organization of veterinary events, according to the direction of activity of the branch; - the main legislative documents on veterinary medicine; – international veterinary organizations and veterinary organizations in Ukraine, the functions assigned to them. **Skill:** – draw up major accounting journals and reports; – write acts on various types of work in veterinary activity; – to develop plans of veterinary measures (preventive and emergency direction); – to make mathematical calculations of expediency of carrying out various veterinary work; – to issue a veterinary certificate (veterinary certificate) for the transfer of goods under the control of the veterinary service; – to organize the carrying out of the state veterinary and sanitary control and supervision on the controlled objects; – to determine the financing and logistics of veterinary activities.
Description of the discipline	
Prerequisites necessary for the study of the discipline	Theoretical and practical knowledge in the following clinical disciplines: epizootology and infectious animal diseases, therapy and clinical diagnosis, obstetrics and surgery, parasitology and veterinary examination. Have a thorough

	knowledge of the structure and methods of assessing professional activity.
Maximum number of students who can study simultaneously	12 students
Classroom topics	**Lecture topics:** 1. Veterinary Service of Ukraine and organizational structure of the State Consumer Service and Veterinary Medicine Service in Ukraine. The main tasks facing the veterinary service of Ukraine. 2. The organizational structure and functional responsibilities of the veterinary service in the area. 3. Features of organization of veterinary business in farms of different forms of ownership. 4. Planning of veterinary events and organization of their implementation. 5. The expediency and procedure of calculating the effectiveness of veterinary measures. 6. Financing and logistics of the SPSU and veterinary medicine service in Ukraine. 7. Legislative basis and organization of state veterinary-sanitary control and supervision at the controlled objects of Ukraine. 8. Organization of research work on veterinary medicine in Ukraine. 9. International veterinary organizations. The concept of the Association of Veterinary Medicine Specialists of Ukraine and its cooperation with other organizations. 10. Veterinary service in establishments of state veterinary medicine. State budget in veterinary activity. Principles and types of self-financing. 11. Content and main provisions of the current Law of Ukraine “On Veterinary Medicine”. **Practical topics:** 1. The order of registration of accounting logs on the work performed by veterinary service specialists. 2 Procedure for preparation and submission of reports by the veterinary service. 3. Registration of acts on performance of various types of works in veterinary business. 4. State administration of veterinary medicine service in Ukraine. Organizational structure of the State Consumer Service of Ukraine. 5. Organization of veterinary business in the area. 6. Organization of veterinary business in farms of different forms of ownership. 7. The procedure for the issuance of veterinary documents on cargo is under the control of the veterinary medicine service. 8. Planning of veterinary events. 9. Plan of veterinary and prophylactic and anti-epizootic measures.

	10. Plan of organizational-economic and veterinary-sanitary measures for elimination (specific infectious disease - according to the task) at the disadvantaged point (economy). 11. Legislative basis for quarantine (quarantine restrictions) for infectious disease outbreaks. Organization of planned veterinary events. 12. The expediency and procedure of calculating the effectiveness of veterinary measures. 13. Financing and logistics of the SPSU and veterinary medicine service in Ukraine. 14. Veterinary service in establishments of state veterinary medicine. State budget in veterinary activity. Principles and types of self-financing. 15. Legislative basis and organization of state veterinary and sanitary control and supervision at the controlled objects of Ukraine. 16. Organization of research work in Ukraine. International veterinary organizations.
Language of instruction	Ukrainian

Structure of discipline by types of classes

Subject	A	B	C	D	E	F	G	H
Organization of veterinary service and public health	**28**	**6**	**50**	**42**	**–**	**–**	**–**	**120** (4 **ECTS**)

A - lectures**; B -** seminars**; C -** controlled self-study**; D -** laboratory and descriptive work**; E -** non-clinical work on animals**; F -** Clinical work on animals**; G -** others (specify)**; H -** together.

The date of the latest program modification	28.08. 2019

University Name: Bila Tserkva National Agrarian University	
The name of the faculty: Faculty of Veterinary Medicine	
Subjects	**NATIONAL AND INTERNATIONAL VETERINARY LEGISLATION AND FORENSIC MEDICINE**
Lecturer	Korniienko Lubov, PhD, DVM; Mykola Utechenko, PhD, DVM
Forms of study: Lectures / practical **Number of hours of study: ECTS –** 4 (120 hours); **number of hours per week:** **Student's presence:** mandatory	
A course and semester in which the study of discipline is planned	5 course, 10 semester;
Prerequisites for studying discipline	Theoretical and practical knowledge in the following clinical disciplines: "Organization of veterinary service and public health", "Epizootology, infectious diseases and preventive medicine", "Parasitology", "Pathological anatomy", "Propaedeutics and therapy of internal diseases of large animals", "Clinical diagnostics", "Food hygiene and state control", "Animal anatomy", "Cytology, histology, embryology", "Animal physiology" and "Pathological physiology"
Methods of knowledge control	Test

List of competences and relevant learning outcomes provided by the discipline	Students need to know and be able to: ***Knowledge:*** - structure of the veterinary service of Ukraine and methods of evaluation of professional activity; - job responsibilities and ways of fulfilling the set tasks; - the procedure for appointing an expert and conducting a forensic veterinary examination; rights, duties and responsibilities of the expert; the technique of conducting pathological and anatomical autopsies of corpses and the procedure for drawing up documentation based on the results of the examination. - to demonstrate understanding of the peculiarities of the activity of a veterinarian and the functioning of branch production structures in modern economic conditions; - main provisions of legislative acts of Ukraine, international and European legislation on veterinary medicine and animal welfare; - legal status of the organization of state veterinary and sanitary control and supervision at controlled facilities; - have the methods of clinical and laboratory research to monitor the health of animals and control the implementation of measures for the treatment of sick animals and prevention of animal diseases of various etiologies; - have professional and specialized knowledge and practical skills in planning and conducting standard and extended state control over controlled cargo at the state border and transport; - features of pathomorphological researches and forensic veterinary medicine. Skill: ***Students must be able to:*** - to establish, assess and control risks during the implementation of state veterinary and sanitary control and supervision at controlled facilities; - to carry out veterinary accounting, to make out the reporting documentation, instructions, to develop the order, to issue acts on consequences of veterinary work; - find reliable and up-to-date information concerning national and international legislation and relevant standards; - have knowledge and competencies in international and European legislation (FAO, Codex Alimentarius, OIE, WHO, EEC) on food safety; - take samples and send them to the laboratory for additional research; - to make reasonable conclusions based on the results of expert research and draw up appropriate documentation; - to dissect the corpses of different species of animals, analyze the results of the dissection and draw appropriate conclusions; - plan and comply with hygienic requirements and sanitary measures in accordance with current legislation and bylaws; - substantiate the expediency of organizing and conducting state veterinary and sanitary control and supervision at controlled facilities in accordance with applicable regulations;

	- effectively form a communication strategy in professional activities in relation to the requirements of national and international legislation and standards; - organize state veterinary and sanitary control and supervision at controlled facilities; - to conduct pathomorphological studies of various organs and tissues after the death of animals; - to conduct a forensic veterinary examination of the causes of death of animals; - draw up the necessary documentation based on the results of the work performed.
Description of discipline	
Base holding classes from discipline	Auditoriums of departments, educational and research economy of the university, state institutions of veterinary service of Bila Tserkva district and city, museum of pathological anatomy and necropsy hall, Skvyra recycling plant.
Themes of classroom classes	**Lecture topics:** 1. Legislation on veterinary medicine in Ukraine. The main tasks of veterinary medicine in Ukraine. Protect animal health. 2. Legislative requirements for the implementation of state veterinary and sanitary control and supervision at controlled facilities. Legal status of state veterinary and sanitary control and supervision. Professional tact and code of conduct of officials performing the functions of state veterinary and sanitary control and supervision, their rights and responsibilities. 3. Principles of development, approval and application of veterinary and sanitary measures. 4. Professional and administrative offenses in veterinary medicine. 5. Legal and administrative responsibility of persons for offenses in veterinary medicine. 6. International veterinary organizations and their role in the formation of international veterinary rules. 7. Biosafety. 8. Basics of forensic veterinary examination. 9. General provisions for forensic veterinary autopsy. 10. Similarities and differences of forensic veterinary examination and pathological and anatomical autopsy. 11. Registration of documentation for forensic veterinary examination. 12. The final stage of forensic veterinary examination. 13. Forensic veterinary examination based on the results of the court case. 14. Legal aspects of forensic veterinary examination.
Topics of classroom classes	**Topics of practical classes:** 1. Protect animal health. Diseases to be reported. Legislative requirements for the registration of livestock facilities, preventive quarantine of animals. Rights and responsibilities of pet owners. 2. Legislative requirements for the introduction of quarantine (quarantine restrictions) in unfavorable territory, in the event of an outbreak of dangerous infectious animal diseases in Ukraine. The concept of emergency anti-epizootic commissions. The order of carrying out epizootological inspection and development of the act on

	the performed work. The order of development of the project Order of the regional state emergency anti-epizootic commission on introduction of quarantine (quarantine restrictions) on the unfavorable territory (at various infectious diseases, according to tasks). The order of development of the project of the Instruction, about temporary introduction of quarantine (quarantine restrictions) on the unfavorable territory, or strengthening of veterinary measures for complication of an epizootic situation. 3. Legislative bases of carrying out veterinary actions in an unfavorable point. Development of a package of documents that are an appendix to the order (plan of organizational and economic and veterinary and sanitary measures to eliminate infectious disease in the farm or settlement, in accordance with the task), which are submitted to the state emergency anti-epizootic commission, in case of quarantine). 4. Legislation on veterinary medicine in Ukraine. The main tasks of veterinary medicine in Ukraine. 5. State veterinary and sanitary control and supervision at the state border and transport, at markets, during hunting of animals, on safety and quality of substances and veterinary drugs. Execution of documents for performed veterinary measures. Execution of acts based on the results of state veterinary and sanitary control and supervision, for various types of work performed by veterinary specialists. 6. Principles of development, approval and application of veterinary and sanitary measures. Rules for transporting animals by different modes of transport. 7. Types of professional and administrative offenses caused by veterinary specialists in the course of their activities. 8. Legal and administrative liability of persons for offenses in veterinary medicine. 9. International veterinary organizations and their role in the formation of international veterinary rules. 10. Pathomorphology is a component for veterinary and sanitary examination. 11. General concepts of forensic veterinary autopsy. 12. Similarity of forensic veterinary autopsy. 13. Documentation for forensic veterinary examination. 14. Forensic veterinary examination based on the results of the court case. 15. Determination of falsifications of meat products by microstructural method. 16. Determination of falsifications of meat and vegetable products by microstructural method. 17. Carrying out histostructural analysis of sausages, dumplings, smoked sausages.
	Topics of independent classes: 1. To work out the main provisions of the Law of Ukraine "On Veterinary Medicine" (2006 with changes and additions). 2. Legislative requirements for the introduction of quarantine (quarantine restrictions) in unfavorable territory, in the event of an outbreak of dangerous infectious animal diseases in Ukraine. The role of emergency anti-epizootic commissions for the introduction of

	quarantine (quarantine restrictions). Draw up an act of epizootological examination of the unfavorable point (according to the individual task). 3. To develop the project of the Order of the regional state emergency anti-epizootic commission on introduction of quarantine (quarantine restrictions) on the unfavorable territory (at various infectious diseases, according to tasks). Develop a draft Ordinance on the temporary introduction of quarantine (quarantine restrictions) in unfavorable areas, or strengthening veterinary measures to complicate the epizootic situation. Develop a plan to eliminate an infectious disease for which quarantine is imposed (quarantine restrictions). 4. Legislative requirements for the implementation of state veterinary and sanitary control and supervision at controlled facilities. Legal status of state veterinary and sanitary control and supervision. Professional tact and code of conduct of officials performing the functions of state veterinary and sanitary control and supervision, their rights and responsibilities. The procedure for drawing up acts based on the results of state veterinary and sanitary control and supervision of various types of work was performed by veterinary specialists. 5. Principles of development, approval and application of veterinary and sanitary measures. Rules for transporting animals by different modes of transport. 6. Types of professional and administrative offenses caused by veterinary specialists in the course of their activities. 7. Legal and administrative liability of persons for offenses in veterinary medicine. 8. International veterinary organizations and their role in the formation of international veterinary rules. 9. Appointment of a forensic veterinary expert, his rights, duties, responsibilities. Withdrawal of an expert. 10. Acquaintance with the court case and examination of material evidence. Forensic examination of the hair. 11. Forensic examination of an animal carcass. Execution of documentation on the results of the autopsy. 12. Examination of poisonings by toxins of fungal origin: aspergillosis, aspergilotoxicosis, fusariotoxicosis, stachybotriotoxicosis. Approaches to the diagnosis of poisoning. 13. Examination of mechanical damage to animal tissues. 14. Examination of stillbirth. 15. Examination of strangulation of animals on a leash. 16. Diagnosis of lifelong and postmortem swelling of animals. 17. Examination for blood loss.
Recommended Books:	1. Konstytutsiya Ukrayiny. [The Constitution of Ukraine] – Kharkiv: «Odissey», 2010. – 55 s. 2. Zakon Ukrayiny “Pro veterynarnu medytsynu” [Law of Ukraine "On Veterinary Medicine"] // Vidomosti Verkhovnoyi Rady Ukrayiny – 2006. №14. – 116 s. 3. Kodeks Zakoniv pro pratsyu Ukrayiny. [Labor Code of Ukraine.] – K., 2012. – 103 s. 4. Kodeks Ukrayiny pro administratyvni pravoporushennya [Code of Ukraine on Administrative Offenses] – Kharkiv: «Odisey», 2012. – 272 s.

	5. Zakon Ukrayiny “Pro osnovni pryntsypy ta vymohy do bezpechnosti ta yakosti kharchovykh produktiv” [Law of Ukraine "On Basic Principles and Requirements for Food Safety and Quality"]. (Ofits. vyd. 2014 r). 6. Zakon Ukrayiny “Pro derzhavnyy kontrol′ za dotrymannyam zakonodavstva pro kharchovi produkty, kormy, pobichni produkty tvarynnoho pokhodzhennya, zdorov'ya ta blahopoluchchya tvaryn [Law of Ukraine “On State Control over Observance of the Legislation on Foodstuffs, Feeds, By-Products of Animal Origin, Animal Health and Welfare] (Vidomosti Verkhovnoyi Rady (VVR), 2017, № 31, st.343) 7. Veterynarne pravoznavstvo Ukrayiny. [Veterinary jurisprudence of Ukraine] Pidruchnyk / I.V. Yatsenko, V.V. Kam″yans′kyy, M.M. Bondars′kyy ta in. – Kharkiv: «Disa plyus», 2015. ¬¬– 392 s. 8. Planuvannya veterynarnykh zakhodiv [Planning of veterinary measures]: navch. posib., 2-he vyd., dop. i pererob. / L.M. Korniyenko, L.YE. Korniyenko, B.M. Yarchuk; Za red. L.M. Korniyenko. – Bila Tserkva, 2016. – 364 s. 9. Robochyy zoshyt dlya samostiynoyi pidhotovky ta provedennya praktychnykh zanyat′ u bakalavriv, spetsialistiv i mahistriv veterynarnoyi medytsyny z kursu “Orhanizatsiya ta ekonomika veterynarnoyi spravy” [Workbook for self-preparation and practical training for bachelors, specialists and masters of veterinary medicine in the course "Organization and economics of veterinary affairs"] / Bilotserkiv. natsion. ahrar. un-t: Skl.: L.M. Korniyenko. – Bila Tserkva, 2019. – 94 s. 10. Nakaz DVFSSU vid 16.01.2016 r. №36 «Pro reorhanizatsiyu terytorial′nykh orhaniv Derzhvetfitosluzhby» ["On reorganization of territorial bodies of the State Veterinary and Phytosanitary Service"] shlyakhom pryyednannya yikh do vidpovidnykh terytorial′nykh orhaniv Derzhprodspozhyvsluzhby. 11. POLOZHENNYA Pro Derzhavnu sluzhbu Ukrayiny z pytan′ bezpechnosti kharchovykh produktiv ta zakhystu spozhyvachiv [PROVISIONS On the State Service of Ukraine for Food Safety and Consumer Protection], yake zatverdzhene Postanovoyu KMU № 667 vid 2 veresnya 2015 r. 12. Praktykum iz zahal′noyi epizootolohiyi [Workshop on general epizootology] / [L.YE. Korniyenko, B.M. Yarchuk, R.V. Tyrsin ta in.] 2-he vyd., per. i dop. (L.M. Korniyenko) // Bila Tserkva, 2018. – 352 s. 13. Urbanovych P.P. Patolohichna anatomiya tvaryn. [Pathological anatomy of animals] // P.P. Urbanovych, M.K. Potots′kyy, I.I. Hevkan ta in. /Navchal′nyy posibnyk / Kyyiv. Vetinform, 2008.– 879 s. 14. Veterynarno-sanitarna ekspertyza z osnovamy tekhnolohiy i standartyzatsiyi produktiv tvarynnytstva [Veterinary and sanitary examination with the basics of technology and standardization of livestock products] / [Yakubchak O. M., ta in.] ; za red. O.M. Yakubchak. – K. : TOV «Bioprom», 2005. – 800 s. 15. Zon H. A. Sudovo-veterynarna ekspertyza [Forensic veterinary examination] / Navch. posibn.; Zon H. A. – Sumy: Vyd.-vyrobn. pidpr-vo "Mriya-1", 2002. – 258 s.

	16. Kokurychev P.Y., Dobyn M.A. Osnovy sudebno-veterynarnoy ékspertyzy. [Fundamentals of forensic veterinary examination] – L.: Kolos, 1985. – 277 s. 17. Obraynov V.P. Sudebno-veterynarnaya ékspertyza. [Forensic veterinary examination.] - K.: Urozhay.: 1979, – 240 s. 18. Zharov A.V. Sudovaya veterynarnaya medytsyna [Forensic veterinary examination] / A.V. Zharov – M.: Kolos. 2001. – 264 s. 19. Papchenko I. V., Tyrsina YU. M., Utechenko M. V. Patoloho-anatomichnyy roztyn trupiv sil′s′kohospodars′kykh tvaryn z osnovamy sudovoyi veterynariyi : metodychni rekomendatsiyi dlya studentiv osvitn′oho rivnya – mahistr ta slukhachiv Instytutu pislyadyplomnoho navchannya. [Pathological and anatomical autopsy of farm animals with the basics of forensic veterinary medicine: guidelines for students of educational level - masters and students of the Institute of Postgraduate Education.] Bila Tserkva, 2019. 47 s.
Teaching language	Ukrainian

Structure of discipline by types of classes

Subject	A	B	C	D	E	F	G	H
Veterinary legislation	**16**	**–**	**28**	**16**	**–**	**–**	**–**	**60** (2 **ECTS**)
Forensic Medicine	**16**	**–**	**28**	**8**	**–**	**8**	**–**	**60** (2 **ECTS**)

A - lectures**; B -** seminars**; C -** controlled self-study**; D -** laboratory and descriptive work**; E -** non-clinical work on animals**; F -** Clinical work on animals**; G -** others (specify)**; H -** together.

The date of the latest program modification	28.06. 2020

Name of the university: Bila Tserkva National Agrarian University	
Name of the faculty: Faculty of Veterinary Medicine	
Subjects	**ZOONOSES AND THE CONCEPT OF SINGLE HEALTH**
Teachers	Taras Tsarenko, PhD, DVM; Oksana Khitska, PhD, DVM; Iryna Rublenko, doctor habilitated, DVM; Lyudmila Solovyova, PhD, DVM
Forms of study: Lectures / practical **Volume of study loading: ECTS credits - 4 (120 hours);** **Weekly workload: 10 semester - 4 (2/2)** **Student attendance: required**	
Course and semester in which the discipline is planned to be studied	5 year, 9 semester
Prerequisites for studying the discipline	«Safety, quality of food and feed "," Hygiene of food "," Veterinary microbiology "," Food microbiology "," Epizootology, infectious diseases and preventive medicine "," Parasitology and invasive diseases "
Methods of knowledge control	Exam
Learning outcomes and competencies	Students must know and be able to: Knowledge:

	- know the elements of the concept of "Single Health" and their application in zoonosis control programs; - know the patterns of development of the epizootic process, the etiology and pathogenesis of zoonotic diseases of animals and ways to prevent them and prevent their spread to humans; - know the prevalence of bacterial, viral and parasitic pathogens in populations of different species of animals and methods for assessing the risks of spreading zoonoses, including humans; - understand the impact and consequences of common zoonoses and diseases on human health and know where to find relevant information; - understand regulatory procedures if zoonotic pathogens are suspected. - know the requirements of current domestic, European and international regulations governing the requirements for food safety and the algorithm of action in case of zoonoses, the pathogens of which can be transmitted through food; - know the procedures for monitoring, forecasting and development of preventive measures for the occurrence and spread of zoonoses, the pathogens of which are transmitted through food. Skill: - be able to organize effective intersectoral cooperation based on the concept of "Single Health" at the local, regional and national levels; - be able to collect and critically analyze data on the prevalence of zoonoses in the region; - be able to assess the risks of zoonoses in populations of different species of animals and among humans; - be able to develop and implement programs to control zoonotic diseases; - to monitor and analyze the risks of pathogens of dangerous animal diseases that can be transmitted to humans through food; - carry out traceability and apply procedures for withdrawal of dangerous food products; - if necessary, to participate in investigations aimed at establishing the causes and conditions that lead to the entry into circulation of dangerous food products; - exercise state control and analyze the effectiveness of systems that ensure food safety and are based on objective scientific criteria, including risk analysis.
Description of the discipline	
The base of the discipline	Classrooms
Topics of classes	**Lecture topics:** **Module 1. Zoonoses of bacterial origin (Rublenko IO)** 1. The concept of "Single Health" - intersectoral cooperation between WHO, FAO and the OIE on the interface "human-animal-environment" in the control of zoonoses. 2. Bacterial zoonoses of productive animals. 3. Bacterial zoonoses of domestic and exotic animals 4. Natural focal and vector bacterial zoonoses.

	Module 2. Zoonoses of viral origin (Tsarenko TM) 1. Viral zoonoses of productive animals. 2. Viral zoonoses of domestic animals and exotic animals. 3. Natural focal and vector viral zoonoses. 4. Zoonoses as biological weapons and bioterrorism. **Module 3. Parasitosis-zoonoses (Solovyova LM).** **1.** Introduction. Definition, content, concept of parasitosis-zoonoses, mechanism and ways of distribution of pathogens of zoonoses (Trematodoses, cestodes). 2. Tissue helminthiasis-zoonoses (teniosis-cysticercosis). 3. Synanthropic and natural foci of helminthiasis-zoonoses (trichinosis, granulosa and multilocular echinococcosis). The role of man in the spread of zoonoses-helminthiasis. 4. Features of biological development of pathogens of nematodes-zoonoses (toxocariasis, heartworm disease). Ways of circulation, conditions that contribute to their spread and infection of people. **Module 4. Foodborne diseases (Zoonoses) (Khitska OA)** **1**. Food zoonoses. Foodborne diseases (zoonoses) - Presentations (characteristics of the most common food zoonoses (bacterial, viral, parasitic), ways of food contamination). 2. Crisis Preparedness & Management. Preparedness and prevention of outbreaks of food-borne diseases through an integrated approach: consolidation of framework documents, plans and strategies to control zoonoses, proper hygiene, restrictions on residues of hazardous substances used in the food chain, own inspections, official controls, etc. Crisis management in outbreaks of food zoonoses. Coordination of the investigation of food zoonoses in the field of human health (information on human diseases), the agricultural sector, information and communication with citizens and trading partners, advice to travelers. **3.** European experience in food risk management of zoonoses. European legislation, control programs for food zoonoses and evaluation sheets for control programs for the most common zoonoses. Directive 2003/99 / EC of the European Parliament and of the Council of 17 November 2003 on the monitoring of zoonoses and zoonotic agents. Development of databases for molecular testing of foodborne pathogens, given the readiness for outbreaks. The role and activities of the European Food Safety Authority (EFSA) and the European Center for Disease Prevention and Control (ECDC): tasks, structure, data collection and analysis, EFSA monitoring and risk assessment .
	Topics of practical classes: **Module 1. Zoonoses of bacterial origin (Rublenko IO)**1. European experience in risk management of bacterial zoonoses. The concept of "Single Health". 2. Crisis preparedness and management. National monitoring and control programs. Analysis of the epidemiological situation and

	monitoring of bacterial zoonoses: analysis of monitoring and final reports of the EU, prevention and control of bacterial diseases (European Center for Disease Prevention and Control - ECDC). Diseases that can infect humans from animals. Anthrax, tularemia, leptospirosis, rickettsiae. 3. Bacterial zoonoses (Bacteria zoonoses). Investigation and analysis of outbreaks of the most common bacterial zoonoses. Bacterial risk analysis. Insect vectors. Live animal markets. The wild nature.4. Семінар по Модулю 1. **Module 2. Zoonoses of viral origin (Tsarenko TM)** **1.** Viral zoonoses of productive animals. Current threats of viral zoonoses in industrial livestock, risk detection and control. 2. Viral zoonoses of domestic and exotic animals. Viral zoonoses of dogs, cats, rodents and exotic birds. Risks of introduction of exotic viral zoonoses from other regions of the world. 3. Natural focal and vector viral zoonoses. Stationary distress of viral zoonoses, vector zoonoses and their distribution due to climate change. 4. Workshop on Module 2. **Module 3. Parasitosis-zoonoses (Solovyova LM).** **1**. Zoonoses-parasitosis of productive animals. Current status of zoonoses-parasitosis in industrial livestock and their prevention. 2. Zoonoses-parasitosis of domestic and exotic animals. Zoonoses-parasitosis of dogs, cats and exotic birds. 3. Natural focal zoonoses-parasitosis. Study of the epidemic situation in the region of zoonoses-parasitosis and development of plans for prevention and control. 4. Workshop on Module 3. **Module 4. Foodborne diseases (Zoonoses) (Khitska OA)** 1. Food zoonoses. Investigation and analysis of outbreaks of the most common food zoonoses. Risk analysis. 2. Crisis Preparedness & Management. National programs for monitoring and control of biologically dangerous factors - zoonotic agents that can be transmitted through foodborne diseases. Analysis of the epidemiological situation and monitoring of food zoonoses: analysis of monitoring and final reports of the EU, jointly prepared by the European Food Safety Authority (EFSA) and the European Center for Disease Prevention and Control (ECD). 3. European experience in risk management of food zoonoses. EFSA's BIOHAZ Panel (Panel on Biological Hazards) as a scientific advisor on the biological hazards and safety of food, including zoonotic diseases transmitted with food; Better Training for Safer Food (BTSF) is an initiative of the European Commission aimed at developing a training strategy in the areas of food law, feed law, animal health and animal welfare. 4. Workshop on Module 4.
Literature recommended	1. **Межотраслевой подход «Единое Здоровье»: трехстороннее руководство по решению проблемы зоонозов в странах [Taking a Multisectoral,One Health Approach: A Tripartite Guide to Addressing**

	Zoonotic Diseases in Countries] / Всемирная организация здравоохранения (ВОЗ), Продовольственная и сельскохозяйственная организация Объединенных Наций (ФАО) и Всемирная организация по охране здоровья животных (МЭБ), 2019. 178с. http://www.fao.org/publications/card/en/c/CA2942RU 2. Foodborne disease outbreaks: guidelines for investigation and control / World Health Organization. 2008. 162p. https://www.who.int/foodsafety/publications/foodborne_disease/outbreak_guidelines.pdf . 3. One Health: The Theory and Practice of Integrated Health Approaches. by Jakob Zinsstag, Esther Schelling, David Waltner-Toews, Maxine Whittaker, Marcel Tanner. March 2015 4. Future trends in veterinary public health. WHO Tech. Rep. Series 907. WHO, 2002. https://apps.who.int/iris/handle/10665/42460 5. Zoonoses-Infections affecting humans and animals: Focus on public health aspects / Sing, Andreas, ed.. Springer, 2014. 6. Поширені в Україні паразитози-зоонози: особливості епізоотології, діагностика та заходи боротьби: методичні рекомендації / Ю.Г. Артеменко, Л.П. Артеменко, С.І. Пономар та ін. – Київ: ДНДІЛДВСЕ, 2014. – 118 с. 7. Zoonoses: infectious diseases transmissible from animals to humans / Krauss, H., Weber, A., Appel, M., Enders, B., Isenberg, H. D., Schiefer, H. G., ... & Zahner, H. (2016). (p. 456). Washington, DC: ASM press.
Language of instruction	Ukrainian

The structure of the discipline by type of occupation

Subject	A	B	C	D	E	F	G	H
Zoonoses and the concept of single health	**32**	**8**	**56**	**24**		**-**	**-**	**120 (4 credits)**
	8	2	14	6	-	-	-	Episootology. 30 (1 credit)
	8	2	14	6	-	-	-	Parasitology. 30 (1 credit)
	8	2	14	6	-	-	-	Microbioligy. 30 (1 credit)
	8	2	14	6	-	-	-	VSE 30 (1 credit)

A: lectures; B: seminars; C: controlled self-study; D: laboratory and descriptive work, E: non-clinical work on animals; F: clinical work on animals; G: others (specify); H: total

Date of the last modification of the program	Developed for the first time for 2020-2021 academic year.

MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE
BILA TSERKVA NATIONAL AGRARIAN UNIVERSITY

Faculty of Veterinary Medicine

CATALOG OF ANNOTATIONS
OF ELECTIVE DISCIPLINES FOR FVM BNAU STUDENTS

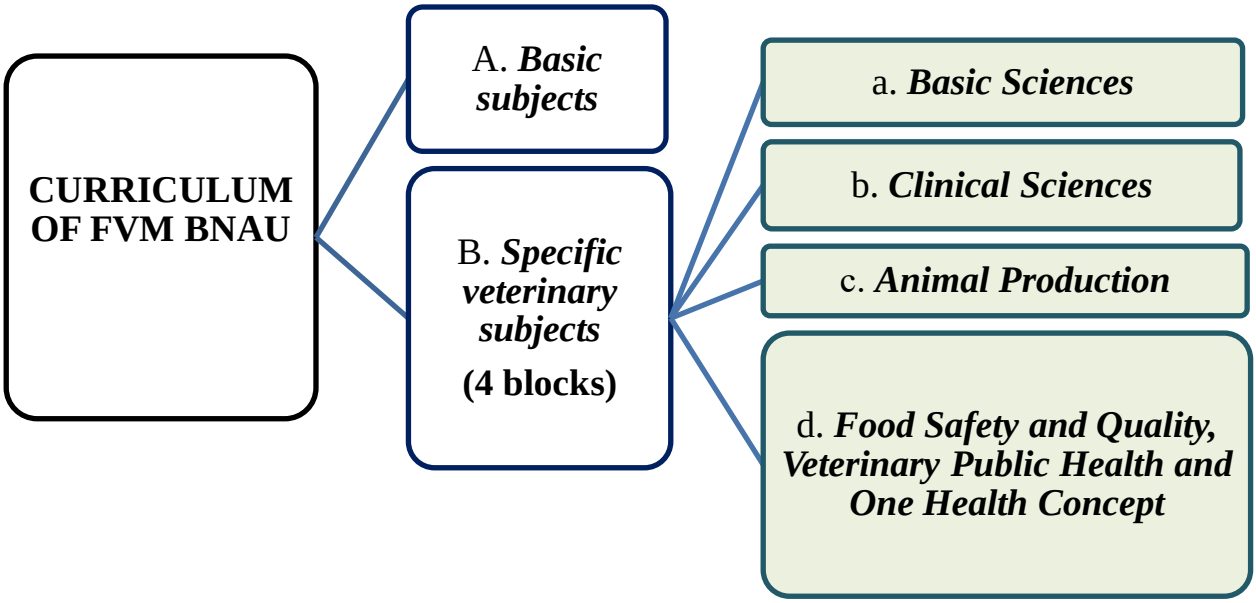
Field of knowledge: **21 “Veterinary medicine”**

Specialty: **211 "Veterinary Medicine"**

Level of higher education: **second (master's)**

Bila Tserkva

The catalog contains an annotated list of disciplines for individual blocks, which are offered for selection by students of the Faculty of Veterinary Medicine of the second (master's) level of higher education in accordance with the curriculum:



The election procedure is described in the "Regulations on elective courses at Bila Tserkva National Agrarian University": https://education.btsau.edu.ua/node/8

A. *Basic subjects*

Name of the university: Bila Tserkva National Agrarian University	
Name of the faculty: Faculty of Ecology	
Subject	**LIFE SAFETY AND CIVIL PROTECTION**
Teachers	Rozputny Oleksandr Ivanovych, doctor habilitated; Pertsovyi Ivan Vasilyevich, PhD; Gerasimenko Victor Yurievich, PhD.
Forms of study: Lectures / laboratory **Volume of study loading: ECTS credits - 3 (90 hours);** **Weekly workloading: 1 semester - 3 (1/2);** **Student attendance: required**	
Course and semester in which the discipline is planned to be studied	1 year, 1 semester
Prerequisites for studying the discipline	Does not have
Methods of knowledge control	test
Learning outcomes and competencies	Students must know and be able to: **Knowledge:** - legislative, normative-legal, technical and sanitary-hygienic bases on life safety and civil protection of the population and workers; - methods of analysis and risk assessment of hazards at workplaces and production facilities; - methods of forecasting emergencies, measures to prevent them, protect workers, the population, property, localization and elimination of their consequences. **Skill:** - to ensure effective management of life safety and civil protection within its competence in office; - identify harmful and dangerous factors in the environment and assess their impact on human health; - assess sanitary and hygienic conditions, risks and level of occupational safety; - choose and use means of collective and personal protection; - organize and conduct training on life safety, fire, man-made safety and civil protection; - assess the impact factors during emergencies and their impact on human health;

	- develop measures to prevent and reduce injuries and diseases of workers, improve working conditions and safety, accident prevention and response plans. - provide first aid to the victim.
Description of the discipline	
The base of the discipline	Auditoriums and laboratory of the department of life safety activity
Topics of classroom lessons	- Safety of life of the population and workers as an integral part of sustainable development of human society; - Hazards and emergencies and their assessment and forecasting; - Organization, management, legal regulation of life safety and labor protection; - Occupational hygiene and prevention of occupational diseases in veterinary medicine; - Occupational safety during the treatment of animals, laboratory tests and veterinary and sanitary measures; - Fire safety; - Civil protection as a function of protection of the population, territories, environment and property from emergencies; - Unified state system of civil protection, its components and modes of operation; - Organization of civil protection at the object of economic activity; - Protection of the population, territories, environment and property from emergencies - Providing home care to the victim
P67–69 recommended literature:	1. Безпека життєдіяльності: Навчальний посібник / Зацарний В.В., Праховнік Н.А., Землянська О.В., Зацарна О.В. – К.: НТУУ КПІ ІЕЕ, 2016. – електронне видання. URL: http://ela.kpi.ua/kandle/123456789/18263. 2.Цивільний захист. Навчальний посібник /Зеркалов Д.В., Міхеєв Ю. В., Праховник Н.А., Землянська О. В; під редакцією Д. В. Зеркалова. – К.: «Основа». 2014. – 234 с. 3. Охорона праці та цивільний захист: Підручник / О.Г. Левченко [та ін.] ; під ред. О. Г. Левченка. – Київ: КПІ ім. Ігоря Сікорського, 2019. – 420 с. 4. Войналович О. В. Охорона праці у ветеринарній медицині: підручник / О. В. Войналович, Т. О. Білько, Є. І. Марчишина. – К. :Центр учбової літератури, 2016. – 554 с. 5. Основи професійної безпеки та здоров'я людини : підручник / В. В. Березуцький [та ін.] ; під ред. проф. В. В. Березуцького. – Харків : НТУ ХПІ, 2018. – 553 с. 6. Березуцький В. В. Ризик орієнтований підхід в охороні праці / В. В. Березуцький. – LAP, 2019. – 108 с. 7. Безпека людини у сучасних умовах : монографія / В. В. Березуцький [та ін.] ; заг. ред. В. В. Березуцький. Нац. техн. ун-т Харківський політехн. ін-т. – Харків : ФОП Мезіна В., 2018. – 208 с.

	8. Березуцький В. В. Небезпечні виробничі ризики та надійність : навч. посібник / В. В. Березуцький, М. І. Адаменко. – Харків : ФОП Панов А., 2016. – 385 с.
Language of instruction	Ukrainian

The structure of the discipline by type of occupation

A lectures	B seminars	C Self-education	D laboratory	E non-clinical with animals, models	F Clinical with animal models	G other	H total
16	–	42	32	–	–	–	90

Date of the last modification of the program	28.08.2019 p.

Name of the university: Bila Tserkva National Agrarian University	
Name of the faculty: Faculty of Ecology	
Subject	**OCCUPATIONAL SAFETY IN VETERINARY MEDICINE**
Teachers	Rozputny Oleksandr Ivanovych, doctor habilitated; Pertsovyi Ivan Vasilyevich, PhD; Gerasimenko Victor Yurievich, PhD.
Forms of study: Lectures / laboratory **Volume of study loading: ECTS credits - 3 (90 hours);** **Weekly workloading: 1 semester - 3 (1/2);** **Student attendance: required**	
Course and semester in which the discipline is planned to be studied	1 year 1 семестр
Prerequisites for studying the discipline	Does not have
Methods of knowledge control	test
Learning outcomes and competencies	Students must know and be able to: Knowledge: - legislative, normative-legal, technical and sanitary-hygienic bases of labor protection and life safety; - methods of analysis and risk assessment of hazards at workplaces and production facilities; - methods of forecasting emergencies, measures to prevent them, protect workers, the population, property, localize and eliminate their consequences. Skill: - to ensure effective management of labor protection, fire and man-made safety;

	- assess the sanitary and hygienic working conditions, risks and level of occupational safety; - organize and conduct training on labor protection, fire, man-made safety; - develop measures to prevent and reduce injuries and diseases of workers, improve working conditions and safety, accident prevention and response plans.
Description of the discipline	
The base of the discipline	Classrooms and laboratory of the Department of Life Safety Activity
Topics of classroom classes	– Organization and management of labor protection and life safety; - Legal regulation of occupational safety and health; - Occupational hygiene and prevention of occupational diseases in veterinary medicine; - Occupational safety during treatment of animals, laboratory tests and veterinary and sanitary measures; - Fire and man-made safety; - Hazards and emergencies: definition, their characteristics and classification; - Protection of the population, territories, environment and property from emergencies; - Organization of training and briefings on occupational safety and health; - Development of instructions on labor protection; - Collective agreement and development of labor protection measures; - Investigation of accidents and occupational diseases; - Determining the parameters of the microclimate and lighting of the premises; - Certification of jobs under working conditions; - Providing employees with personal protective equipment; - Occupational safety in the treatment of animals and veterinary and sanitary measures; - Occupational safety in veterinary laboratories; - Calculation of risks of danger sources; - Identification and declaration of safety of high-risk objects; - Calculation of provision of objects, premises and buildings with primary fire extinguishing means; - Organization and planning of measures to protect the population and territories in emergencies; - Providing home care to the victim in case of accidents.
recommended literature:	1. Войналович О. В. Охорона праці у ветеринарній медицині: навчальний підручник / О. В. Войналович, Т. О. Білько, Є. І. Марчишина. – К. :Центр учбової літератури, 2016. – 554 с. 2. Березуцький В. В. Ризик орієнтований підхід в охороні праці / В. В. Березуцький. – Харків: LAP, 2019. – 108 с.

	3. Березуцький В. В. Небезпечні виробничі ризики та надійність : навч. посібник / В. В. Березуцький, М. І. Адаменко. – Харків : ФОП Панов А. М., 2016. – 385 с. 4. Основи професійної безпеки та здоров'я людини : підручник / В. В. Березуцький [та ін.] ; під ред. проф. В. В. Березуцького. – Харків : НТУХПІ, 2018. – 553 с. 5. Охорона праці та цивільний захист: Підручник / О.Г. Левченко [та ін.] ; під ред. О. Г. Левченка. – Київ: КПІ ім. Ігоря Сікорського, 2019. – 420 с. 6. Безпека людини у сучасних умовах : монографія / В. В. Березуцький [та ін.] ; заг. ред. В. В. Березуцький.. – Харків : ФОП Мезіна В. В., 2018. – 208 с.
Language of instruction	Ukrainian

The structure of the discipline by type of occupation

A lectures	B seminars	C Self-education	D laboratory	E non-clinical with animals, models	F Clinical with animals	G other	H total
16	–	42	32	–	–	–	90

Date of the last modification of the program	28.08.2019 p.

Subject	**PHILOSOPHY**
Teacher	Melnyk Lyudmyla Mykolayivna, Head of the Department of Theoretical-Legal and Social-Humanitarian Disciplines; Yarmola Oleksandr Volodymyrovych, Associate Professor of the Department of Theoretical-Legal and Social-Humanitarian Disciplines
Course and semester in which the discipline is planned to be studied	1 (2-semester)
Faculties whose students are invited to study the discipline	Veterinary medicine
List of competencies and relevant learning outcomes provided by the discipline	As a result of studying the discipline, students must: Knowledge • definition of basic philosophical categories and concepts; • the main content of the topics of all sections of the program; • to be guided in the traditions of philosophical thinking formed in the context of world, general civilizational dimensions. Skills • - to analyze the mastered material;

	• to defend one's own point of view on debatable problems of both domestic and foreign philosophical thought; • use the acquired philosophical knowledge in the analysis of ideological and methodological problems of modern scientific knowledge; • to form and substantiate their own position on current issues.
Description of the discipline	
Prerequisites required for the study of the discipline	History and culture of Ukraine and the world
The maximum number of students who can study at the same time	25
Topics classroom lessons	Topics of practical classes: 1. Philosophical thought of the Ancient East. 2. Ancient philosophy. 3. Philosophy of the Middle Ages and the Renaissance. 4. German classical philosophy. 5. Non-classical philosophy of the XIX century. 6. Modern world philosophical thought. 7. History of Ukrainian philosophy. 8. Dialectics 9. The problem of consciousness in philosophy. 10. Science as a subject of philosophical research. 11. Philosophical anthropology. 12. Social philosophy. 13. Philosophy of culture. 14. Philosophical doctrine of values 15. Final lesson. Modular control work. Performing test tasks, writing an essay.
Literature recommended	
	1. Філософія історії: підручник /О.А. Габрієлян., І.І. Кальной – К.: Академвидав, 2011. – 213 с. 2. Філософія: Підручник / Бичко І.В., Бойченко І.В., Табачковський В.Г. та ін. – К.: Либідь, 2010. – 408 с. Шифр Ю/Ф561 3. Філософія як історія філософії: підручник / За ред. В.І.Ярошевця. – К.: Центр учбов. л-ри, 2012 – 648 с. 4. Філософія [Текст]: підруч. для студ. вищ. навч. закл. / [Л. В. Губерський та ін.; за ред. Л.В. Губерського]. – Х.: Фоліо, 2013. – 509 с. 5. ПричепійЄ.М. Філософія: підручник /Є.М. Причепій, А.М.Черній, Л.А.Чекаль. – 4 вид., випр. – К.: Академвидав, 2015. – 592с 6. Філософія [Текст]: підруч. для студ. вищ. навч. закл. / [Л. В. Губерський та ін.; за ред. Л.В. Губерського]. – Х.: Фоліо, 2013. – 509 с.

	7. Щерба С. П. Філософія [Текст] : підруч. для студ. вищ. навч. закл. / С. П. Щерба, О. А. Заглада; за ред. д-ра філос. наук, проф. С. П. Щерби. - Житомир : Полісся, 2012. - 547 с. 8. Вовк В.М., Петрова Г.М., Чернєй В.В. Історія філософії: опорний конспект: К.: Атіка, 2012. – 275 с. 9. Головашенко І. О. Філософія [Текст] : навч. посіб. / І. О. Головашенко. - Вінниця : ВНТУ, 2016. - 200 с. 10. Губар О.М. Філософія: інтерактивний курс лекцій: навч. посібник. К.: Центр учбов. л-ри, 2012 – 416 с. Шифр Ю/Г-93

The structure of the discipline by type of occupation

A lectures	B seminars	C Self-education	D laboratory	non-clinical with animals, models	F Clinical with animals	G other	H total
16	32	42					90 (3 credits)

Date of the last modification of the program	27.08.2019 p.

B. *Specific veterinary subjects*

a. *Basic Sciences*

Course title	**THE METHODOLOGY OF RESEARCH**
Teacher	Mykola Nishmenenko Doctor of Veterinary Science, Professor of the Department of Normal and Pathological Physiology of Animal
Course and semester	5 M course, 9 semester
Faculties	Faculty of Veterinary Medicine
List of competences and relevant learning outcomes provided by the discipline	The result of teaching the discipline is the acquisition of the following knowledge and skills of the master students. The success of the study is largely determined by the preparation of the master's degree. This requires performing professional tasks, and the use of research methods. Research methods are a system of measures aimed at solving certain tasks in accordance with the set goal. That is why the students have **to know:** - discipline "Research Methodology" forms the foundation of a future researcher in the system of veterinary medicine. Large masses of people, numerous scientific teams, material resources are involved in the production of the scientific product; - in the conditions of intensive growth of volumes of scientific and scientific-technical information, updating of systems of scientific knowledge there is a need for qualitatively new theoretical training of highly qualified specialists, capable of independent creative work,

	introduction into production of scientific-capacious technologies and adaptation to the conditions of market relations. - Veterinary medicine is a complex multifaceted science which needs are constantly growing. Each of the disciplines of the veterinary doctor's training program is specific, with its own principles and requirements for the organization of educational and scientific work. However, they are all based on a single methodology and uniform requirements. In the system of educational and scientific work of the higher school there are unified organizational approaches, common, without which it is impossible to begin neither studies nor scientific researches. It is no coincidence that the program of training of specialists in most higher education sectors includes a course "Fundamentals of Scientific Research". - the concept of "technique" has a very narrow meaning, because it solves individual fragments of the question, it provides the receipt of separate facts about a particular object (body temperature, animal weight, blood sugar content); - "method" is a fundamentally more general approach to solving the basic problems of scientific knowledge, which also includes theory and relies on a set of techniques that allow us to study the main essential aspects of the object or phenomenon under study. The students have to **be able:** - to apply theoretical studies based on axioms, laws, principles, postulates and theorems, when performing tasks, their value is that they do not require repetition, verification, confirmation; - a special place in scientific work is played by methods of analysis of the material under study, which include logical (this is hypothetical and axiomatic) and historical methods that allow to study the formation and development of processes in chronological order; - be able to use the methods of biological research, which include: observation, examination, comparison, as well as experiment; the latter is a kind of criterion for scientific truth, but for that it must be "pure" and reproducible, that is, so that it can be repeated to other researchers; - be able to use different models to facilitate the process of knowledge of the world in the early stages of research, that is, to use modeling of research, which can be physical, natural and mathematical; - to use statistical methods of evaluation of the conducted experiments, since the main part of any research is measurements. The accuracy and reliability of the case depends on them.
Description of the discipline	
Prerequisites necessary for the study	None
Maximum number of students in one group	12
Classroom topics	Lecture topics: 1. Introductory Lecture: The main stages of formation of higher education and science in Ukraine.

	2. Modern education and science in Ukraine. 3. Higher education in Western Europe. Education and Science in the US and Canada. 4 Science and its role in society. 5. Principles of scientific knowledge and functions of science. 6. Ukrainian Academy of Sciences, its foundation and development. 7. Science and its problems. Science as a sphere of human activity. 9. Scientific and technological progress and its forecasting. Practical topics. Theme 2. History of Science. Topic 3. Science as the subject dealing with facts. Theme 4. Science - the sphere of human activity. Theme 5. Science and its main tasks Topic 6. Components of the general cycle of disciplines Theme 7. Basic principles of conducting experiments on animals. Theme 8. Features of general biological, zootechnical, clinical research methods used in animal husbandry Topic 9. Production verification of research implications. Writing and defending an abstract on a selected topic.
Language of instruction	Ukrainian

Name of the university: Bila Tserkva National Agrarian University	
Name of the faculty: Faculty of Veterinary Medicine	
Subject	**APPLIED CYTOLOGY AND HISTOLOGY**
Teacher	Mykola Utechenko, PhD, DVM
Forms of study: Lectures / laboratory **Volume of study loading: EKTS credits - 4 (120 hours);** **Weekly loading:** **Student attendance: required**	
Course and semester in which the discipline is planned to be studied	2 year, 4 semester
Prerequisites for studying the discipline	"Animal Anatomy", "Cytology, Histology, Embryology", "Animal Physiology", "Pathological Physiology"
Methods of knowledge control	Test
Learning outcomes and competencies	***Knowledge:*** *- know the structural and functional organization of living organisms at the micro- and macroscopic level* *- in-depth knowledge of cell biology (cytology);* *- in-depth knowledge of organ histology* *Skill:*

	- have in-depth practical skills in working with a light microscope *- be able to interpret the results of cytology, histology.*
Description of the discipline	
The base of the discipline	Classrooms, histological research laboratory
Topics of classroom classes	Lecture topics: Cell biology (cytology) as a basis of modern biological knowledge. Biosafety. Technique of taking cytological and histological material. - Methods of cytological, histological examinations. - Preparation of cytological, histological preparations. - Preparation of material for cytological examinations. Staining of drugs. - Organ cytological, histological examinations. - Cytological, histological studies of individual infectious organisms. - General principles of interpretation of cytological, histological preparations. Topics of laboratory classes: - Subject and tasks of cell biology (cytology). Current issues addressed by modern cytology. Biosafety. - The structure of the light microscope. Rules for working with a light microscope. - Types of cytological drugs. - Types of material for cytological examinations. Rules for taking material. - Methods of in vivo cell research. - Technique of selection of cytological and histological material. - General principles of interpretation of cytological, histological preparations. - Cytological examination: lymphoid tissue; skin and subcutaneous injuries; respiratory system; synovial fluid; eyes and appendages; urinary tract; liver, pancreas and digestive tract; endocrine glands; reproductive system; damaged breast; assessment of effusions of body cavities; - General principles of cytological examination of individual infectious organisms. - Cytological, histological examination: bacterial infections; viral infections; fungal infections;

	protozoan, parasitic infections.
Literature recommended	1. Дзержинський М.Е. та ін. Загальна цитологія і гістологія. – К., 2010. 2. Гистология. / Под ред. Афанасьева Ю.И., Юриной Н.А. – М.: Медицина, 2002. 3. БиковВ. Л. Цитология и общая гистология. — СПб., 1999. – 152 с. 4. Цитологические исследования у собак и кошек. Справочное руководство / Под одщей редак. Дж. Данна / Пер. С англ. Е. Поляковой. М.: ”Аквариум Принт”, 2016 – 256 с. 5. Горальський Л.П. Основи гістологічної техніки і морфо-функціональні методи дослідження у нормі та при патології / Л. П. Горальський, В. Т. Хомич, О. І. Кононський. - Житомир : „Полісся”, 2005 - 288 с.
Language of instruction	Ukrainian

The structure of the discipline by type of occupation

Subject	A	B	C	D	E	F	G	H
Applied cytology and histology	16		56	20		28	-	120 4 credits

Date of the last modification of the program	28.08.2019 p.

Name of the university: Bila Tserkva National Agrarian University	
Name of the faculty: Faculty of Ecology	
Subject	**RADIOBIOLOGY**
Teachers	Rozputny Oleksandr Ivanovych, doctor habilitated; Pertsyovyi Ivan Vasilyevich, PhD; Gerasimenko Victor Yurievich, PhD.
Forms of study: Lectures / laboratory **Volume of study loading: ECTS credits - 3 (90 hours);** **Weekly workloading: 6 semester - 2 (1/1);** **Student attendance: required**	
Course and semester in which the discipline is planned to be studied	3 year, 6 semester
Prerequisites for studying the discipline	«Biophysics "," Chemistry "," Animal Anatomy "," Cytology, Histology, Embryology "," Genetics and Molecular Biology of the Cell "," Animal Physiology "

Methods of knowledge control	test
Learning outcomes and competencies	Students must know and be able to: Knowledge: - patterns of migration of radionuclides through trophic chains of ecosystems, their accumulation in feed, animals, milk, meat and other livestock and crop products; - principles and measures of agricultural production in radioactively contaminated areas; - the effect of ionizing radiation on the animal's body; - legal regulation in the field of radiation safety and radioactive waste management; - normalization of the content of radionuclides in food products and other products of crop and livestock production, drinking water; - principles and measures of radiation safety when working with sources of ionizing radiation and radioactive substances. Skill: - to conduct dosimetric, radiometric and spectrometric studies of food products, crop and livestock products and environmental objects; - to assess the radioecological condition of environmental objects and the radiation situation in areas affected by radioactive contamination as a result of the Chernobyl disaster; - to carry out veterinary and sanitary assessment of livestock products during radiation exposure of animals and their affected by incorporated radionuclides; - to forecast the accumulation of radionuclides in crop and livestock products and to develop measures for agricultural production in radioactively contaminated areas.
Description of the discipline	
The base of the discipline	Classrooms and laboratory of the Department of Life Safety Activity

Topics of classroom lessons	The concept of radiobiology and its tasks; - Basic laws of radioactive transformations of atomic nuclei; –Methods of registration of ionizing radiation; - Biological action of ionizing radiation; - Migration of radioactive elements in the biosphere and their metabolism in animals; - Conducting agricultural production in areas affected by radioactive contamination as a result of the Chernobyl disaster; - Radiological control of food products and environmental objects; - The use of sources of ionizing radiation in veterinary medicine and animal husbandry; - Familiarization with the equipment, safety rules and handling of sources of ionizing radiation in radiological laboratories; - Calculation of radionuclide activity and doses of ionizing radiation; - Familiarization with the general characteristics, structure and principle of operation of radiation monitoring devices; - Determination of the dose rate of gamma radiation indoors and outdoors; - Selection and preparation of samples for radiometric and spectrometric studies; - Determination of 137Cs activity in food products, soils on "USC Gamma Plus", "RUB-01P6", "RUG-R". - Determination of 90Sr activity in food products and soils at USC Gamma Plus. - Prediction of 137Cs and 90Sr activity in crop and livestock products obtained in radioactively contaminated areas.
recommended literature:	1. Гудков І.М. Радіобіологія: Підручник – К.: НУБіПУ – 2016. – 485 с. 2. Гудков І.М. Сільськогосподарська радіоекологія: підручник / Гудков І.М., Гайченко В.А., Кашпаров В.О. –К.: Ліра-К, 2017. –268 с. 3. Практикум з радіобіології та радіоекології / Гайченко В.А., Гудков І.М., Кашпаров В.О., Лазарєв М.М., Кіцно В.О. К.: Кондор, 2010 р. – 282 с. 4. Natural and induced radioactivity in food. International Atomic Energy Agency, VIENNA, 2002, 136p. 5. Radiation biology: a handbook for teachers and students. International Atomic Energy Agency, VIENNA, 2010, 150 p. 6. Chernobyl: 30 Years of Radioactive Contamination Legacy. Report.Lead writer and coordination of report: Prof. Valerii Kashparov, Kyiv, 2016, 59 p.
Language of instruction	Ukrainian

The structure of the discipline by type of occupation

A lectures	B seminars	C Self-education	D laboratory	E non-clinical with animals, models	F Clinical with animals	G other	H total

16	–	58	16	–	–	–	90

Date of the last modification of the program	28.08.2019 p.

Name of the university: Bila Tserkva National Agrarian University	
Name of the faculty: Faculty of Veterinary Medicine	
Назва дисципліни	**RADIOGRAPHIC ANATOMY**
Teachers:	Mykola Ilnitsky, doctor habilitated DVM (guarantor).
Forms of study: Lectures / practical **Study load: EKTS credits - 3 (90 hours)** **Weekly load: Student attendance: required**	
Course and semester in which it is planned to study the discipline	3rd year - VI semester
Prerequisites for studying the discipline.	To study the discipline "Animal Anatomy" students must have basic training in zoology and general biology, based on secondary education
Methods of knowledge control	Credit
Learning outcomes and competencies	Students should know: features of the structure of all organs and their systems and devices of domestic animals; regularities of X-ray diagnostics of organs, their systems and devices in onto and phylogeny; areas of the body of animals, topography and relationship of organs in these areas. and be able to: determine the species of individual organs of domestic animals; determine the location of individual organs in different parts of the body of animals.
Description of the discipline	
Knowledge base in the discipline	Auditoriums, prosectories, anatomical museum, X-ray room

Topics of classrooms	**Topics of lectures:** 1. Physical and technological bases of radiological methods of diagnostics with use of ionizing radiation. 2. Physical and technological bases of radiological methods of diagnostics with use of non-ionizing radiation. 3. Radiation diagnostics of diseases of the musculoskeletal system. 4. Radiation diagnosis of respiratory diseases. 5. Radiation diagnosis of diseases of the cardiovascular system. 6. Radiation diagnosis of diseases of the gastrointestinal tract. . Radiation diagnosis of diseases of the gastrointestinal tract. 8. Radiation diagnosis of diseases of the urinary system.
	Topics of practical classes: 1. Organization of work and equipment of the department (office) of X-ray diagnostics. Technological bases of X-ray diagnostics. 2. Organization of work and equipment of the department (office) of ultrasound diagnostics. Technological bases of ultrasonic diagnostics. 3. Final lesson from the section "Physical and technological bases of radio diagnostics". 4. Radiation diagnosis of traumatic injuries of the musculoskeletal system. 5. Radiation diagnosis of inflammatory diseases and tumors of the musculoskeletal system. 6. Radiation diagnosis of diseases of the skull and brain. 7. Radiation diagnosis of the spine and spinal cord. 8. Radiation diagnostics of respiratory organs. Radiation of lung tumors.
Recommended Books:	1. Рентгенодіагностика [Text]: навч. way. for students. higher honey. textbook закл / За заг. ed. VI Milka.- Vinnytsia: New book, 2005. - 352 p. 2. I. Pulyuy. Collection of works. - К .: Рада, 1996. - 712 с. 3. Rafael Gualla / «Pulujisieren» statt «Röntgenisieren» // Wochenendbeilage der «Oberösterreichischen Nachrichten», 3. Februar 1962. 4. Small mining encyclopedia: in 3 volumes / ed. VS Biletsky. - D .: Eastern Publishing House, 2004-2013.
Language of instruction	Ukrainian

Структура дисципліни за видами занять

A Lectures	**B** Seminars	**C** Independent	**D** Practical	**E** Non-clinical	**F** Clinical	**H**
16	4	58	12			90 годин (3 кредити)

University Name: Bila Tserkva National Agrarian University

The name of the faculty: Faculty of Veterinary Medicine	
Subjects	**VETERINARY MANAGEMENT**
Lecturer	Taras Tsarenko, PhD, DVM, SergiyBilyk, PhD, DVM
Forms of study: Lectures / practical / seminars **Volume of study load: ECTS** credits -3 (90 hours); **Weekly workload:** 5th semester - for two weeks 6 hours (2 lectures / 4 practical or seminars) **Student attendance:** required	
A course and semester in which the study of discipline is planned	3 course, 5 semester
Prerequisites for studying discipline	"Introduction to the specialty", "Ukrainian language (for professional direction)", "Foreign language (for professional direction)", "History and culture of Ukraine", "Philosophy", "Professional ethics with the basics of biosafety and bioethics"
Methods of knowledge control	Test
List of competences and relevant learning outcomes provided by the discipline	Students must know and be able to: ***Knowledge:*** - know the methods of analysis, synthesis and further modern training in entrepreneurship and management of enterprises and business. Know how to search, process and analyze information. - have deep knowledge in the field of information and communication technologies used in professions. Know the computer systems of accounting and management of veterinary institutions. - know the basic methods of scientific research. Have a deep knowledge of the specifics of their profession in the field of veterinary entrepreneurship. Know the methods of assessing the quality of commercial activities of veterinary entrepreneurship. - knowledge of job responsibilities of heads of veterinary enterprises and ways to perform the tasks. ***Skill:*** - be able to draw up contracts, draw up primary accounting documents and administrative documents; - be able to organize financing in the field of veterinary business taking into account the risks; - be able to organize the management of the organization at the structural, functional and personal levels; - be able to manage the movement of information and its use in veterinary institutions; - be able to organize the marketing activities of a veterinary enterprise on the basis of marketing research; - be able to apply techniques and methods of advertising and sales promotion; - be able to make a business plan; - in compliance with legal norms, be responsible for making informed decisions and actions regarding the correct use of production capacity in the field of veterinary medicine.

Description of discipline	
Base holding classes from discipline	Classrooms, computer classes.
Themes of classroom classes	**Lectures.** **Module I.** **ENTERPRISE IN VETERINARY MEDICINE** **Topic 1.** Entrepreneurial idea in veterinary activities. The mechanism of creating your own business. **Topic 2**. Legal basis of veterinary entrepreneurship. Organizational and legal forms of veterinary business. Risks of veterinary entrepreneurship. **Module II.** **MANAGEMENT IN VETERINARY MEDICINE** **Topic 3.** The subject and evolution of management. The concept of organizationInformation and communication. **Topic 4.** Management functions. Manpower and conflict management. **Module III.** **MARKETING IN VETERINARY MEDICINE** **Topic 5.** Subject of marketing. Study of the market of veterinary goods and services. **Topic 6.** Veterinary goods and services. Formation of demand and sales promotion. **Topic 7.** Business planning in veterinary business.
	Practical training: **Module I.** **ENTERPRISE IN VETERINARY MEDICINE** **Topic 1.** Entrepreneurial idea in veterinary activities. Assessment of a person's ability to engage in entrepreneurial activity. The mechanism of creating your own business. Legal bases of veterinary business. Civil legislation of Ukraine. Economic legislation of Ukraine. Veterinary legislation of Ukraine. Procedure for licensing veterinary activities. The procedure for state registration of business activities. Rights and responsibilities of a veterinary entrepreneur. **Topic 2**. Organizational and legal forms of veterinary business. Types of business veterinary institutions. Constituent documents of various veterinary institutions of various organizational and legal forms. Association of legal entities. Sources of financing of entrepreneurial veterinary activity. Banking services. Lending. Accounting in business veterinary institutions. Economic activity. Areas of economic activity of a doctor-entrepreneur. Contracts and contractual relations in entrepreneurial veterinary activity. Contract of sale. Service agreement. Subscription for guaranteed veterinary care. **Topic 3.** Risks of veterinary entrepreneurship. Sources of risks for the veterinary entrepreneur. Classification of losses. Risk classification. Methods to prevent losses and reduce risks. **Topic 4**. Seminar **Module II.** **MANAGEMENT IN VETERINARY MEDICINE** **Topic 5.** The subject and evolution of management.

	Categories of management. Management and its components. Management levels. Types of management. Production and financial management. Historical development of management. Classical and neoclassical management theory. Scientific schools and management concepts. Modern management concepts. Features of American, European and Japanese management. Features of management in government agencies. The concept of organization. Organization as an object of management. Organizational structure of the institution. Organization as a process. Components of the organizational process. Classical, behavioral and modern theory of organization. Fundamentals of organizational design. Types of organizational structures. **Topic 6.** Management functions. General concept of management functions. The main functions of management and their relationship. Functions of management: goal setting, planning, development and management decisions, organization of implementation, operational influence, motivation, control. Manager in the management system of a veterinary enterprise. Content, purpose, subject, means and product of managerial work. The place of the manager in the organization. The role of the manager in the organization. The environment of the manager. Professional and personal qualities of a manager. Training of managers for veterinary institutions. **Topic 7.** Information and communication. The concept of information and its movement. Classification of types of information. Communication process. Types of communications. Communication management in the organization. **Topic 8.** Human resource management and conflict. Human resource planning. Recruitment. The concept of labor collective. The content of the people management process. Methods of labor collective management. Management styles. Conflicts and their types. Conflict management. **Topic 9.** Seminar. **Module III.** **MARKETING IN VETERINARY MEDICINE** **Topic 10.** The subject of marketing. Subject, goals, objectives of marketing in veterinary business. The evolution of marketing. Marketing categories. Marketing concept. Types of marketing depending on demand. Marketing environment of a business veterinary institution. 4P and 4C marketing complexes. **Topic 11.** Market research of veterinary goods and services. The current state of the market of veterinary drugs in Ukraine. Veterinary services market. The essence, tasks and role of marketing research of the market of veterinary goods and services. Organization of marketing research. Marketing research technologies. Marketing information system. Market segmentation. Ways to reach the market. determination of market capacity. Veterinary goods and services. Categories of goods and services. Market attributes of the product. Product competitiveness. Product positioning. Product life cycle. Break-even point calculation. Creation and introduction to the market

	of a new veterinary drug. Wholesale and retail trade. Competitive veterinary service. **Topic 12.** Demand formation and sales promotion. The essence of the concept of "advertising" and its significance in veterinary business. The task of advertising. The advertising process and its elements. Principles of creating an advertising appeal. Organization of an advertising campaign. Classification of advertising. Propaganda and PR. The task of sales promotion. Methods of sales promotion. Pricing for veterinary goods and services. Pricing as a marketing factor. State regulation of prices. Cost and marketing methods of pricing. Price elasticity of demand. Features of marketing in the fields of veterinary entrepreneurship. Marketing in the work of a veterinary clinic for small animals. Marketing in the activities of a veterinarian-entrepreneur in rural areas. marketing in veterinary pharmacies. Marketing in the wholesale trade of veterinary drugs, feeds, equipment, etc. Marketing activities for the organization of veterinary consulting. **Topic 13.** Business planning in veterinary business. The essence and objectives of the business plan. Business plan functions. General rules of business planning. Business planning information field. Technology of drawing up and structure of the business plan. **Topic 14.** Seminar.
Рекомендована література:	1. Menedzhment ta marketynh u veterynarniy medytsyni: [Management and marketing in veterinary medicine] navch. posib. / L.YE. Korniyenko, B.M. Yarchuk, R.V. Tyrsin, T.M. Tsarenko, T.V. Sokol′s′ka. – K.: Ahrarna osvita, 2013. – 349 s. 2. Fylyp Kotler. Marketynh menedzhment. [Marketing management] Ékspress–kurs / SPb.: Pyter, 2004.– 496 s. 3. Busol V.O. Pryvatna praktyka. Pershi kroky [Private practice. The first steps] / Busol V.O., V.V. Vlasenko, V.T. Lisovenko, A.M. Trokhymchuk / Naukovo–praktychne vydannya. – Vinnytsya, 2004. – 179s. 4. Panasova T.H. Rozrobka ta marketynh konkurentospromozhnykh veterynar¬nykh posluh. [Development and marketing of competitive veterinary services.] Metodychni rekomendatsiyi. – Poltava, 2009.–34 s. 5. Levkivs′kyy D.M. Mekhanizm stvorennya vlasnoho biznesu u veterynarniy medytsyni. [The mechanism of creating your own business in veterinary medicine.] Metodychni vkazivky.–L′viv, 2008.–24 s. 6. Paskov P.P. Menedzhment veterynarnoho byznesa. [Veterinary business management] Chast′ 1–M.: Mis·hoUet, 2004.– 301 s. 7. Paskov P.P. Menedzhment veterynarnoho byznesa. [Veterinary business management] Chast′ 2–M.: Mis·hoVet, 2004.– 286 s 8. The BusinessSide of VeterinaryMedicine: WhatVeterinarySchoolsDon'tTeachYou / M DuffyJones, TomHarbin., MillCityPress, 2017.– 178 p.
Teaching language	Ukrainian

Structure of discipline by types of classes

Subject	A	B	C	D	E	F	G	H
Veterinary management	14	6	48	22	-	-	-	90 (3 **ECTS**)

A - lectures; B - seminars; C - controlled self-study; D - laboratory and descriptive work; E - non-clinical work on animals; F - Clinical work on animals; G - others (specify); H - together.

The date of the latest program modification	**Developed for the first time** in 2020-2021

University Name: Bila Tserkva National Agrarian University	
The name of the faculty: Faculty of Veterinary Medicine	
Subjects	**ORGANIZATION AND MANAGEMENT OF THE VETERINARY CLINIC**
Lecturer	Taras Tsarenko, PhD, DVM, Sergiy Bilyk, PhD, DVM
Forms of study: Lectures / practical **Number of hours of study: ECTS** – 3 (90 год.); **number of hours per week:** 5 semester – for two weeks 6 hours (2 lectures / 4 practical or seminars) **Student's presence:** mandatory	
A course and semester in which the study of discipline is planned	3 course, 5 semester
Prerequisites for studying discipline	"Introduction to the specialty", "Ukrainian language (for professional direction)", "Foreign language (for professional direction)", "History and culture of Ukraine", "Philosophy", "Professional ethics with the basics of biosafety and bioethics"
Methods of knowledge control	Test
List of competences and relevant learning outcomes provided by the discipline	Students must know and be able to: Knowledge: - know the methods of analysis, synthesis and further modern training in veterinary clinic management. Know the methods of search, processing and analysis of information; \ know the regulations and procedures for the establishment and operation of a veterinary clinic; - know the basics of business planning, budgeting, accounting and economics of veterinary clinics; - know computer systems for veterinary clinics; - knowledge of job responsibilities and functions of the staff of the veterinary clinic; - know the requirements for storage and use of medicines in veterinary clinics; - know the main types of veterinary equipment and its use in veterinary clinics. Skill: - be able to create private practice and legal entities for the veterinary business;

	- be able to analyze and use in the activities of the veterinary clinic the results of marketing research; - be able to manage the staff of the veterinary clinic; - be able to organize the storage and use of veterinary drugs in the clinic; - be able to select and use veterinary equipment according to the profile of the clinic; - be able to make a business plan of a veterinary clinic;
Description of discipline	
Base holding classes from discipline	Classrooms, computer classes.
Themes of classroom classes	**Lectures.** **Topic 1.** Creating a clinic - the beginning of practice. Types and organizational and legal forms of veterinary business. **Topic 2.** Assessment of the client base, involvement in the local community. The image of the clinic. Communication and customer training. Security of customers and staff. **Topic 3.** Clinic staff: doctors, laboratory assistants, assistants, administrators, management. Selection, training, motivation, dismissal of staff. **Topic 4.** Types of clinics. Space organization, work schedules, warehouse accounting, computer systems. Effective clinic management. **Topic 5.** Pharmacy in the clinic, licensing, supply, movement accounting and write-off of drugs. **Topic 6.** Veterinary equipment. Selection and use of equipment. Creating a clinic profile. **Topic 7.** Business planning, marketing, financing, budget, pricing, taxes, insurance in the clinic.
	Practical training: **Topic 1.** Entrepreneurial idea in veterinary activities. Creating a clinic is the beginning of practice. The mechanism of creating your own business. Legal bases of veterinary business. Civil legislation of Ukraine. Economic legislation of Ukraine. Veterinary legislation of Ukraine. Procedure for licensing veterinary activities. The procedure for state registration of business activities. Rights and responsibilities of a veterinary entrepreneur. **Topic 2.** Types and organizational and legal forms of veterinary business. Partnership. Constituent documents of various organizational and legal forms. Registration of a private entrepreneur or legal entity. **Topic 3.** Evaluation of the client base, involvement in the local community. The image of the clinic. Communication and customer training. Security of customers and staff. **Topic 4.** Seminar **Topic 5.** Clinic staff: doctors, laboratory assistants, assistants, administrators, management. Their role and responsibilities. **Topic 6.** Selection, training, motivation, dismissal of staff. Labor relations. Specialization. European Veterinary Specialization System (EBVS).

	Topic 7. Types of clinics. Space organization, work schedules, warehouse accounting, computer systems. Range of services. Animal Health Center is a comprehensive veterinary business. **Topic 8.** Effective management of the clinic. Structural, functional and personal component of management. **Topic 9.** Pharmacy in the clinic, requirements for the pharmacy, supply, storage, effective use of medicines. Traffic accounting and medication write-off. Computer composition accounting systems. License for precursors and narcotics. **Topic 10.** Equipment in the clinic. Opportunities and organization of effective use. Clinic profile. **Topic 11.** Seminar. **Topic 12.** Marketing of veterinary services. Pricing. Budget. Financing. Taxes. Insurance. Advertising and promotion. **Topic 13.** Business planning in a veterinary clinic. Functions of the business plan, rules of drawing up and use. **Topic 14.** Seminar.
Recommended Books:	1. Veterinary Practice Management. 2nd Edition: A PracticalGuide / MaggieShilcock, GeorginaStutchfield, Saunders Ltd., 2008.– 256 p. 2. Veterinary Practice Management, ThirdEdition / Dixon Gunn, John Bower, JohnGripper, Peter Gripper, Blackwell Science Ltd, 2001.– 254 p. 3. Opperman Mark. The Art of Veterinary Practice Management, Advanstar Communications, 1999.– 240 c. 4. The Business Side of Veterinary Medicine: What Veterinary Schools Don't Teach You / M Duffy Jones, Tom Harbin., Mill City Press, 2017.– 178 p. 5. Ackerman Lowell. Blackwell's Five-Minute Veterinary Practice Management Consult: 2nd Edition, John Wiley&Sons Inc, 2013. – 808 p. 6. Prendergast Heather. Front Office Managementfor the Veterinary Team, 2nd Edition, Elsevier - Health Sciences Division, 2014. – 483 p. 7. Donnelly Amanda L. 101 Veterinary Practice Management Questions Answered, AAHA Press. –2010. – 204 p. 8. Heinke Marsha L., Practice Made Perfect: A Complete Guide to Veterinary Practice Management, 2nd Edition, AAHA Press,2012 – 584 p. 9. Panasova T.H. Rozrobka ta marketynh konkurentospromozhnykh veterynar¬nykh posluh. Metodychni rekomendatsiyi. [Development and marketing of competitive veterinary services. Guidelines] – Poltava, 2009.–34 s. 10. Paskov P.P. Menedzhment veterynarnoho byznesa. [Veterinary business management.] Chast′ 1–M.: Mis·hoUet, 2004.– 301 s. 11. Paskov P.P. Menedzhment veterynarnoho byznesa. [Veterinary business management.] Chast′ 2–M.: Mis·hoVet, 2004.– 286 s.
Teaching language	Ukrainian

Structure of discipline by types of classes

Subject	A	B	C	D	E	F	G	H
Organization and management of veterinary clinics	14	6	48	22	-	-	-	90 (3 **ECTS**)

A - lectures**; B -** seminars**; C -** controlled self-study**; D -** laboratory and descriptive work**; E -** non-clinical work on animals**; F -** Clinical work on animals**; G -** others (specify)**; H -** together.

The date of the latest program modification	**Developed for the first time** in 2020-2021

Name of the university: Bila Tserkva National Agrarian University	
Name of the faculty: Faculty of Veterinary Medicine	
Subject	**FOOD CHEMISTRY**
Teachers	Alina Vovkogon, PhD, DAg Roll Natalia, PhD
Forms of study: Lectures / practical **Volume of study loading: ECTS-3 credits (90 hours);** **Weekly workloading: 3rd semester - 4 (1/1);** **Student attendance: required**	
Course and semester in which the discipline is planned to be studied	2 year, 3 semester
Prerequisites for studying the discipline	Chemistry, Physics, Microbiology
Methods of knowledge control	Exam
Learning outcomes and competencies	The result of teaching the discipline is the acquisition by students of the following knowledge and skills: – Knowledge: – Know the structure, properties and biological significance of macronutrients and micronutrients. – Features of chemical transformations of proteins, carbohydrates, lipids and mineral elements that occur during the technological process of production, storage and use of food. Skill: – Determine the content of raw materials and food nutrients by qualitative reactions; - Have the skills of systematic analysis of the quality of raw materials and products in order to predict changes in the set of properties in the process of processing, storage and preparation of products with appropriate propertiesanalysis of vitamins.
Description of the discipline	
The base of the discipline	Classrooms, and laboratory of the department, interdepartmental clinics
Topics of classroom classes	Lecture topics 1. Food chemistry as a science. Basic concepts.

	2. Amino acids, peptides and proteins in food and raw materials. 3. Lipids: values, oxidation reactions. Lipids of various foods. 4. Carbohydrates: chemical reactions of carbohydrates, altered food processing. Mayar's reaction. 5. Water in food. 6. Minerals, trace elements, toxic elements. 7. Vitamins and their changes during cooking. Antivitamins. 8. Enzymes in the food industry Topics of practical classes 1. Safety rules in the laboratory. Collection, processing, storage and processing of samples. 2. Proteins: isolation and determination of proteins from different types of food. 3. Lipids: types of fatty reactions. 4. Carbohydrates: differentiation of carbohydrates by functional group. Hydrolysis of sucrose and starch. 5. Determination of calcium and magnesium concentration in mineral waters by complexometry. Determination of water hardness. 6. Determination of salt content in food by the Mora method. 7. Qualitative analysis of provitamin A in carrots. Determination of vitamin C concentration. 8. Processes of lactic acid fermentation.
recommended literature:	1. Євлаш В. В. Харчова хімія : Навчальний посібник / В. В. Євлаш, О. І. Торяник, В. О. Коваленко, О. Ф. Аксьонова, Н. О. Отрошко, Т. О. Кузнецова, Л. Ф. Павлоцька, Д. О. Торяник. - Х. : Світ книг, 2012. – 504 с. 2. Пілюгіна І.С. та ін. Хімія та методи дослідження сировини та матеріалів. Загальні основи аналітичної хімії: Лабораторний практикум. Навч. посібник / І.С. Пілюгіна, О.В. Добровольська, Н.В. Мурликіна. – Х. : ХДУХТ, 2008. - 354 с. 3. Пищевая химия / А.П. Нечаев, С.Е. Траубенберг, А.А.Кочеткова и др./ Под ред. А.П. Нечаєва; издание 4-е, испр. и доп. – СПб.: ГИРД, 2007. – 640 с. 4. Павлоцька Л.Ф. Основи фізіології гігієни харчування та проблеми безпеки харчових продуктів / Л.Ф. Павлоцька, Н.В. Дуденко, Л.Р. Дмітриєвич. – Суми: ВТД «Університетська книга», 2007. – 441 с. 5. Пасальський Б.К. Хімія харчових продуктів: Навч. пос. / Б.К. Пасальський. – К.: Київ. Держ.торг.-екон.ун-т, 2000. – 196 с. 6. Позняковский В.М. Гигиенические основы питания, безопасность и експертиза продовольственных товаров: Учебник; 2-е изд. доп. / В.М. Позняковский. – Новосибирск: Сибирское университетское издательство, 2007. – 448 с. 7. Токсичні речовини у харчових продуктах та методи їх визначення: Підручник / А.А. Дубиніна, Л.П. Малюк, Г.А. Селютина та ін. – К.: ВД «Професіонал»,2007. – 384 с.

	8. Донченко Л.В. Безопасность пищевого сырья и продуктов питания / Л.В. Донченко, В.Д. Надтыка. – М.: Пищевая пром-сть, 1999. – 352 с. 9. Пищевая химия: Лабораторный практикум. Пособие для вузов / А.П. Нечаєв., С.Е. Траубенберг, А.А. Кочеткова и др.– СПб.: ГИРД, 2006. – 304 с.
Language of instruction	Ukrainian

The structure of the discipline by type of occupation

A lectures	B seminars	C Self-education	D laboratory	E non-clinical with animals, models	F Clinical with animals	G other	H total
16	6	58	10	-	-	-	90

Date of the last modification of the program	28.08.2019 p.

Name of the university: Bila Tserkva National Agrarian University	
Name of the faculty: Faculty of Veterinary Medicine	
Subjects	**FOOD MICROBIOLOGY**
Teachers	Iryna Rublenko, doctor habilitated, DVM (guarantor); Andriy Andriychuk, PhD, DVM; Vladimir Zotsenko, PhD, DVM, Svetlana Taranukha, master, DVM; Denis Ostrovsky, master, DVM.
Forms of study: Lectures / practical Volume of study load: ECTS credits - 3 (90 hours); Weekly workload: 8 semester - 2 (1/1) Student presence: selective	
Course and semester in which the subject is planned to be studied	4th year, 8th semester
Conditions for taking the course	Pregnant students may not attend this course
Prerequisites for studying the discipline	“Animal Anatomy”, “Cytology, Histology, Embryology”, “Animal Physiology”, “Cell Genetics and Molecular Biology”, “Veterinary Microbiology”, “Animal Physiology”, “Veterinary Microbiology and Immunology”, “Food Safety, Food Quality and feed "" epizootology, infectious diseases and preventive medicine "," veterinary toxicology ""
Methods of knowledge control	Test
Conditions for taking the course	Pregnant students may not attend this course
Learning outcomes and competencies	The result of teaching the discipline is that students receive the following knowledge and skills:

	Knowledge: Standards for microbiological research of food; standards for microbiological research of animal feed; food legislation to ensure bacterial safety. Skills: microbiological research of food products; microbiological research of animal feed; interpret the results of food research; interpret the results of animal feed research
Description of the subjects	
The base of the discipline	Auditorium and laboratory of the department
Topics of classroom lessons	**Topics of lecture:** microbiology of milk, milk products, cheeses, meat and meat products, fish, eggs, vegetables and fruits, canning and production of canned food, animal feed; research of quality of disinfection at the industrial enterprises. **Topics of practical classes:** rules of work, safety at work in the sanitary-bacteriological laboratory, acquaintance with the equipment of the laboratory. Risk factors in the laboratory of veterinary medicine. Sanitary and microbiological research of milk and dairy products. Preparation of samples for research. Determination of QMAFAnM, the degree of microbial contamination of milk breakdown by reductase. Determination of antibiotics and sulfonamide substances in milk. Determination of BGEC, Staphylococcus aureus, presence of listeria, bacteria of the genus Salmonella, bacteria, genus Proteus, presence of spores of anaerobic bacteria in milk and cheese. Sanitary and microbiological examination of meat and meat products. Sampling, preparation of samples for research. Determination of QMAFAnM and BGEC, Staphylococcus aureus, pathogenic streptococci, Listeria monocytogenes, Proteus, Salmonella, Clostridium, Bac. anthracis. Sanitary and microbiological examination of fish. Identification of Clostrudium perphringens and Clostrudium botulinum toxins. Research of animal feed.
P67–69 recommended literature:	1. Головко А.М. Ветеренарна санітарна мікробіологія Навчальний посібник // А.М. Головко, І.О. Рубленко. – Київ: Аграрна освіта, 2010. – 284 с. 2. Рубленко І.О. Мікробіологія молока і молочних продуктів / Методичні рекомендації для забезпечення самостійної роботи студентів ветеринарного та біолого-технологічного факультетів, слухачів ІПНКСВМ. Освітньо-кваліфікаційний рівень – бакалаврів, магістрів, напрям – санітарна мікробіологія / І.О. Рубленко. – Біла Церква, 2009. – 43 с. 3. Мікробіологія молока і молочних продуктів з основами ветеринарно-санітарної експертизи / [С.М. Бергілевич, В.В. Касянчкк, В.З. Салата та ін.]. – Суми, Університетська книга, 2010. – 320 с. 4. Скрипник В.Г. Лабораторна діагностика сибірки тварин, індикація збудника з патологічного та біологічного матеріалу, сировини тваринногого походження та об’єктів навколишнього середовища / В.Г. Скрипник, І.О. Рубленко, Т.О. Гаркавенко – Київ, 2015. – 78с.

	5. Tackling drug-resistant infections globally: final report and recommendations. 2016. – 84p. https://amr-review.org/sites/default/files/160518_Final%20paper_with%20cover.pdf. 6. Пількевич Н.Б., Боярчук О.Д. Мікробіологія харчових продуктів: Навчальний посібник для студентів вищих навчальних закладів. – Луганськ: Альма-матер, 2008. – 152 с http://anatomy.luguniv.edu.ua/ukr_studies/food_microbiology.pdf 7. Мікробіологія харчових виробництв: навчальний посібник / Капрельянц Л. В., Пилипенко Л. М., Єгорова А. В., Пауліна Я. Б., Труфкаті Л. В., Кананихіна О. М., Велічко Т. О., Килименчук О. О., Кручек О. А., Шпирко Т. В., Охотська М. І. – Херсон: ОЛДІ-ПЛЮС, 2017. – 478 с. https://oldiplus.ua/downloads/244.pdf
Language	Ukrainian

The structure of the subject

A lectures	B seminars	C independent	D laboratory	E non-clinical with animals, models	F clinical with animals	G other	H together
16	2	58	2	10			90

Date of the last modification of the curriculum	Developed for the first time for 2020-2021 academic year.

Name of the university: Bila Tserkva National Agrarian University	
Name of the faculty: Faculty of Veterinary Medicine	
Subjects	**VETERINARY PHARMACY**
Teachers	Rublenko Serhiy Vasyliovych Doctor of Veterinary Sciences, Professor of the Department of Parasitology and Pharmacology Avramenko Natalia Vladimirovna, Koziy Natalia Vladimirovna, Shaganenko Raisa Vladimirovna Candidates of Veterinary Sciences, Associate Professors of the Department of Parasitology and Pharmacology
Forms of study: Lectures / practical **Volume of study load: EKTS credits - 3 (90 hours);** **Weekly load:** **Student attendance: required**	
Course and semester in which the discipline is planned to be studied	6 M course
Prerequisites for studying the discipline	Pharmacology and pharmacotherapy, Prescription. Botany. Math. Biochemistry. Biophysics.
	Learning outcomes defined by the Standard of Higher Education of Ukraine for the specialty 211 "Veterinary Medicine": PH15, PH16.

Learning outcomes and competencies	
List of competencies and relevant learning outcomes provided by the discipline	Students must know and be able to: Knowledge Pharmacy as a branch of veterinary science and its components Modern methods of pharmaceutical analysis. Pharmaceutical terminology. Fundamentals of technology for the manufacture of common dosage forms in veterinary medicine. Skill Use special terminology. Determine the quality of manufactured drugs. Communicate with manufacturers, wholesalers, retailers and pet owners about veterinary drugs. Analyze the need of the pharmacy for veterinary drugs and hygiene items for different species of animals.
Description of the discipline	
The base of the discipline	Audiences. Pharmacy of the interdepartmental veterinary clinic and local pharmaceutical enterprises.
Topics of classroom classes	Lecture topics 1. Development, formation. The main aspects of veterinary pharmacy. 2. Pharmaceutical chemistry - a component of pharmacy. Her task. Methods and principles of work. 3. Basics of pharmacognosy. Medicinal components of plants and their connection with the life of the animal. 4. Technology of manufacturing dosage forms. 5. Evaluation of the effectiveness, safety and stability of veterinary drugs. 6. Organization and economics of pharmacy. 7. Basics of marketing of veterinary drugs. Topics of laboratory classes 1. Subject and objectives of pharmaceutical chemistry. State Pharmacopoeia of Ukraine. 2. Methods of pharmaceutical analysis. 3. Classification of biologically active compounds of plants, components of drugs. 4. Alkaloid-containing plants, their role in pharmacy and pharmacotherapy. 5. Glycoside-containing plants, their role in pharmacy and pharmacotherapy. 6. Essential oils and essential oil plants. 7. Vegetable raw materials. Standardization. Reality and good quality. 8. Technology of manufacturing solid dosage forms. 9. Technology of making soft dosage forms 10. Technology of production of liquid dosage forms 11. Standardization of drugs.

	12. Veterinary pharmacy. Work planning and accounting. 13. Pharmaceutical enterprises of Ukraine. From drug manufacturing to implementation. 14. Marketing management in pharmacy.
Recommended Books	1. Pharmaceutical Encyclopedia / ed. Chernykh VP - K .: «MORION», 2005. - 848 p. 2. Khmelnytsky G.O. Pharmaceutical chemistry / G.O. Khmelnytsky, M.F. Povhan. Kyiv. - 2003. - 255 p. 3. Tikhonov O.I. Pharmacy technology of drugs / O.I. Tikhonov, T.Г. Bright. - Vinnytsia: New book, 2007. - 632 p. 4. Technology of drugs: a textbook (University I-III years.) / O.S. Marchuk, N.B. Androschuk. - VSV "Medicine", 2014. - 576 p. 5. Pharmaceutical marketing: a method. rivers to practice. zan. / I.V. Pestun, I.V. Bondareva, S.V. Zhadko. - H.: NFaU, 2015. - 88 p. 6. Kobzar A.Y. Pharmacognosy in medicine: Textbook. manual. - K .: Medicine, 2007. - 544 c.
Language of instruction	Ukrainian

The structure of the discipline by type of occupation

Subject	A	B	C	D	E	F	G	H
Veterinary pharmacy	14	10	48	10	8	-	-	90 (3 credit)

Date of the last modification of the program	28.08.2019.

b. *Clinical Sciences*

Name of the university: Bila Tserkva National Agrarian University	
Name of the faculty: Faculty of Veterinary Medicine	
Subjects	**CLINICAL MICROBIOLOGY**
Teachers	Iryna Rublenko, doctor habilitated, DVM (guarantor); Andriy Andriychuk, PhD, DVM; Vladimir Zotsenko, PhD, DVM
Forms of study: Lectures / laboratory Volume of study load: ECTS credits -3 (90 hours); Weekly workload: 5th semester - 2 (1/1); Student presence: selective	
Course and semester in which the subject is planned to be studied	3rd year, 5th semester
Conditions for taking the course	Pregnant students may not attend this course

Prerequisites for studying the discipline	"Animal Anatomy", "Cytology, Histology, Embryology", "Animal Physiology", "Pathological Physiology", "Animal Feeding", "Clinical Diagnosis and Diagnostic", "Veterinary Clinical Biochemistry"
Methods of knowledge control	Test
Learning outcomes and competencies	The result of teaching the discipline is that students receive the following knowledge and skills: **Know:** methods of identification of clinical strains, the main representatives of the biocenosis of animals, methods of their microbiological diagnosis, microbiological diagnosis of bacteremia and sepsis, urinary tract infections, respiratory system, intestinal and food poisoning, wound infection. **Be able to:** interpret the biological properties of pathogenic and opportunistic microorganisms, determine the methods of microbiological, virological, epitropic therapy and prevention of opportunistic infections.
Description of the subjects	
The base of the discipline	Auditorium and laboratory of the department
Topics of classroom lessons	**Lecture topics: Objects and induced infectious processes in a non-infectious clinic.** Opportunistic infections in clinics. Free-standing and obligate-pathogenic infections. Diagnosis of purulent-septic processes. Assistance is aimed at providing clinicians in the diagnosis, treatment and prevention of infectious complications. Microbial diseases in the departments of therapy, surgery, obstetrics, urology, traumatology, orthopedics, ophthalmology, dermatology. Microbiological diagnosis of urinary tract infections, respiratory system, intestinal infections. Microbiological diagnosis of food poisoning and wound infection. Prevalence of methicillin-resistant variants among Staphylococcus aureus. Clinical guidelines for the determination of antibiotic susceptibility EUCAST-2015. The use of immunological methods - the study, development and assimilation of methods and principles of clinical diagnosis of animal diseases using serological reactions, the use of the latest methods using technology. **Topics of practical classes.** Safety precautions. General information about clinical microbiology. Features of opportunistic pathogens and infections. Features of microbiological diagnosis of clinical infections. Methods of identification of clinical strains. Systems for rapid identification of microorganisms, viruses. Mushrooms. WEB API - fast identification of pathogens. The main representatives of the biocenosis of birds and animals. Sowing of poultry material (meat, heart, liver, poultry heads). Microbiological diagnosis of bacteremia and sepsis. Blood culture, the presence of growth, the scheme of further research. Microbiological diagnosis of wound infection in animals. Microbiological diagnosis of inflammatory processes in the eyes and ears of animals. Microbiological diagnosis of the oral cavity of the animal.
P67–69 recommended literature:	1. Назарова Л.С. Клиническая микробиология с основами иммунологии. - Саратов – 2011. - 282 с. file:///C:/Users/%D0%90%D0%B4%D0%BC%D0%B8%D0%BD/Downloads/%D0%9A%D0%BB%D0%B8%D0%BD%D0%B8%D1%87%D0%B5%D1%81%D0%BA%D0%B0%D1%8F_%D0%

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Language	Ukrainian

The structure of the subject

A lectures	B seminars	C independent	D laboratory	E non-clinical with animals, models	F clinical with animals	G other	H together
14	2	62	4	8	-		90

Date of the last modification of the curriculum	Developed for the first time for 2020-2021 academic year.

Name of the university: Bila Tserkva National Agrarian University	
Name of the faculty: Faculty of Veterinary Medicine	
Subjects	**CLINICAL IMMUNOLOGY**
Teachers	Iryna Rublenko, doctor habilitated, DVM (guarantor); Andriy Andriychuk, PhD, DVM; Vladimir Zotsenko, PhD, DVM
Forms of study: Lectures / laboratory Volume of study load: ECTS credits -3 (90 hours); Weekly workload: 5th semester - 2 (1/1); Student presence: selective	
Course and semester in which the subject is planned to be studied	3rd year, 5th semester
Conditions for taking the course	Pregnant students may not attend this course
Prerequisites for studying the discipline	“Animal Anatomy”, “Cytology, Histology, Embryology”, “Animal Physiology”, “Pathological Physiology”, “Veterinary Microbiology”
Methods of knowledge control	Test
Learning outcomes and competencies	**Students must know and be able to:** *Knowledge:* the main factors of humoral and cellular immunity - mechanisms to protect the body from infectious agents and their functioning;

	anti-infective, antitumor, transplant, autoimmunity, immunity of tissue incompatibility; development and substantiation of rational prevention of infections on the basis of old and new recombinant, genetically engineered vaccines; immunosuppressive therapy, elucidated mechanisms of autoimmune diseases; laboratory diagnosis of animal diseases using immunological methods; development of methods of diagnosis and pathogenetic therapy of allergic diseases, identification of allergens; immunodeficiencies: diagnosis of immunodeficiencies and methods of their treatment; immunology of reproductions and the mother-fetus relationship: elucidation of the mechanisms of the mother-fetus relationship, the concept of immunogenetic development of the fetus. ***Skills:*** to make conclusions about the state of functioning of the immune system according to laboratory tests; to analyze indicators of immune status, bases of immunological researches; to investigate and establish the causes of diseases of the immune system of animals, using the latest methods; to determine the features of the development of antibacterial, antiviral, antifungal immune protection.
Description of the subjects	
The base of the discipline	Auditorium and laboratory of the department
Topics of classroom lessons	**Lecture topics:** The structure and principles of the immune system. Immune inflammation. Age immunology. Organization of clinical immunological studies of animals with infectious pathology (safety procedures, biosafety when working with sick animals). Clinical immunodiagnostic methods of examination of a sick animal. Development of systems for specific prevention of infectious and non-infectious animal diseases. Assessment of the immune system of animals of different species and birds. Basic principles of therapy of immune-dependent diseases. Nominal deficits. Atopic diseases. Assessment of the state of antibacterial, antifungal, antiparasitic immunity in animals and birds. Investigation of biological material of animals using the phenomenon of agglutination. Theoretical study of individual diseases. **Topics of practical classes:** Safety in the study of clinical immunology. Diagnostic algorithms and protocols for immunoprophylaxis of animals with infectious diseases of bacteriological, viral and mycological etiology. Situational tasks; Features of serological reactions for the study of virus-containing material. Hemadsorption retention reaction and neutralization reaction; Features of serological reactions for the study of virus-containing material. Diffuse precipitation reaction in agar gel. Hemagglutination retention reaction; Clinical immunodiagnostics and immunoprophylaxis of digestive and respiratory organs and diseases of young animals; Enzyme-linked immunosorbent assay and polymerase chain reaction; Diagnostic algorithms and protocols for immunoprophylaxis in gastrointestinal diseases of newborn young. Organizational and special methods of immunoprophylaxis.
recommended literature:	Immynology. Richard Coico Sunshine. – 433 p. https://issuu.com/ozielleather/docs/_coico__immunology__richard_coico__ 2. Клиническая микробиология с основами иммунологии. Л.С. Назарова. – 2011. – 282 с. 3. О.М. Біловол, П.Г. Кравчун, В.Д. Бабаджан та ін. Клінічна імунологія та алергологія. – 2011. http://repo.knmu.edu.ua/bitstream/123456789/660/1/%D0%9D%D0%B0%D

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Language	Ukrainian

The structure of the subject

A lectures	B seminars	C independent	D laboratory	E non-clinical with animals, models	F clinical with animals	G other	H together
14	2	62	4	8	-		90

Date of the last modification of the curriculum	Developed for the first time for 2020-2021 academic year.

Name of the university: Bila Tserkva National Agrarian University	
Name of the faculty: Faculty of Veterinary Medicine	
Subject	**REPRODUCTIVE ENDOCRINOLOGY**

Teachers	Svitlana Vlasenko, doctor habilitated, DVM (guarantor); Alexander Eroshenko PhD, DVM.
Forms of study: lectures / laboratory **Volume of study loading: ECTS credits - 3 (90 hours);** **Weekly loading: 3 (1/2);** **Student presence: selective**	
Course and semester in which the discipline is planned to be studied	5 year; 10 semester
Prerequisites for studying the discipline	" Animal Anatomy "," Cytology, Histology, Embryology "," Animal Physiology "," Pathological Physiology "," Clinical Diagnostics and Diagnostic Imaging "," Pharmacology and Pharmacotherapy "," Obstetrics and Biotechnology of Reproduction with Fundamentals of Andrology ".
Methods of knowledge control	Test
Learning outcomes and competencies	Students must know: - endocrine system of regulation of reproductive function in females; patterns of hormone-dependent processes in the ovaries and uterus during the reproductive cycle; hormonal drugs, their action, indications and side effects, schemes of their use; - pathogenetic role of endocrine disorders in the development of obstetric, gynecological and andrological diseases; be able: - apply hormonal therapy taking into account the indications and contraindications, as well as its pharmacovigilance; - use hormonal methods to control reproductive processes and contraception.
Description of the discipline	
The base of the discipline	Classrooms of the department, clinics of ruminants, pigs, horses, small animals and exotic animals, farms of the research center of the university, public and private clinics for companion animals, farms of agricultural enterprises.
Topics of classroom classes	**Lecture topics:** - Endocrine glands, hormones and mechanisms of their action; - Neurohumoral system of regulation of reproductive function and mechanisms of interaction with endocrine glands and other functional systems and organs; - Methods of hormonal research; - Environmental requirements and biosafety of hormonal drugs. **Topics of laboratory classes:** - Dynamics of hormone-dependent intra-ovarian and intrauterine processes during the reproductive cycle; - Hormonal drugs used in veterinary reproductive medicine; - Endocrinopathy in the genesis of the arousal stage of the sexual cycle; - Endocrine disorders of pregnancy and childbirth; - Endocrine mechanisms in the pathogenesis of postpartum diseases;

	- Disorders of steroidogenesis in gynecological diseases; - The use of hormone therapy in reproductive medicine; - Hormonal methods of contraception; – - Hormonal disorders in males.
Literature recommended	1. Ветеринарне акушерство, гінекологія та біотехнологія відтворення тварин з основами андрології / В.А. Яблонський, С.П. Хомин, Г.М. Калиновський та ін.: За ред. В.А. Яблонського, С.П. Хомина: Підручник.– Вінниця: Нова Книга, 2006.– 592 с. 2. Акушерство, гінекологія та штучне осіменіння сільськогосподарських тварин: навчальний посібник / Г.Г. Харута, С.С. Волков, І.М. Плахотнюк та ін. – К.: Аграрна освіта, 2013. – 445 с. 3. Эндокринология и репродукция собак и кошек / Э. Фелдмен, Р.Нелсон.– М., 2014. 688 с. 4. Clinical Canine and Feline Reproduction: Evidence – Based Answers / M.V. Root Kustritz. – Wiley–Blackwell, 2011. – 332 pp. 5. Clinical Endocrinology of Companion Animals / Rand Jacquie. – Wiley-Blackwell, 2013. – 538 p.
Language of instruction	Ukrainian

The structure of the discipline by type of occupation

A lectures	B seminars	C Self-education	D laboratory	E non-clinical with animals, models	F Clinical with animals	G other	H total
16	6	42	12	6	8		90

Date of the last modification of the program	28.08.2019 p.

Name of the university: Bila Tserkva National Agrarian University	
Name of the faculty: Faculty of Veterinary Medicine	
Subject	**VETERINARY ENDOCRINOLOGY**
Teachers	Volodymyr Sakhnyuk, Dr. hab., DVM (guarantor); Volodymyr Golovakha, Dr. hab., DVM; Leonid Bogatko, PhD, DVM
Forms of study: Lectures / practical **Volume of study load:** ECTS credits - 3 (90 hours) **Form of study:** full-time **Weekly loading:** 4 (2/2) **Student attendance:** obligatory	

Course and semester in which the discipline is planned to be studied	5 year, 10 semester
Prerequisites for studying the discipline	Animal anatomy, Cytology, histology, embryology, Veterinary clinical biochemistry, Animal nutrition, Animal physiology, Pathological physiology, Pharmacology and Pharmacotherapy, Propaedeutics and diagnostic imaging
Methods of knowledge control	Test
Learning outcomes and competencies	Students ***must know***: the importance of endocrine organs for animals; the main causes of endocrinopathies etiology and mechanisms of endocrine diseases, methods of clinical laboratory and diagnostic imaging; analysis and interpretation of laboratory results; pharmacological agents and pathogenetic bases of treatment of endocrine pathology in animals taking into account species, age and physiological features of its course. ***Be able to:*** have techniques and means of emergency medical care and intensive care for endocrine diseases in animals; have methods of treating animals with endocrine pathology; apply diagnostic algorithms and treatment protocols for endocrine diseases
Description of the discipline	
The base of the discipline	Classrooms, Laboratory of Clinical Biochemistry of the Department of Therapy and Clinical Diagnostics, interdepartmental laboratory of the Faculty of Veterinary Medicine, educational veterinary clinic (VTH), public and private clinics and farms.
Topics of classroom lessons	Topic 1. The main causes and mechanisms of endocrine diseases. Topic 2. Clinical and visual methods of examination of a sick animal with endocrine pathology. Topic 3. Research and treatment of animals with endocrine diseases. Theoretical study the same diseases. Topic 4. Diagnostic algorithms and treatment protocols for animals with thyroid pathology. Topic 5. Rationale for the use of etiotropic and pathogenetic therapy for diabetes. Topic 6. Diagnosis and treatment the diseases of the endocrine pancreas part. Treatment protocols. Topic 7. Diagnostic algorithms and treatment of adrenal diseases. Topic 8. Diagnostic algorithms and methods of treatment of thyroid diseases.
Recommended literature:	1. Vnutrishni khvoroby tvaryn: pidruchnyk / [Levchenko V.I., Kondrakhin I.P., Vlizlo V.V. ta in.]; za red. V.I.Levchenka. – Bila Tserkva, 2012. – Ch. 1. – 528 s. 2. Vnutrishni khvoroby tvaryn: pidruchnyk / [LevchenkoV.I., Kondrakhin I.P., Vlizlo V.V. ta in.]; za red. V.I.Levchenka. – Bila Tserkva, 2015. – Ch. 2. – 610 s. 3. Hodivlia silskohospodarskykh tvaryn: pidruchnyk / [Ibatullin I.I., Melnychuk D.O., Bohdanov H.O. ta in.]; za red. akademika

	NAAN Ukrainy I.I. Ibatullina. – Vinnytsia: Nova knyha, 2007. – 616 s. 4. Veterynarna klinichna biokhimiia: pidruchnyk /V.I. Levchenko ta in.; za red. V.I. Levchenka i V.V. Vlizla. 2-he vyd., pererob ta dop. Bila Tserkva, 2019. – 416 s. 5. Klinichna diahnostyka vnutrishnikh khvorob tvaryn / V.I. Levchenko, V.V. Vlizlo, I.P. Kondrakhin [ta in.]; Za red. V.I. Levchenka ta V.M. Bezukha – Bila Tserkva, 2017. – 544 s. 6. Veterinary medicine. A textbook diseases cattle, sheep, pigs, goats and horses/ Gts edition / Smit B.P. – 2002 7. Textbook of internal medicine. / Stefen J. Etinger, Edvard C. Feldman. – 2005.
Language of teaching	Ukrainian

The structure of the discipline by type of occupation

A lectures	B seminars	C Self-education	D laboratory	E non-clinical with animals, models	F Clinical with animals	G other	H total
16	3	42	-	18	11	-	90

Date of the last modification of the program	28.08.2020

Name of the university: Bila Tserkva National Agrarian University	
Name of the faculty: Faculty of Veterinary Medicine	
Subject	**CLINICAL AND ECOLOGICAL TOXICOLOGY**
Teachers	Nataliia Vovkotrub, PhD, DVM; Olexander Chub, PhD, DVM; Vasyl Bezukh, PhD, DVM
Forms of study: Lectures / practical **Volume of study load:** ECTS credits - 3 (90 hours) **Form of study:** full-time **Weekly loading:** 3 (1/2) **Student attendance:** obligatory	
Course and semester in which the discipline is planned to be studied	5 year, 10 semester
Prerequisites for studying the discipline	Veterinary clinical biochemistry, Animal nutrition, Animal physiology, Pathological physiology, Pharmacology and Pharmacotherapy, Propaedeutics and diagnostic imaging, Radiobiology, Veterinary toxicology
Methods of knowledge control	Test

Learning outcomes and competencies	**Learning outcomes defined by the Standard of Higher Education in Ukraine for the specialty 211 "Veterinary Medicine": 1, 2, 7.** Students ***must know***: the main ecotoxins and mechanisms of their influence on animals and poultry; basic diagnostic, therapeutic and prophylactic algorithms for serotoxins poisoning, their role according to the "One Health" concept. ***Be able to:*** sampling, preserving, packaging and forwarding the samples for chemical and toxicological research; organize and conduct laboratory and special diagnostic tests and analyze their results; use information and communication technologies in professional activities; develop toxicological protocols and apply different treatment regimens for animals with various origins poisoning; to develop and organize measures for the prevention of animals and poultry toxicities with ecotoxins in accordance with "One Health" concept and in the case of poisoning - to make a qualified diagnosis using modern research methods.
Description of the discipline	
The base of the discipline	Classrooms, Laboratory of Clinical Biochemistry of the Department of Therapy and Clinical Diagnostics, interdepartmental laboratory of the Faculty of Veterinary Medicine, educational veterinary clinic (VTH), public and private clinics and farms.
Topics of classroom lessons	Topic 1. Subject, definition and objectives of clinical and environmental toxicology. Introduction of ecotoxicology. Topic 2. Organ and system Toxicity in domestic animals and poultry. Topic 3. Toxicology of insecticides. Topic 4. Toxicology of fungicides and herbicides. Topic 5. Biotoxins. Topic 6. Toxicology of metals. Topic 7. Toxicology of drugs. Topic 8. Household and industrial products poisoning. Topic 9. Food poisoning in small domestic animals. Topic 10. General characteristics, diagnostic principles, treatment and prevention of mycotoxicosis in animals and poultry.
Recommended literature:	1. Malinin O.A. Veterynarnaia toksykolohyia: Ucheb. posobye / Malinin O.A., Khmelnytskyi H.A., Kutsan A.T. – Korsun-Shevchenkovskyi, 2002. – 464 s. 2. Berny P. Guide pratique de toxicologie clinique veterinaire / P. Berny, S.Queffelec // Medcom. – Paris, 2014. – 351 p. 3. Plumlee K. Clinical veterinary toxicology / K. Plumlee // Mosby, 2004. – 477 p. 4. Veterynarna mikotoksykolohiia: navchalnyi posibnyk / V.B. Dukhnitskyi, H.O. Khmelnytskyi, H.V. Boiko, V.D.Ishchenko. – Kyiv, 2010. – 203 s. 5. Laboratorna veterynarna toksykolohiia: Navch. posibnyk / [V.I. Levchenko, A.V. Rozumniuk, Yu.M. Novozhytska ta in.]. – Bila Tserkva, 2012. – 216 s.
Language of teaching	Ukrainian

The structure of the discipline by type of occupation

A lectures	B seminars	C Self-education	D laboratory	E non-clinical with animals, models	F Clinical with animals	G other	H total
16	6	42	12	6	8	-	90

Date of the last modification of the program	28.08.2020

Name of the university: Bila Tserkva National Agrarian University	
Name of the faculty: Faculty of Veterinary Medicine	
Subject	**DISEASES OF BEES**
Teacher	Alexander Dovgal, PhD
Forms of study: Lectures / practical **Volume of study loading: ECTS-3.0 credits (90 hours);** **Weekly loading:** **Student attendance: required**	
Course and semester in which the discipline is planned to be studied	5 year, semester - 10
Prerequisites for studying the discipline	“ Zoology ”,“ Veterinary epidemiology ”,“ Pharmacology and pharmacotherapy ”,“ Veterinary microbiology and immunology ”,“ Veterinary parasitology and invasive diseases ”.
Methods of knowledge control	Test
Learning outcomes and competencies	Students must know and be able to: Knowledge: - rules and features of work with infectious bees; - methods of diagnosis of infectious diseases of bees; - methods of epizootological inspection of the farm apiary, selection and shipment of material, conducting diagnostic tests; - methods of planning and conducting anti-epizootic measures in beekeeping. Skill: - to carry out epizootological inspection of the farm apiary, modern methods and preparations for veterinary and sanitary treatments (disinfection, deratization, disinsection); - apply methods of diagnosis of infectious diseases of bees; - based on the results of diagnostic studies to develop anti-epizootic measures.
Discipline description	

The base of the discipline	Classrooms, laboratory of the department, Interdepartmental clinics and apiary of the research farm of the university, public and private apiaries, beekeeping associations for the production of beekeeping products.
Topics of classroom classes	Lecture topics: Beekeeping - a branch of agricultural production 2. Biology of honey bees. The origin of the bee family. Caring for bees. Biological features of wintering bees. 3. Classification of bee diseases. Infectious and non-communicable diseases of bees. 4. Bacterioses: European, American rot, paragnitis, septicemia, hafniosis. Viral diseases of bees: saccular brood, acute viral paralysis, chronic viral paralysis, filomentovirus. Mycoses of bees: aspergillosis of bees, ascospherosis of bees, melanosis. 5. Invasive diseases of bees: protozoa (nosematosis), arachnosis (acarapidosis, varroasis). Invasive diseases of bees: entomoses (braulosis, senothianosis, physocephaly). Helminthiasis of bees. 6. Veterinary and sanitary measures in apiaries. Veterinary care of apiaries. Veterinary and sanitary requirements for apiaries, winter quarters, cellars and other facilities. 7. Certification of apiaries. Accounting documents in apiaries. Disinfection, disinsection, deratization in apiaries. 8. Veterinary and sanitary supervision during the procurement and storage of beekeeping products. State control of honey and other beekeeping products in the food market. Topics of practical classes: 1. Anatomy and biology of the honey bee. Biology of the honey bee. Anatomical structure of various individuals of the bee family. The structure of the external organs of the bee body (organs of movement, vision, taste analyzers, smell, etc.). IN 2. Honey bee immune system. External and internal mechanisms of immune defense, their structure and significance. Features of age-related immunity. The order of selection and transfer of pathological material for laboratory research of diseases of bees. 3. Beehives, buildings and beekeeping equipment. Feeding bees. Different types of hives, the main requirements for them. Inventory, beekeeping buildings. Rules for feeding bees. Carbohydrate-protein, vitamin, mineral fertilizers 4. Toxicosis of bees. Diagnosis, prevention, treatment of chemical toxicosis. Phytotoxicosis. Non-communicable diseases of bees.E 5. Bacteriosis, viruses, mycoses of bees.F 6. Invasive diseases of bees.F 7. Bee products, their use and importance in medicine 8.Rules for selection and transferpathologicalmaterial. IS Self-education work:

	9. Diseases of bees that occur as a result of violations of housing conditions. 10. Pests and enemies of bees. 11. Determination of economic losses in bee poisoning. 12. Abnormal phenomena in the bee family (raid, flight, bee wandering, etc.). 13. Putrefactive diseases of bee brood: European, American rot, paraglynitis. 14. Bacteriosis of worker bees: salmonellosis, colibacillosis, hafniosis and others. 15. Viral diseases of bees: saccular brood, acute viral paralysis, chronic viral paralysis, filomentovirus (diagnosis, prevention and control measures). 16. Mycoses of bees: aspergillosis of bees, ascospherosis of bees, melanosis (diagnosis, prevention and control measures). 17. Little-studied viral diseases of bees. 18. Exotic diseases of bees. 19. Protozoa (nosematosis, amebiasis). 20. Arachnoses (acarapidosis, varroasis), diagnosis, prevention and control measures). 21. Diagnosis, prevention and control of bee pests (insects, birds and animals, pests and enemies of bees). 22. Carrying out disinfection, deratization and disinsection in apiaries. 23. Veterinary and sanitary rules for nomadic beehives. 24. Requirements for labor protection and safety in apiaries. 25. Rules of registration apiaries. 26. Special veterinary and sanitary measures in apiaries. 27. Veterinary and sanitary requirements for apiaries, winter quarters and honeycombs. 29. The procedure for filling in the veterinary-sanitary passport of the apiary. 30. Protection of apiaries from pathogens. 31. Processing of wax raw materials in apiaries. 32.Determination of losses and economic efficiency of measures in bee diseases. 33. Instructions for the prevention and elimination of diseases and poisonings of bees. 34. Veterinary requirements for import to Ukraine of honey bees, bumblebees, and alfalfa leaf bees. 35. Rules of import to Ukraine and export of bees and beekeeping products. 36. Veterinary support of beekeeping. 37. Law of Ukraine "On Beekeeping

Literature recommended:	1.Інструкція щодо попередження та ліквідації хвороб і отруєнь бджіл. 2. Біологія медоносної бджоли. Вулики, пасічний інвентар і документи обліку на пасіці. (Білоцерків. с.-г. ін-т;). Скл.: О.Б. Домбровський, П.Г. Шульга, Д.І. Бондаренко, Г.Г. Сорокун. – Біла Церква, 1993. – 54 с. 3. Галатюк О.Є. Хвороби бджіл. // О. Є. Галатюк. - Київ : [б. в.], 2012. - 92 с. - (Бібліотека "Пасіка"; № 1-4, 2012). 4. ГалатюкО. Є. Хвороби бджіл та основи бджільництва : навч. посіб. // О. Є. Галатюк. - 2-ге вид., виправл. і доповн. - Житомир : Полісся, 2010. - 342 с. 5. Достоєвський П.П., Нікітін П. Комплекс заходів боротьби з хворобами бджіл. // Ветеринарна медицина України. – 1996. – № 6. – С. 24 – 25. 6. Практикум з питань бджільництва та хвороб бджіл/ [Домбровський О.Б., Ярчук Б.М., Тирсін Р.В.,та ін.] //Біла Церква, 2002.– 248с. 7. Рекомендації з діагностики заразних захворювань бджіл (для спеціалістів ветеринарної медицини, пасічників та студентів факультету ветеринарної медицини)./ Білоцерків. держ. аграр. ун-т. Укл.: І.Ю.Бісюк, Б.М. Ярчук, О.Б. Домбровський та ін. – Біла Церква, 1999. – 28 с.
Language of instruction	Ukrainian

The structure of the discipline by type of occupation

A lectures	B seminars	C Self-education	D laboratory	nonclinical with animals F	clinical with animals	G other	H total
16	8	58		4	4		90

Date of the last modification of the program	29.08.2019 p.

Name of the university: Bila Tserkva National Agrarian University	
Name of the faculty: Faculty of Veterinary Medicine	
Subject	**DISEASES OF FUR-BEARING ANIMALS**
Teacher	Alexander Dovgal PhD, DVM
Forms of study: Lectures / practical **Volume of study loading: EKTS credits - 3 (90 hours)** **Weekly loading: 2 hours** **Student attendance: required**	
Course and semester in which the discipline is planned to be studied	5 M year, 10 semester
Prerequisites for studying disciplines	Animal anatomy; Cytology, histology, embryology; Animal physiology; Pathological physiology; Veterinary microbiology; Clinical diagnosis and diagnostic imaging,

	pharmacology and pharmacotherapy; General and special epizootology.
Methods of knowledge control	Modular control, test
Learning outcomes and competencies	The result of teaching the discipline is the acquisition by students of the following knowledge and skills: Knowledge: - know the etiology, pathogenesis and epizootology of infectious diseases of fur animals, including cross-border in accordance with the requirements of the OIE, the basics of keeping and exploitation of animals; - have professional knowledge and understanding of the main provisions of international and European legislation on the welfare of fur animals; - know the features of the biology of fur animals; - know the epizootology, treatment and prevention of infectious diseases of fur animals Skill: - have methods of clinical and laboratory research to monitor the health of animals and control the implementation of measures for the treatment of sick animals and prevention of animal diseases of various etiologies; - be able to take, preserve, package and send samples of animal, plant and biotechnological origin for research, to conduct veterinary accounting, to prepare reporting documentation; - be able to identify the sources of the pathogen, determine the factors and mechanism of their transmission; to provide isolated keeping of sick and suspected animals with infectious diseases; carry out forced vaccinations of animals in disadvantaged and endangered service areas; take measures aimed at preventing the spread of the infectious agent outside the epizootic outbreak and the elimination of the outbreak itself; not to allow people with zoonoses to take care of animals; - have a methodology for conducting epizootological, parasitological, chemical-toxicological, radiological, sanitary and hygienic studies to diagnose animal diseases of non-communicable, infectious and invasive etiology using instrumental and laboratory methods; analyze the results of the study of biological material; interpret the results of research taking into account the achievements of science and practice; - have generally accepted methods of clinical and laboratory research to control the health of animals and compliance with the order of production and circulation of food products from animals treated and preventive treatments, in accordance with the concept of "Single Health"; - be able to organize the rehabilitation of livestock facilities by chemical, biological and physical methods and control it; - be able to operate with the basic concepts of biosafety, biosecurity, have the basics of bioethics; analyze current and current ethical issues in the biotechnology and pharmaceutical industries; analyze the causes of epizootic situations and infectious diseases that appear in recent years.

Description of the discipline	
The base of the discipline	Classrooms, laboratory of the department, interdepartmental clinics and farms of the research farm of the university, farms of agricultural enterprises.
Topics of classroom lessons	**Lecture topics:** Topic 1. Veterinary and sanitary requirements for animal farms. Topic 2. Biological features of fur animals. Topic 3. Carnivorous plague. Topic 4. Infectious carnivorous hepatitis Topic 5. Myxomatosis. Topic 6. Botulism. Topic 7. Salmonellosis Topic 8. Leptospirosis. **Topics of practical classes:** Topic 1. The main species of fur-bearing animals bred in animal farms. Topic 2. Biological features of fur animals of the canine family. Topic 3. Infectious hepatitis of carnivores Topic 4. Aleutian mink disease Topic 5. Viral hemorrhagic disease of rabbits Topic 6. Enterotoxemia Topic 7. Colibacillosis. Topic 8. Listeriosis. Topics of self-education classes: Topic 1. General problems of fur animal husbandry. Subject and objectives of the course. Fur farming as an industry. Topic 2. The main species of fur-bearing animals bred in animal farms. Topic 3. Veterinary and sanitary requirements for animal farms. Topic 4. Biological features of fur animals of the canine family. Topic 5. Species of foxes. Basic breeding and cultivation of foxes. Featuresfeeding of young animals. Origin and breed of polar fox and raccoon dog. Topic 6. Biological features of fur animals of the marten family Topic 7. Breeding, keeping and growing young. Breeding, keeping and growing mink and polar fox. Topic 8. Biological features of fur animals of the rodent family. Topic 9. Growing rabbits and awl tires. Disease prevention measures on rabbit farms. The main diseases of rabbits and chinchillas Topic 10. Slaughter of fur-bearing animals. Methods of slaughter fur animals. Primary processing of skins. Ways to remove skins from different species of fur animals. Topic 11. Carnivorous plague. Topic 12. Infectious hepatitis of carnivores Topic 13. Enzootic encephalomyelitis

	Topic 14. Myxomatosis. Topic 15. Encephalopathy of mink Topic 16. Aleutian mink disease Topic 17. Viral hemorrhagic disease of rabbits Topic 18. Smallpox. Topic 19. Infectious rhinotracheitis. Topic 20. Epizootic catarrhal gastroenteritis of mink. Topic 21. Aujeszky's disease. Topic 22. Botulism. Topic 22. Botulism. Topic 23. Enterotoxemia Topic 24. Colibacillosis. Topic 25. Salmonellosis Topic 26. Pseudomonas Topic 27. Brucellosis. Topic 28. Tuberculosis. Topic 29. Leptospirosis. Topic 30. Listeriosis. Topic 31. Tularemia. Topic 32. Pasteurellosis. Topic 33. Diplococosis. Topic 34. Staphylococcus. Topic 35. Streptococcosis. Topic 36. Pseudotuberculosis.
Language of instruction	Ukrainian.
Literature recommended	1. Сімоненко М.В., Ярчук Б.М. Хворобихутровихзвірів (діагностика, профілактика, заходи боротьби): Навчальнийпосібник. – БілаЦерква, 4006.– 160 с. 2. Інфекційні та інвазійніхвороби кролів / Л.Є. Корнієнко, О.Б. Домбровський, С.І. Пономар, А.А. Антіпов.– БілаЦерква, 4003.– 488 с. 3.Хворобихутровихзвірів: Методичнівказівки для забезпеченнясамостійноїроботистудентів з модуля «Профілактика хвороб хутровихзвірів» /М.В. Сімоненко, П.Г. Шульга, О.В. Довгаль.–БілаЦерква, 2004.– 14 с. 4. Біологія та основніхворобинутрій і ондатр: Методичнірекомендації для студентів факультету ветеринарноїмедицини та слухачівІнститутупіслядипломногонавчання / Білоцерків. держ. аграр. ун-т; Скл.: М.В. Сімоненко, Б.М. Ярчук.– БілаЦерква, 2000.– 44 с. 5. Профілактика хвороб нутрій та ондатр: Методичнірекомендації для студентів факультету ветеринарноїмедицини та слухачівІнститутупіслядипломногонавчання / М.В. Сімоненко, Б.М. Ярчук, М.М. Сімоненко.–БілаЦерква, 2004.–55 с.

The structure of the discipline by type of occupation

A lectures	B seminars	C Self-education	D laboratory	E non-clinical with	F Clinical with animals	G other	H total

				animals			
16	8	58		4	4		90

Date of last modification of the program	18.06.2020 p.

Name of the university: Bila Tserkva National Agrarian University	
Name of the faculty: Faculty of Veterinary Medicine	
Subjects	**DISEASES OF FISH**
Teachers	Vladimir Dzhmil, PhD, DVM;
Forms of study: Lectures / practical **Volume of study load**: ECTS credits - 3 (90 hours); **Weekly workload**: 10 semester - 2 (1/1) **Student attendance**: required	
Course and semester in which the discipline is planned to be studied	5 coyrse, 10 semester
Prerequisites for studying the discipline	"Animal Anatomy", "Animal Hygiene", "Veterinary Microbiology", "Veterinary Toxicology", "Epizootology, Infectious Diseases and Preventive Medicine", "Parasitology and Invasive Diseases"
Methods of knowledge control	Test
Learning outcomes and competencies	Learning outcomes defined by the Standard of Higher Education of Ukraine for the specialty 211 "Veterinary Medicine": PH1, PH4, PH6, PH17, PH18. Students must know and be able to: Knowledge: • causes of diseases and poisonings of aquatic organisms and general principles of their prevention and elimination; • methods of conducting diagnostic tests of fish and other aquatic organisms; • general rules of control over the epizootic and sanitary condition of fishery reservoirs; • basics of planning preventive and health-improving measures in fisheries; • basics of veterinary and sanitary rules of design and construction of fisheries; • general rules and procedures for veterinary supervision of the transportation of fish within the country, the export and import of fish for breeding and acclimatization, as well as use for food or feed purposes; • basics of sanitary quality control of cultivated and caught aquatic organisms;

	• requirements and rules for registration and issuance of relevant documents for the sale of fish and other aquatic organisms. Skill: • plan preventive and health measures in fisheries; • to conduct epizootological research of fish farming; and clinical trial • conduct a clinical study of fish; • conduct parasitological examination of fish; • perform pathological autopsy of fish; • make a preliminary diagnosis of fish disease; • take blood and other pathological material for examination; • determine the extent and intensity of invasion in parasitic diseases of fish; • use drugs in individual and group treatment of fish; • to carry out differential diagnosis of fish poisoning from other diseases; • to conduct organoleptic research of fish with the aim of determining its quality.
Description of the discipline	
The base of the discipline	Auditoriums, Research Laboratory of Veterinary Sanitary Examination and Hygiene of Livestock Products of BNAU, rates of NVC BNAU, state laboratories of veterinary and sanitary examination in the markets
Topics of classes	1. Introduction. History of formation, current state and prospects of ichthyopathology as a science, its role and place in the fish industry. The contribution of domestic scientists in the development of ichthyopathological research. Tasks and content of the discipline. 2. Characteristics of pond fish farms 3. Growing carp and herbivorous fish by artificial method. 4. Characteristics of fish farms. Types, systems, revolutions. 5. Ways to intensify fish farming. 6. General information about fish diseases. Classification of fish diseases. 7. Prevention of nutritional diseases of fish and poisoning. 8. Enemies, fish pests and ways to control them.
	1. Anatomy of fish. Anatomical structure of predatory and peaceful fish, methods of complete parasitological dissection of fish. 2. Methods of diagnosing fish diseases. 3. Preventive and veterinary-sanitary measures in fish farms. 4. General measures to combat fish diseases and rehabilitation of fish farms. 5. Infectious diseases of fish. 6. Invasive fish diseases. 7. Non-communicable diseases of fish. 8. Toxicosis of fish.
Recommended Books:	1. Микитюк П.В., Якубчак О.М. Хвороби прісноводних риб. - К.: Урожай, 1992.-160 с. 2. Справочник по болезням прудовых рыб / П.В. Микитюк, Е.Ф. Осадчая, Т.П. Погорельцева и др.;Под ред. П.В. Микитюка. - К.: Урожай, 1984.-248 с.

	3. Лабораторний практикум з біології, патології та ветсанекспертизи прісноводних риб // П.В. Микитюк, В.В. Просяна, П.В. Букалова; Під ред. П.В. Микитюка. - Біла Церква, 1994- 121 с (Учбовий посібник). 4. Ветеринарно-санитарная экспертиза пресноводной рыбы: Справочник / П.В. Микитюк. П.В Житенко- В.С. Осетров и др.; Пол ред. П.В. Микитюка. - М.: Агропромиздат, 1989. 207 с. 5. Атлас промислових риб України / М.В. Гринжевський, С.І. Алимов, М.С.Ківа, П.В. Микитюк, В.І. Джміль та ін. – К.: КВІЦ, 2005. – 95 с. 6. Практикум з ветеринарно-санітарної експертизи з основами технології та стандартизації продуктів тваринництва і рослинництва. – Київ: «Ветінформ», 1998. – 240 с.
Language of instruction	**Ukrainian**

The structure of the discipline by type of occupation

Subject	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**
Diseases of fish	16	16	58			-	-	270 (3кредити)

A: lectures; B: seminars; C: controlled self-study; D: laboratory and descriptive work, E: non-clinical work on animals; F: clinical work on animals; G: others (specify); H: together

Date of the last modification of the program	26.03.2021 р.

Name of the university: Bila Tserkva National Agrarian University	
Name of the faculty: Faculty of Veterinary Medicine	
Name of the faculty: Faculty of Veterinary Medicine	**CLINICAL VETERINARY PHARMACOLOGY**
Teachers	Rublenko Serhiy Vasyliovych Doctor of Veterinary Sciences, Professor of the Department of Parasitology and Pharmacology Avramenko Natalia Vladimirovna, Koziy Natalia Vladimirovna, Shaganenko Raisa Vladimirovna Candidates of Veterinary Sciences, Associate Professors of the Department of Parasitology and Pharmacology
Forms of study: Lectures / practical **Volume of study load: EKTS credits - 3 (90 hours);** **Weekly load:** **Student attendance: required**	
Course and semester in which the discipline is planned to be studied	6M course
Prerequisites for studying the discipline	Pharmacology and pharmacotherapy, Internal non-communicable diseases, Surgery, Epizootology, Parasitology

Learning outcomes and competencies	Learning outcomes defined by the Standard of Higher Education of Ukraine for the specialty 211 "Veterinary Medicine": PH4, PH7, PH15.
List of competencies and relevant learning outcomes provided by the discipline	Students must know and be able to: Knowledge nomenclature of modern drugs for veterinary medicine; ways of introduction into an organism and features of absorption, biotransformation and allocation from an organism of medicinal substances at various pathology; the mechanism of local, reflex and resorptive action of drugs on the body of animals, pathogens of parasitic and infectious diseases; indications and contraindications to the use of drugs, taking into account the type, age, sex of the animal and the specific pathology; methods of prescribing, toxic and adverse side effects in each case; treatment for poisoning in case of overdose; Skill calculate the dose and determine the frequency of drug administration to a sick animal; determine the therapeutic efficacy of drugs combining drugs of different groups for a specific pathology use etiotropic, pathogenetic and symptomatic therapy
Description of the discipline	
The base of the discipline	Audiences. Interdepartmental clinics and farms of the research farm of the university.
Topics of classroom classes	Lecture topics 1. Clinical pharmacology. Subject and tasks of clinical pharmacology. Pharmacodynamics and pharmacokinetics of drugs. Interaction of drugs. Side effects of drugs. 2. Pharmacokinetics of drugs depending on their properties, method of drug use, physiological features of the organism and its functional state. 3-5. Rational use of chemotherapeutic substances for certain diseases 6-7. Characteristics of medicinal substances by action on various organs and systems and justification for their use in certain pathologies Topics of laboratory classes 1-2. Types of action of medicinal substances. Factors influencing the manifestation of the pharmacological effect of drugs. 3. Fundamentals of pharmacokinetics of drugs in different species of animals depending on the physiological and pathological condition 4-6. Chemotherapeutic agents - classification of properties, features of use in veterinary medicine.

	7. Pharmacotherapy for disorders of the central nervous system. 8. Clinical pharmacology of drugs for respiratory diseases. 9. Clinical pharmacology of drugs for diseases of the digestive system 10. Clinical pharmacology of drugs for diseases of the uterus, ovaries and breast. 11. Clinical pharmacology for diseases of the urinary system 12. Clinical pharmacology for surgical pathology 13. Pharmacotherapy for parasitic diseases 14. Treatment of drug poisoning
Recommended Books	1. Veterinary drugs. Directory. / Kanyuka O.I., Khariv I.I., Gunchak V.M., Gufriy D.F. – Lviv. - Publishing House PE "Bodlak", 2005. - 642 p. 2. Clinical veterinary pharmacology / ed. O.I. Buzzards. - O . Astroprint, 2011. - 296 p. 3. Veterinary Pharmacology and Therapeutics, 10th Edition / Jim E. Riviere (Editor), Mark G. Papich (Editor). - 2017, Wiley-Blackwell. - 1552 p. 4. Khmelnytsky G.O., Dukhnitsky V.B. . Veterinary pharmacology. Kyiv, 2017. - 571p 5. Modern course of veterinary medicine Kirk / trans. with eng. - M .: OOO «Aquarium Print», 2005. - 1376 p .: il
Language of instruction	Ukrainian

The structure of the discipline by type of occupation

Subject	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**
Clinical pharmacology	14	10	48	10	8	-	-	90 (3 credit)

Date of the last modification of the program	28.08.2019.

Name of the university: Bila Tserkva National Agrarian University	
Name of the faculty: Faculty of Veterinary Medicine	
Subjects	**LABORATORY DIAGNOSTICS**
Teachers	Iryna Rublenko, doctor habilitated, DVM (guarantor); Andriy Andriychuk, PhD, DVM; Vladimir Zotsenko, PhD, DVM, Vovkotrub Natalia, PhD, DVM (laboratory diagnostics (chemical and toxicological research methods), Volodymyr Shaganenko PhD, DVM (laboratory diagnostics of parasitic diseases); Natalia Tyshkivska and Oksana Khitska PhD, DVM (laboratory research in food hygiene); Taras Tsarenko Ph DVM (epizootology and system of diagnostic procedures)
Forms of study: Lectures / practical Volume of study load: ECTS credits - 7 (210 hours); Weekly workload: 11.12 semester - 4 (1/3) Student presence: selective	

Course and semester in which the subject is planned to be studied	6 course, 11.12 semester
Prerequisites for studying the discipline	“Animal Anatomy”, “Cytology, Histology, Embryology”, “Animal Physiology”, “Cell Genetics and Molecular Biology”, “Veterinary Microbiology”, “Animal Physiology”, “Veterinary Microbiology and Immunology”, “Food Safety, Food Quality and feed "" epizootology, infectious diseases and preventive medicine "," veterinary toxicology "," food hygiene and state control "," organization of veterinary service and public health "," zoonoses and the concept of single health ".
Methods of knowledge control	Test, exam
Conditions for taking the course	Pregnant students may not attend this course
Learning outcomes and competencies	The result of teaching the discipline is that students receive the following knowledge and skills: **Students knowledge and skills:** **Knowledge:** Organization and activity of laboratories. The structure of the laboratory service of Ukraine. Interlaboratory comparative tests. Study of biosafety issues, biorisks, SOPs. The use of laboratory animals in experiments. Programs, regulations and laws of laboratory work in the study of microbiological indicators. Laboratory equipment for safety. Knowledge and application of rules on laboratory biosafety. International standards of bacteriological research methods. Methods of bacterial storage. Chromatogenic media. Preparation of chromogenic nutrient media for cultivation of microorganisms of different nosological groups, their sterilization and determination of pH. **Skills**: to prepare, process samples of biological and pathological material of animals, products of animal origin, fodder, soil, water, plants; dispose of waste, spent samples, materials and reagents**.** Disinfect laboratory utensils, tools, overalls, biological material, laboratory equipment. Determine the quality of disinfection and sterilization. to determine the sanitary condition of laboratory premises. to carry out ELISA staging. Conduct diagnostic studies of environmental objects and in the diagnosis of infectious animal diseases.
Description of the subjects	
The base of the discipline	Auditorium and laboratory of the department, research laboratories of BNAU, public and private laboratories of Kyiv region, museum and laboratory of the Department of Parasitology and Pharmacology, Interdepartmental clinics and farms of the research farm of the university, public and private clinics for companion animals, farms of agricultural enterprises
Topics of classroom lessons	Lecture topics: Module 1. Organization of laboratories (I. Rublenko, V. Zotsenko, A. Andriychuk) 1. Laboratory pathogenicity groups, structure, rules of operation, safety in different groups and personal prevention, classification. Knowledge and application of rules on laboratory biosafety, risk management. Workplace equipment. Determining the rules of utilization of waste, spent samples, materials and reagents. Module 2. General issues of microbiology in the laboratory (I. Rublenko, V. Zotsenko, A. Andriychuk). 1. Programs, regulations and laws of laboratory work in the study of microbiological indicators and especially dangerous pathogens. Module 3. Laboratory diagnostics of bacteriological and viral research methods (I. Rublenko, V. Zotsenko, A. Andriychuk) 1. Code of ethics for employees of diagnostic laboratories. Use of electronic (computer) laboratory information systems.

	2. Acquaintance and use of rapid tests for isolation and identification of pathogens. Module 4. Use of diagnostic tests in the system of anti-epizootic measures (T. Tsarenko) 1. Selection and interpretation of diagnostic tests in epizootological research. 2. The system of diagnostics of infectious diseases of animals in ensuring epizootic well-being. 4. Module 5. Laboratory research in food hygiene (O. Khitska, N. Tyshkivska). 1. Organization of activities and operation of laboratories. International standard ISO 17025. Management of laboratory work. Technical requirements for the laboratory. 2. Procedures for confirming the effectiveness (quality) of laboratory diagnostics: internal and cross-audit; verification (verification), validation (confirmation); providing a system of quality control of research (intra-laboratory and inter-laboratory control). MPV (interlaboratory comparative tests). Module 6. Chemical and toxicological methods of disease diagnosis (N. Vovkotrub) 1. Organization of work of chemical and toxicological departments of veterinary medicine laboratories (according to the requirements of DSTU: ISO 17025). 2. Objects of toxicological and biochemical research. Methods of isolation of toxic substances from various objects of veterinary control (pathological material). Module 7. Diagnosis of parasitic diseases (V. Shaganenko) 1. Introduction. Special helminthological researches in practice of the veterinarian. Lesions of organs and systems in parasitic diseases. Diagnostic signs of helminth eggs, joints and helminth larvae. 2. Diagnostic signs of causative agents of acarosis and entomoses of animals. Diagnostic signs of pathogens of protozoa in animals and birds, informativeness of microscopic research methods. Topics of practical classes: Module 1. Organization of laboratory activities (I. Rublenko, V. Zotsenko, A. Andriychuk) 1. Interlaboratory comparative tests. Study of biosafety issues, biorisks, SOPs. (E) 2. Microscopy of bacteria of different nosological groups. Production of smear preparations, imprint preparations from cultures of microorganisms and test material. Preparation of dyes, features of staining of different nosological groups. (IS) 3. Preparation and principles of processing samples of biological and pathological material of animals, products of animal origin, feed, soil, water, plants. Sanitary condition of laboratory premises. (IS) 4. Methods of studying the mobility of different taxonomic groups of microorganisms. Quality control of disinfection and sterilization of boxes, equipment, etc. (IS) 5. Workshop (B) Module 2. General issues of microbiology in the laboratory (I. Rublenko, V. Zotsenko, A. Andriychuk). 6. Devices for ELISA. Measuring and auxiliary equipment for ELISA. Classification of ELISA methods. The main stages of ELISA. Possible errors during ELISA. Evaluation of ELISA results. The principle of implementation, advantages, disadvantages, analytical characteristics. (E, D) 7. Methods of detection and identification of infectious agents (fungal bacteria, viruses) in the air. (IS)

	8. Methods of detection and identification of infectious agents (fungal bacteria, viruses) in water. (IS) 9. Methods of detection and identification of infectious agents (bacteria, fungi) in the soil. (IS) 10. Workshop (B) Module 3. Laboratory diagnostics of bacteriological and viral research methods (I. Rublenko, V. Zotsenko, A. Andriychuk) 11. Laboratory research methods in the diagnosis of infectious diseases of cattle. (ED) 12. Laboratory research methods in the diagnosis of infectious diseases of pigs. (ED) 13. Laboratory methods for diagnosing infectious diseases of birds. (ED) 14. Laboratory research methods in the diagnosis of infectious diseases of horses. (E) 15. Laboratory research methods in the diagnosis of infectious diseases of sheep. (E) 16. Laboratory methods for diagnosing infectious diseases of dogs. Laboratory methods for diagnosing infectious diseases of cats. (E) 17. Laboratory methods for diagnosing infectious diseases of laboratory animals. (E) 18. Laboratory methods for diagnosing infectious diseases of exotic animals. (E) 19. Laboratory methods for diagnosing infectious diseases of fish. Laboratory methods for diagnosing infectious diseases of insects. Determination of the quality of veterinary immunological agents (vaccines, sera) 20. Workshop (B) Module 4. Use of diagnostic tests in the system of anti-epizootic measures (T. Tsarenko) 1. Regulating the use of research methods in epidemiological studies at the international and national levels (D). 2. The choice of research methods to ensure epizootic well-being, calculation of the effectiveness of diagnostic tests (D). 3. Diagnostic procedures during the epizootic investigation (D). 4. Seminar (B). 5. Module 5. Laboratory research in food hygiene (O. Hitska, N. Tyshkivska) 1. Laboratory methods of control of residues of contaminants, toxicants and veterinary drugs in food (D). 2. Use of ELISA to control hazardous factors and food adulteration. Determination of residual amount of antibiotics and antibacterial substances in food (E). 3. Control of food safety and naturalness by molecular genetic research (PCR) (D). 4. Seminar (B). Module 6. Chemical and toxicological methods of disease diagnosis (N. Vovkotrub) 1. Monitoring of laboratory research methods. Material selection procedures for chemical and toxicological research. Influence of drugs on the results of biochemical studies. 2. Physical and physico-chemical principles of equipment use in clinical laboratory practice. 3. Development of methods for bioassays to determine the toxicity of substances of animal and plant origin. 4. Seminar (B). Module 7. Diagnosis of parasitic diseases (V. Shaganenko) 1. Laboratory diagnosis of helminthiasis. Faecal sampling and delivery to the laboratory. Methods of native smear, sedimentation, flotation.

	2. Methods of helmintholarvoscopy. Staining and identification of larvae of helminthic pathogens Laboratory diagnosis of pulmonary helminthiasis 3. Vital and mortal methods of diagnosis of animal acarosis. Laboratory diagnostic tests for protozoa of animals. 4. Seminar (B).
recommended literature:	1. Головко А.М. Ветеринарна санітарна мікробіологія Навчальний посібник // А.М. Головко, І.О. Рубленко. – Київ: Аграрна освіта, 2010. – 284 с. 2. Tackling drug-resistant infections globally: final report and recommendations. 2016. – 84p. https://amr-review.org/sites/default/files/160518_Final%20paper_with%20cover.pdf 3. Лабораторна ветеринарна токсикологія: Навч. посібник / [В.І. Левченко, А.В. Розумнюк, Ю.М. Новожицька та ін.]. – Біла Церква, 2012. – 216 с. 4. Лабораторне дослідження крові тварин та інтерпретація його результатів / [Левченко В.І, Головаха В.і., Сахнюк В.В та ін.]; За ред. В.І. Левченка і В.М. Безуха. – Біла Церква, 2015. – 136 с. 5. Уиллард Майкл Д. Лабораторная диагностика в клинике мелких домашних животных / Майкл Д. Уиллард, Гарольд Тверден, Торнвальд Грант Г. – М.: ООО "Акваріум Бук", 2004. – 432 с. 6. Методи лабораторної клінічної діагностики хвороб тварин / [Левченко В.І., Головаха В.І., Кондрахін І.П. та ін.]; За ред. В.І. Левченка. – К.: Урожай, 2010. – 470 с. **7.** Veterinary clinical parasitology / Anne M. Zajac, Gary A. Conboy. – Blackwell Publishing, 2011. – 8th ed. – 368 p. **8.** Veterinary parasitology / M.A. Taylor, R.L. Coop, R.L. Wall // Blackwell Publishing. – Carlton, 2015. – 4th ed. – 1029 p. 9. Довідник з диференціювання збудників інвазійних хвороб / Пономар С.І., Гончаренко В.П., Соловйова Л.М. ; за ред. С.І. Пономаря. – К.: Аграрна освіта, 2010. – 237 с. 10. Veterinary Epidemiology 4th ed. Michael Thrusfield. John Wiley & Sons, 19 лют. 2018 р. - 888 стор. 11. Epidemiology for Field Veterinarians: An Introduction. Evan Sergeant, Nigel Perkins. CABI, 28 лип. 2015 р. - 319 стор. 12. Animal Disease Surveillance and Survey Systems: Methods and Applications. by Mo Salman. November 2003. 13. ДСТУ ISO/IEC 17025:2017 Загальні вимоги до компетентності випробувальних та калібрувальних лабораторій 14. ДСТУ ISO 19011:2012 Настанова щодо здійснення аудитів систем управління — міжнародний стандарт, котрий має настанови з аудиту системи управління підприємства. 15. ДСТУ ISO 10012: 2005 “Вимоги до процесів вимірювання та вимірювального обладнання” 16. ДСТУ 2708 «Метрологія. Повірка засобів вимірювальної техніки. Організація і порядок проведення»
Language	Ukrainian

The structure of the subject

Subjects	A	B	C	D	E	FX	G	H
	26	**14**	**106**	**31**	**33**	-	-	**210 (7 cr.)**
Laboratory diagnostics	4	2	18	2	4	-	-	Epizootol. 30 (1 cr
	4	2	18	2		4	-	Parasitology 30 (1 cr

	8	6	42	17	17	-	-	Microbiol. 30 (1 cr
	4	2	18	2	4	-	-	VSE
	4	2	18	6		-	-	THERAPY30 (1cr)

Date of the last modification of the curriculum	Developed for the first time for 2020-2021 academic year.

The university name: Belotserkovsky national agrarian university	
The faculty name: Faculty of veterinary medicine	
The discipline name	**ILLNESSES OF LABORATORY ANIMALS**
Teachers	Shaganenko V. S PhD, DVM; Tsarenko T. M PhD, DVM; Новік О, DVM; Miller A.Ю. PhD, DVM; Сакара В, the master, DVM; Vlasenko S. A, the doctor габілітований, DVM; Єрошенко Island B PhD, DVM; Андр і є ць Century Г PhD, DVM; Utechenko M. V PhD, DVM.
Study forms: Lectures / Practical **About ' єм an academic load: credits EKTS - 7 (210 year.);** **Week loading: 4 (1/3)** **Presence of the student: the selective**	
Course and semestre in which discipline studying is planned	6M a course, 11-12 semestre
Preconditions of studying of discipline	"" Anatomy of animals "," Cytology, histology, эмбриология "," Animal physiology "," Genetics and molecular cytobiology "," Veterinary microbiology "," Animal physiology "," Veterinary microbiology and immunology "," Carelessness, quality of foodstuff and forages "" Epizootologija, infectious diseases and preventive medicine "," Veterinary toxicology "," the Organization of veterinary service and public health services public "," Zoonozy and the concept of unique health "," Veterinary clinical biochemistry "," Propaedeutics and diagnostic visualisation "," Veterinary toxicology "Pharmacology and pharmacotherapy", "Parasitology and інвазійні illnesses"
Quality monitoring of knowledge	Offset, examination

Results of study and competence	The results of study defined by the Standard of higher education of Ukraine for a speciality 211 "Veterinary medicine": PH1, PH9, PH10, PH11, PH12. Students owe to the nobility and be able: ***Knowledge:*** – The nobility of feature of a structure of an organism for norms and possible changes of the form and a structure of bodies for pathologies, and also morfo - physiologic features of reproductive function of laboratory animals; – The nobility of feature of the maintenance, methods of clinical research, treatment and preventive maintenance of internal noncontagious illnesses of laboratory animals; – The knowledge of an aetiology, патогенеза, эпизоотологии infectious and інвазійних diseases of laboratory animals, in particular the transboundary agrees requirements OEI and principles эрадикации flashes of infectious diseases among laboratory animals. ***Ability:*** – To lead selection, conservation, packing and transfer of samples of an animal origin for researches for infectious, інвазійних and internal noncontagious illnesses to spend некропсію the lost laboratory animals, to conduct the veterinary account, to make out the accounting documentation; – To analyze and interpret results of laboratory researches for infectious, інвазійних and internal noncontagious illnesses of laboratory animals, inclusive with results of a pathoanatomical section, taking into account science and practice achievements; – To be able to spend medical and diagnostic manipulations, at internal noncontagious illnesses and sampling at clinically healthy laboratory animals; – To be able to spend акушерское, gynecologic research to carry out control and stimulation of reproductive function at females of laboratory animals, and for a pathology establishment to give adequate treatment; – To reveal sources of activators of infections and инвазии laboratory animals, to define factors and the mechanism of their transfer; to provide the isolated maintenance of sick animals; to carry out come, the distributions of activators directed on a non-admission infectious and інвазійних diseases of laboratory animals for limits эпизоотического the centre and liquidation of the centre.
The discipline description	
The base of carrying out to occupy from discipline	Audiences and laboratories of chairs of faculty of veterinary medicine, Intercathedral clinics of university, the state and private clinics for tvarin - partners, виварий.
With those аудиторных to occupy	**That of lectures:** **The module 1. Інвазійні illnesses of laboratory animals (Shaganenko V. S PhD, DVM)** **1.** The introduction. Інвазійні diseases кролей. Features of diagnostics, treatment and preventive maintenance.

	2. Інвазійні diseases мурчаків, rats and the mouse. Features of diagnostics, treatment and preventive maintenance. **The module 2. Infectious diseases of laboratory animals (Tsarenko T. M PhD, DVM; Новік O, DVM)** **1. Features эпизоотологии illnesses of laboratory animals.** **2. Bacterial, virus and fungoid illnesses of laboratory animals: prevention and control.** **The module 3. Internal illnesses of laboratory animals (Miller A.Ю. PhD, DVM; Сакара B, the master, DVM)** **1.** Internal illnesses of laboratory animals are caused by metabolism and feeding infringement. **2.** Internal illnesses of laboratory animals are caused by infringement of minds of the maintenance. Introduction of the documentation on work with laboratory animals. **The module 4. Features of a reproduction of laboratory animals (Vlasenko S. A, the doctor габілітований, DVM; Єрошенко Island B PhD, DVM.)** **1.** Features of a reproduction кролей. **2.** Features of a reproduction мурчаків and the mouse. **The module 5. Features of surgical maintenance at laboratory animal (Andr і є ць Century Г PhD, DVM.)** **1.** Topographical anatomy and анестезиологическое maintenance of operative interventions at laboratory animals (local and general anaesthesia, инфузионная therapy and реанимационные come). **2.** Traumatism preventive maintenance at stressful conditions at laboratory animals. Use of principles of well-being for preventive maintenance of illnesses and reduction of quantity of cases of a traumatism. **The module 6. Pathological anatomy of laboratory animals (Utechenko M. V PhD, DVM.)** **1.** General characteristic and анатомо - physiologic features of laboratory animals (беспозвоночных and хребетних). **2.** Biosafety. Pathological anatomy of laboratory animals.
	With those practical to occupy: **The module 1. Інвазійні illnesses of laboratory animals (Shaganenko V. S PhD, DVM)** 1. Фасціольоз, diagnostics, treatment and preventive maintenance. 2. Ларвальні цестодоз. Эхинококкоз and цистицеркоз пізіформний. 3. Трихостронгілідози кролей 4. Псороптоз кролей. 5. Еймеріоз кролей 6. Seminar 7. Нематодозы мурчаків (Paraspidodera uncinata, Trichuris gracilis) 8. Саркоптоз мурчаків (Trixicarus cavia) 9. Нематодозы the mouse and rats (гіменолепідоз, оксиуратози) 10. Еймеріоз мурчаків, rats and the mouse 11. Seminar **The module 2. Infectious diseases of laboratory animals (Tsarenko T. M PhD, DVM; Новік O, DVM)**

	1. Епізоотологічні Features of infectious diseases at laboratory animals. The organisation противоэпизоотических actions among laboratory animals. 2. Bacterial illnesses of laboratory animals. 3. Virus illnesses of laboratory animals. 4. Fungoid illnesses of laboratory animals. 5. Seminar. **The module 3. Internal illnesses of laboratory animals (Miller A.Ю. PhD, DVM, Sakara B, the master, DVM)** 1. Features of clinical research, selection of blood and introduction of medical products at laboratory animals. 2. Illnesses are caused by infringement витаминно - a mineral exchange in laboratory animals. 3. Illnesses сечовидільно ї systems at laboratory animals. 4. A morphological and biochemical blood test of laboratory animals. 5. A seminar **The module 4. Features of a reproduction of laboratory animals (Vlasenko S. A, the Dr. габілітований, DVM; Єрошенко Island B PhD, DVM.)** **1.** Pregnancy diagnostics, control over its course; **2.** Pathology of sorts and рододопомога; **3.** Diagnostic algorithm and features of therapy for акушерских, gynecologic and андрологічних illnesses at кролей. **4.** Diagnostic algorithm and features of therapy for акушерских, gynecologic and андрологічних illnesses мурчаків and the mouse **5.** Seminar **The module 5. Features of surgical maintenance at laboratory animal (Andr і є ць Century Г PhD, DVM.)** **1.** Anesteziologichesky maintenance, реанимационные come also monitoring of the anaesthetised laboratory animals. **2.** Surgery of soft fabrics, treatments of wounds at laboratory animals **3.** Ways of diagnostics, treatment and preventive maintenance bone - an articulate pathology at laboratory animals **4.** Surgical methods of treatment of a pathology of urinogenital system at laboratory animals **5.** Seminar **The module 6. Pathological anatomy of laboratory animals (Utechenko M. V PhD, DVM.)** **1.** General characteristic беспозвоночных and позвоночных laboratory animals. Features of their structure. Safety precautions under an hour of research. **2.** morfo - Functional features of an organism беспозвоночных. **3.** morfo - Functional features хребетних. **4.** Лабараторні An animal: their topographical anatomy of an internal and feature patologo - anatomic diagnostics. **5.** Seminar
The recommended literature:	**1.** Fox, James G. Laboratory animal medicine. Elsevier, 2015. **2.** Laboratory Animal Medicine (Third Edition) American College of Laboratory Animal Medicine 2015, P 411-461.

	3. Nicklas, Werner. "Infections in laboratory animals: Importance and control". The Welfare of Laboratory Animals. Springer, Dordrecht, 2007. 23-35. **4.** Veterinary clinical parasitology / Anne M. Zajac, Gary A. Conboy. - Blackwell Publishing, 2011. - 8th ed. - 368 p. **5.** Veterinary parasitology / M.A. Taylor, R.L. Coop, R.L. Wall//Blackwell Publishing. - Carlton, 2015. - 4th ed. - in 1029 **6.** Directory from differentiation of activators інвазійних illnesses / Ponomar C I., Goncharenko V. P, Soloveva L. M; for редакторшей C I. The sexton. - K: Agrarian formation, 2010. - 237 with. **7.** Infectious diseases of laboratory animals. / Sidorchuk, Alexander Andreevich; Glushkov, Anatoly Andreevich. 2009.128 with. **8. Laboratory diagnostics in clinic of small pets / Uillard M, Tvedten Г, Tornvald Г; under the editorship of д.б. н. V.V.Makarova. - M: Open Company "the AQUARIUM the BEECH", - 2004. - 432 with.** **9. Laboratory methods of researches in biology, animal industries and veterinary medicine: the Directory / V.V.Vlezlo, R.S.Fedoruk, I.Б. Ратич, etc.; for редакторшу. V.V.Vlezla. - Lvov: Сполом, 2012. - 764 with.** **10.** Small pets of Illness and treatment. / Peter K. Berghof. - M; Из-во:Аквариум, 2006. - 224 with. **11.** N.V.laboratory's new garden animals and technics of biological experiment: the Uchebno-methodical grant for students of biological faculty of day and correspondence branches (a preparation direction: "Biology"; field of knowledge: "Natural sciences"). - Zaporozhye: ЗНУ, 2011. - 85 with. **12.** About protection of animals against cruel treatment. The law of Ukraine №3447 - IV. Sheets Supreme For the sake of Ukraine (ВВР). - 2006. - № 27, 230 with.
Teaching language	The Ukrainian

The discipline structure behind kinds to occupy

Discipline	A Lectures	B Seminars	C The independent	D The practical	E The Nekliniche sky	FX The clinical	
Illnesses of the laboratory Animals	4	4	34	8	10	0	Parasitology 60 year (2 credits)
	4	2	16	8	0	0	Эпизоотология 30 year (1 credit)
	4	2	16	4	2	2	Therapy 30 year (1 credit)
	4	2	16	4	2	2	Obstetrics 30 year (1 credit)
	4	2	16	4	4		Surgery 30 year (1 credit)
	4	2	16	2		6	Пат.анатомия 30 year (1 credit)
As a whole, year	**24**	**14**	**114**	**34**	**14**	**10**	**210**
Date of last updating of the program			8/28/2020 p				

Name of the university: Bila Tserkva National Agrarian University

Name of the faculty: Faculty of Veterinary Medicine	
Subject	**DISEASES OF EXOTIC ANIMALS AND WILDLIFE**
Teachers	Mykhailo Rublenko, doctor habilitated, DVM (guarantor), Mykola Ilnitsky doctor habilitated, DVM, Serhiy Rublenko doctor habilitated, DVM, Volodymyr Andriyets PhD, DVM, Andriy Yaremchuk PhD, DVM
Forms of study: Lectures / practical **Volume of study loading: EKTS credits - 1 (30 hours)** **Weekly loading: 2 hours.** **Student attendance: required**	
Course and semester in which the discipline is planned to be studied	6th year, 11-12 semester
Prerequisites for studying the discipline	Animal anatomy; Cytology, histology, embryology; Animal physiology; Pathological physiology; Veterinary microbiology; Clinical diagnosis and diagnostic imaging, pharmacology and pharmacotherapy.
Methods of knowledge control	Modular control, test, exam
Learning outcomes and competencies	The result of the study is the acquisition by students of basic knowledge about the main species of wild animals and exotic fauna, characteristics of modern approaches to housing conditions, bioethical approaches and biosafety, features of anatomy and physiology and biomechanical processes in animals of different species, prevention and treatment of surgical diseases in different areas body, modern principles of anesthesiological support and anesthesiological monitoring. Acquisition of practical skills in performing various surgical manipulations, osteosynthesis, soft tissue operations, endoscopic examination, based on the principles and procedures of bioethics and biosafety, asepsis and antiseptics.
Description of the discipline	
The base of the discipline	Classrooms, Museum of Surgical Pathology and Laboratory of the Department. Interdepartmental clinics and farms of the research farm of the university, farms of agricultural enterprises.
Topics of classroom lessons	**Lecture topics:** 1. Topographic anatomy of different species of animals (features of surgical interventions and operative accesses in different anatomical and topographic areas) 2. Anesthesiological support of surgical interventions in animals of different species (local and general anesthesia, infusion therapy and resuscitation) 3. 3. Prevention of injuries under stress in wild and exotic animals. Use of welfare principles for disease prevention and reduction of injuries (analysis of detention conditions, types of injuries and ways to prevent them)

	Topics of practical classes: 1. Soft tissue surgery (practical development of topographic anatomy and surgery of small mammals, birds, reptiles and wildlife) 2. Diagnosis, treatment and prevention of bone and joint pathology (small mammals, birds, reptiles and wildlife) 3. Anesthesia, resuscitation and monitoring of anesthetized animals (small mammals, birds, reptiles and wildlife) 4. Surgical methods of treatment of pathology of the genitourinary system (small mammals, birds, reptiles and wildlife)
Language of teaching	Ukrainian

The structure of the discipline by type of occupation

A Lectures	B Seminars	C Self-education	D Laboratory	E non-clinical with animals	F Clinical with animals	G other	H total
4	2	16	-	5	3		30

Date of the last modification of the program	18.06.2020 p.

Name of the university: Bila Tserkva National Agrarian University	
Name of the faculty: Faculty of Veterinary Medicine	
Subject	**DERMATOLOGY**
Teachers	Serhiy Rublenko, doctor habilitated, DVM (guarantor); Vladimir Shaganenko, PhD, DVM, Taras Tsarenko, PhD, DVM
Forms of study: Lectures / practical **Volume of study loading: ECTS-3 credits (90 hours);** **Weekly loading: 8 hours** **Student attendance: required**	
Course and semester in which the discipline is planned to be studied	6 year, 11 semester
Prerequisites for studying the discipline	“ Animal Anatomy ”,“ Cytology, Histology, Embryology ”,“ Animal Physiology ”,“ Pathological Physiology ”,“ Veterinary Microbiology ”,“ Propaedeutics and Diagnostic Imaging ”,“ Pharmacology and Pharmacotherapy ”,“ Anesthesiology and Operative Surgery ”,“ General Surgery ”, special surgery ”,“ Parasitology and invasive diseases ”,“ Epizootology and infectious diseases ” ”
Methods of knowledge control	Exam

Learning outcomes and competencies	The result of studying the discipline is the acquisition by students of knowledge about the pathogenesis and diagnostic algorithms of skin diseases Ability and ability to make decisions on diagnostic and therapeutic procedures in animals of different species with skin syndrome
Description of the discipline	
The base of the discipline	Classrooms, laboratory of the Department of Parasitology, interdepartmental clinic of FVM BNAU, public and private clinics of small animals
Topics of classroom lessons	**Lecture topics:** - Infectious diseases with dermatological syndrome - Parasitic diseases with dermatological syndrome - Local and general pharmacotherapy in dermatology – - Pustular diseases of the skin and its appendages
	Topics of practical and self-education classes: - Methods of diagnosis of skin diseases (clinical, microscopy of scraped skin, algorithms of laboratory tests - hematological, hormonal, bacteriological) - Protocols for the diagnosis and treatment of acarodermatoses - Protocols for diagnosis and treatment of metabolic skin diseases - Protocols for diagnosis and treatment of skin lesions by bacteria and fungi - Protocols for the diagnosis and treatment of autoimmune skin diseases –- Protocols for the diagnosis and treatment of pustular diseases of the skin and its appendages
Literature recommended:	9. Патерсон С. Кожные болезни кошек. – М.: Аквариум ЛТД, 2002– 168 с. 10. Ниманд Х.Г., Сутер П.Ф. Болезни собак, Пер с немецкого. М.: Аквариум. – 2008. – 800 с. 11. Hnilica, Keith A., and Adam P. Patterson. Small Animal Dermatology-E-Book: A Color Atlas and Therapeutic Guide. Elsevier Health Sciences, 2016. 12. Pascoe, Reginald R., and Derek C. Knottenbelt. Manual of equine dermatology. WB Saunders, 1999.
Language of instruction	Ukrainian

The structure of the discipline by type of occupation

Subject	A	B	C	D	E	F	G	H
Dermatology	14		58		10	8		90 (3 credits)

Date of the last modification of the program	28.08.2019 p.

Name of the university: Bila Tserkva National Agrarian University
Name of the faculty: Faculty of Veterinary Medicine

Subject	**CLINICAL ONCOLOGY**
Teachers	Mykhailo Rublenko, doctor habilitated, DVM (guarantor); Mykola Utechenko PhD, DVM
Forms of study: Lectures / practical **Volume of study loading: EKTS credits - 3 (90 hours);** **Weekly loading:** **Student attendance: required**	
Course and semester in which the discipline is planned to be studied	6th year, 11 semester
Prerequisites for studying the discipline	"Animal Anatomy", "Cytology, Histology, Embryology", "Animal Physiology", "Pathological Physiology", "Anesthesiology and Operative Surgery", "Veterinary Microbiology", "Propaedeutics and Diagnostic Imaging", "Pharmacology and Pharmacotherapy" and special surgery ","Pathological anatomy and necropsy "
Methods of knowledge control	Exam
Learning outcomes and competencies	Students must know and understand the molecular-biological and histomorphological mechanisms of different types of neoplastic processes, their classification characteristics Have clinical and pathomorphological and visual diagnostic algorithms and methods of oncosurgery, chemotherapy and radiation therapy with adequate anesthesia for tumors in animals
Description of the discipline	
The base of the discipline	Classrooms, Museum of Surgical Pathology and Phantom Class, Department Laboratory, Necropsy Hall, Interdepartmental Clinics, Public and Private Clinics for Companion Animals
Topics of classroom lessons	Lecture topics: -Molecular-biological and histopatomorphological mechanisms of neoplastic processes - Clinical stages and classification of TNM - Principles of anesthesia, surgery, chemotherapy and radiation therapy in cancer patients - Cytological and histological diagnosis of tumors
	Topics of practical and self-education classes: - Methods of tumor biology, their cyto- and histological examination - Diagnostic criteria for paraneoplastic syndromes and tumor imaging - Diagnostic criteria for cancer of various organs and systems in companion animals, horses, laboratory and exotic animals - Treatment of tumors of the mammary glands, genitourinary system and soft tissues
Recommended Books:	**13.** Анестезія та добробут тварин. Карін Портьє (VetAgro Sup), Рубленко С.В., Андрієць В.Г., Рубленко М.В., Ільніцький М.Г., Власенко В.М. – БілаЦерква. – 2019.54 с.

	14. Оптимізація хірургічного лікування неоплазій у дрібних домашніх тварин та попередження їх метастазування: науково-методичний посібник / Д.Д. Білий, М.В. Рубленко. – Дніпро, 2017. –32 с. 15. Уайт Р.А. Онкологические заболевания мелких домашних животных. / М.Дж. Брели, Д.Е. Босток, Р.Денис и др.. ; Под ред.. Р.А. Уайта // Пер. с англ. – М. : Аквариум, 2003. – 352 с.
Language of instruction	Ukrainian

The structure of the discipline by type of occupation

Предмет	A	B	C	D	E	F	G	H
Clinical oncology	14	4	48		12	12		90 (3 credits)

Date of the last modification of the program	28.09.2019.

Name of the university: Bila Tserkva National Agrarian University	
Name of the faculty: Faculty of Veterinary Medicine	
Subject	**HORSE ORTHOPEDICS**
Teachers	Alexander Emelianenko, PhD, DVM
Forms of study: Lectures / practical **Volume of study loading: EKTS credits - 3 (90 hours);** **Weekly loading:** **Student attendance: required**	
Course and semester in which the discipline is planned to be studied	6 year, 11 semester
Prerequisites for studying the discipline	“ Animal Anatomy ”,“ Cytology, Histology, Embryology ”,“ Animal Physiology ”,“ Pathological Physiology ”,“ Anesthesiology and Operative Surgery ”,“ Propaedeutics and Diagnostic Imaging ”,“ Pharmacology and Pharmacotherapy ”,“ General and Special Surgery of Large Animals ”
Methods of knowledge control	test
Learning outcomes and competencies	**Students should know:** - pathogenesis and changes in the biomechanics of the extremities by their pathology, mechanisms of inflammatory and regenerative processes in articular cartilage and tendons **Be able:** - to form diagnostic algorithms for diseases of the extremities using clinical and visual research methods, to perform functional and orthopedic cleaning of hooves in horses, to have the basics of shoeing horses and conducting conduction anesthesia and typical operations on the hoof

Description of the discipline	
The base of the discipline	Classrooms, Museum of Surgical Pathology and Laboratory of the Department, interdepartmental clinics and horse farms of the educational and research economy of the university, public and private
Topics of classroom lessons	Lecture topics: Anatomotopographic data of the axial and peripheral skeleton of horses. The influence of the horse's constitution on the hooves. Defects of the thoracic and pelvic limbs and their effect on the hooves of a walking horse. Diagnostic methods Features of anesthesia for orthopedic manipulations in horses. Preparing the horse for anesthesia. Use of tranquilizers for pharmacological concern with phenothiazine derivatives, alpha 2 agonists, benzodiazepines and butyrophenol derivatives. Local anesthesia, general inhalation and non-inhalation anesthesia. The most common schemes for anesthesia of horses Diseases of joints and muscles. Diagnosis and treatment of acute and chronic inflammation of the joints. Dislocations of joints Diseases of tendons and tendon sheaths. Tendon diseases in working and sport horses. Physiotherapeutic and surgical methods of treatment. Surgical methods of treating contracture. Deformities of hooves in horses. Types and methods of elimination. Hoof diseases. Diseases of crumb cartilage. Aseptic and purulent subdermatitis. Inflammation of the shuttle block (podotrochleitis) - diagnosis and treatment. Topics of practical and independent classes: Introduction. Safety precautions. Features of fixation of horses in orthopedic pathology. Clinical and functional diagnostic methods (conduction anesthesia, diagnostic punctures of joints, algorithm for diagnosing lameness in horses, assessment of limb staging and its effect on the shape of the hoof). Instrumental diagnostic methods (ultrasound, radiography, thermography) General methods of treatment and prevention. Antiseptic dressings for limb wounds and skin lesions. Muscle and joint diseases. Aseptic and purulent arthritis (arthroscopy, injection of drugs into the joints, dislocation of the patella - diagnosis and surgical treatment, methods of diagnosis and treatment of spar). Tendon diseases (clinical and ultrasonographic examination of the tendons of the superficial, deep and interosseous muscles of the flexors of the finger, tenotomy of the tendons of the flexors of the finger, application of cooling and warming compresses, injections of reparative and anti-inflammatory drugs, tendon diseases).

	□ Diseases of the musculoskeletal system (exostoses, bursitis, fractures of the finger bones, inflammation of the heel and hoof cartilage, conservative and surgical methods). □ Basics of clearing hooves in horses. Circumcision of overgrown hooves, correction of the wall and sole of the hoof □ Diseases of the hooves (necrosis of the tendon of the deep flexor digitorum. Surgical access to the hoof cartilage and methods of their resection. Removal of the anterior wall of the hoof behind the horn column). □ Basics of shoeing horses. Horseshoe making (standard and orthopedic), horse shoeing.
Literature recommended	1. Stashak TS: Adams Lameness in Horses 5th Ed., Lippincott Williams and Wilkins 2001, pp.1008 2. Pollitt CC: Color Atlas of the Horse´s Foot, Mosby, 2000, 3. M. W. Ross, S. J. Dyson: Diagnosis and Management of Lamenness. Elsevier Sunders. 2011 4. Д.В. Сарбаш Ортопедія коней. Посібник / Сарбаш Д.В., Рубленко М.В., Кантемир О.В. та ін.. Харків: ХДЗВА, 2018. – 194 с.
Language of instruction	Ukrainian

The structure of the discipline by type of occupation

Предмет	A	B	C	D	E	F	G	H
Traumatology and orthopedics of dogs and cats	12	2	54		14	8		90 (3 credits)

Date of the last modification of the program	28.08.2019 p.

Name of the university: Bila Tserkva National Agrarian University	
Name of the faculty: Faculty of Veterinary Medicine	
Subject	**NEUROLOGY OF SMALL ANIMALS**
Teachers	**Mykhailo Rublenko, doctor habilitated, DVM (guarantor); Vladimir Golovakha, DVM**
Forms of study: Lectures / practical **Volume of study loadштп: ECTS credits - 3 (90 hours);** **Weekly loadштп: 8 hours** **Student attendance: required**	
Course and semester in which the discipline is planned to be studied	6 year, 12 semester
Prerequisites for studying the discipline	Animal Anatomy", "Cytology, Histology, Embryology", "Animal Physiology", "Pathological Physiology", "Veterinary Microbiology", "Propaedeutics and Diagnostic Imaging", "Pharmacology and Pharmacotherapy", "Anesthesiology and Operative Surgery", and special surgery "," Medicine of internal diseases of animals "

Methods of knowledge control	Test
Learning outcomes and competencies	The result of studying the discipline is the acquisition by students of knowledge about the pathogenesis and diagnostic algorithms of neurological syndromes in animals Ability and possibility to make decisions about diagnostic algorithms and treatment procedures in animals with neurological syndromes
Description of the discipline	
The base of the discipline	Classrooms, interdepartmental clinic of FVM BNAU, public and private clinics of small animals
Topics of classroom classes	Lecture topics: Metabolic diseases with neurological syndromes - Injuries and tumors accompanied by neurological syndromes - Central and peripheral vestibular disorders - Paresis and paralysis, ataxia with injuries of the spine and spinal cord Topics of practical and independent classes: - Scheme and methods of neurological research - Special neurological examinations (reflex, sensitive and painful reactions) and interpretation of diagnostic results - Differential diagnosis of hormonal and metabolic neurological syndromes (Glycogen accumulation disease, mucopolysaccharidosis, hypo- and hypercalcemia, hypo- and hyperkalemia, Cushing's syndrome, uremic encephalopathy, hepatocephalopathy) - Diagnosis and treatment of lesions of the cranial nerves - Differential diagnosis of pain in the neck and back - Differential diagnosis of acute and chronic paresis of the extremities
	- Metabolic diseases with neurological syndromes
Literature recommended:	16. Крисман Ш., Мариани К., Платт С., Клемонс Р. Неврология собак и кошек. Пер с англ. М.: Аквариум Принт, 2016. – 290 с. 17. Ниманд Х.Г., Сутер П.Ф. Болезни собак, Пер с немецкого. М.: Аквариум. – 2008. – 800 с.
Language of instruction	Ukrainian

The structure of the discipline by type of occupation

Subject	A	B	C	D	E	F	G	H
Neurology of small animals	12		54	4	10	10		90 (3 credits)

Date of the last modification of the program	28.08.2019 p.

Name of the university: Bila Tserkva National Agrarian University
Name of the faculty: Faculty of Veterinary Medicine

Subject	**OPHTHALMOLOGY**
Teachers	Mykhailo Rublenko, doctor habilitated, DVM (guarantor); Volodymyr Andriyets, PhD, DVM
Forms of study: Lectures / practical **Volume of study loadштп: ECTS-3 credits (90 hours);** **Weekly loadштп: 8 hours** **Student attendance: required**	
Course and semester in which the discipline is planned to be studied	6 year, 12 semester
Prerequisites for studying the discipline	“ Animal Anatomy ”,“ Cytology, Histology, Embryology ”,“ Animal Physiology ”,“ Pathological Physiology ”,“ Veterinary Microbiology ”,“ Propaedeutics and Diagnostic Imaging ”,“ Pharmacology and Pharmacotherapy ”,“ Anesthesiology and Operative Surgery ”,“ General Surgery ”, special surgery ”
Methods of knowledge control	Exam
Learning outcomes and competencies	The result of studying the discipline is the acquisition by students of knowledge about the pathogenesis and diagnostic algorithms of eye diseases in animals of different species Ability and ability to make decisions on conducting diagnostic procedures for eye pathologies, their surgical and pharmacotherapeutic treatment with the provision of adequate anesthesia in animals of different species
Description of the discipline	
The base of the discipline	Classrooms, laboratory of the department, small animal clinics, ophthalmology office
Topics of classroom classes	**Lecture topics:** - Features of anatomy and physiology of eyes, their inspection, local and general anesthesia in ophthalmology - Clinical pharmacotherapy and basic surgical methods in veterinary ophthalmology: - The most common eye diseases in horses - The most common eye diseases in dogs and cats - The most common eye diseases in exotic animals – - Diseases with ophthalmic syndrome in farm animals
	Topics of practical classes - Basic diagnostic methods in animal ophthalmology (ophthalmological examination protocol, neurological, tonometry of intraocular pressure, biomicroscopy, ophthalmoscopy, Schirmer test, gonioscopy, fluorescein test) - Anesthesiological support and surgical ophthalmological instruments - Diagnostic protocols and treatment of diseases of the cornea, conjunctiva and eyelids - Diagnostic protocols and treatment of cataracts, glaucoma and diseases of the vascular membrane of the eye – - Examination of the fundus and retinal disease

Literature recommended:	18. Риис Р.К. Офтальмология мелких домашних животных. Пер. с англ.. – М.: ООО «Аквариум - Принт» 2006. – 280 с. 19. Фитерстоун Х., Холт Э. Офтальмология собак и кошек. Основные принципы диагностики на примере клинических случав. Пер. с англ. – М.: Издательство Аквариум, 2018 – 208 с.
Language of instruction	Ukrainian

The structure of the discipline by type of occupation

Subject	A	B	C	D	E	F	G	H
Traumatology and orthopedics of dogs and cats	12		54		12	12		90 (3 credits)

Date of the last modification of the program	28.08.2019 p.

c. *Animal Production*

Name of the university: Bila Tserkva National Agrarian University	
Name of the faculty: Faculty of Biotechnology	
Name of discipline	**ANIMAL HYGIENE**
Teachers	Yuriy Balatsky, PhD, DVM; Lesya Bondarenko, PhD, DVM;
Form of study: Lectures/practical **The amount of training load: ECTS** credits – 4 (120 h.); **Lessons per week:** 0,5 lectures, 2 practical **Student presence:** required	
Course and semester in which the discipline is planned to be studied	Course 2, semester 4
Prerequisites for studying the discipline	«Inorganic and analytical chemistry», «Animal anatomy», «Animal physiology»,
Methods of knowledge control	Test
Learning outcomes and competencies	**Learning outcomes defined by the standard of higher education of Ukraine for specialty 211 «Veterinary Medicine»:** PH6, PH7, PH8, PH9, PH10. Students must know and competently use the terminology of hygienic parameters in veterinary medicine, make decisions on the choice of effective methods of treatment and prevention of animal diseases, taking into account the optimal conditions of detention. Develop quarantine and rehabilitation measures for the prevention and treatment of diseases of various etiologies, taking into account the provision of appropriate microclimate parameters in industrial premises. Formulate conclusions on the effectiveness of selected methods and means of keeping,

	feeding and treatment of animals, prevention of infectious and non-communicable diseases, as well as production and technological processes in enterprises for keeping, exploitation of animals of different classes and species. Monitor the causes of the spread of diseases of various etiologies and biological pollution of livestock waste, as well as materials and veterinary products. Develop sanitary and hygienic measures aimed at protecting the population from diseases common to animals and humans. To offer and use expedient innovative methods and approaches for the decision of the problem situations concerning optimization of conditions of keeping of animals. Have specialized software to ensure optimal microclimate parameters in livestock facilities.
Description of disciplines	
The base of the discipline	Auditoriums, research laboratories of BNAU interdepartmental clinics and farms of educational and research economy of the university, farms of agricultural enterprises
Topics of classes	1. Introduction to the discipline, the purpose of studying the discipline. Concepts and terms of animal hygiene. 2. Physical properties of the air environment. 3. Hygiene of animal care. 4. Hygiene of animal transportation. 5. Hygiene of cattle. 6. Hygiene of pigs. 7. Hygiene of sheep. 8. Hygiene of sheep.
Recommended literature:	1. Demchuk M.V., Black M.V., Vysokos M.P. Animal hygiene. Kharkiv.- Espada, 2006. - 424 p. 2. Demchuk M.V., Black M.V., Vysokos M.P. and other. Animal hygiene. Workshop. - K .: Agricultural Education. - 1994. - 196 p. 3. Interpreter of concepts and terms in veterinary sanitation and hygiene [Textbook. manual] - / D.A. Zasekin, N.I. Kosyanchuk, M.D. Kucheruk, V.V. Solomon,. - K: Ukrtechinform Publishing House - 2015. –269 p. 4. Veterinary hygiene and sanitation (questions and answers) D.A. Zasekin, N.I. Kosyanchuk, V.V. Solomon,. M.D. Kucheruk, - K: Publishing House PE "Direct Line" - 2014. -208 p. 5. Sanitary norms for livestock and processing enterprises of Ukraine [Textbook. manual] /, D.A. Zasekin, V.M. Polyakovsky. V.V. Solomon - K: Publishing House "Center for Educational Literature". - 2015. - 400 p.
Language of instruction	Ukrainian

Structure of discipline by occupation

A lectures	B seminars	C self-assessment	D laboratory and desktop work	E non-clinical animals, models	F clinical with animals	G other	H together
16	-	56	48	-	-	-	120

Date of the last modification of the program	28.08.2020 p.

Name of the university: Bila Tserkva National Agrarian University	
Name of the faculty: Faculty of Veterinary Medicine	
Subject	**BIOTECHNOLOGY IN VETERINARY MEDICINE**
Teachers	Lyubov Onyschenko, Senior Lecturer, Department of Ecology and Biotechnology, Olga Shulko, Associate Professor, Department of Ecology and Biotechnology
Forms of study: Lectures / practical **Volume of study loading: ECTS-3 credits (90 hours);** **Weekly workloading: 4 semester - 4 (1/3)** **Student attendance: required**	
Course and semester in which the discipline is planned to be studied	2 M year, 4 semester
Prerequisites for studying the discipline	«Biochemistry "," Microbiology "," Molecular Biology "," Cell and Genetic Engineering "," Veterinary Virology "," Genetics "," Immunology "," Animal Feeding ".
Methods of knowledge control	test
Learning outcomes and competencies	Students must know and be able to: **Knowledge:** - current state of biotechnology; - enzymology, creation of recombinant DNA; - ways of processing waste of the national economy to ensure the ecological well-being of the environment; - methods of assessing the environmental impact of various industries on the environment; - basic concepts and terminology of this discipline. **Skill:** - methods of calculating the parameters of bioconversion, manure biomass to biogas; - calculate the parameters of anaerobic fermentation of manure biomass and biomass of algae to obtain biogas as an alternative carrier, especially in a deep economic and environmental crisis; - to introduce waste-free technologies to ensure the ecological well-being of the environment; - use of immobilized enzymes in veterinary medicine. - technology of growing spirulina for use in animal feed.
Description of the discipline	
The base of the discipline	Classrooms, laboratory of the department and farm of the research farm of the university,
Topics of classroom lessons	Introduction. The value of biotechnology - Organic and inorganic polymeric carriers - Physical and chemical methods of immobilization

	- Industrial biotechnology based on the use of immobilized enzymes in the food industry - Biotechnology for biofuel production by anaerobic fermentation - Biotechnology of vermiculture - Scientific bases of rational management and use of environment. - Classification of organic and inorganic polymeric carriers for enzyme immobilization. - Adsorption of urease on zeolite and study the activity of immobilized and free enzyme - Immobilization of glucoamylase and study of the activity of immobilized and free enzymes. - Study of the properties of glucoamylase. - Preservation of enzymatic activity of various forms of enzyme under the action of denaturing factors - heavy metal ions. - Study of the effect on the activity of free and immobilized enzyme glucoamylase denaturing factor - reaction (pH) medium. - Immobilization of protosubtilin and comparison of the activity of free and immobilized enzyme. - Study of the resistance of protosubtilin (preservation of enzymatic activity) to the action of denaturing factor - heavy metal ions. - Study of the effect on the activity of free and immobilized enzyme protosubtilin denaturing factor - reaction (pH) medium. Effect of protosubtilin on the activity of free and immobilized enzyme glucoamylase. ELIBRARY.RU. Study of preservation of activity of free and immobilized glucoamylase enzyme at complex action on enzyme of ions of heavy metals and acidic environment. ELIBRARY.RU. Study of preservation of activity of free and immobilized enzyme protosubtilin at complex action on enzyme of ions of heavy metals and acidic environment. - Biomethanogenesis and its stages - Negative impact of waste on the environment. - The latest methods of water purification.
recommended literature:	1. Біотехнологія: Підручник /В.Г.Герасименко, М.О.Герасименко, М.І.Цвіліховський, та ін.; За. аг.Ред. В.Г. Герасименко. – К.: Фірма «ІНКОС», 2006. – 647с. 2. Герасименко В.Г. Біотехнологічний словник, К., 1991. 3. Герасименко В.Г., Герасименко М.О. та ін. Біотехнологія у тваринництві / Гене-тика сільськогосподарських тварин, К., 1996, с. 188-233. 4. Кудлай І., Луценко М. Технологія переробки відходів молочної ферми з використанням біогазової установки /Техніка і технології АПК. – 2010. – 310. –С. 10-13. 5. Погорелый Л.В., Луценко М.М. Биотехнологическиесистемы в животноводстве. – К., 1992. – С.268-292.
Language of instruction	Ukrainian

The structure of the discipline by type of occupation

A lectures	B seminars	C Self-education	D laboratory	E non-clinical with animals, models	F Clinical with animal models	G other	H total
14	42	34		-	-		90

Date of the last modification of the program	28.08.2019 p.

d. *Food Safety and Quality, Veterinary Public Health and One Health Concept*

Name of the university: Bila Tserkva National Agrarian University	
Name of the faculty: Faculty of Veterinary Medicine	
Subject	**BIOSAFETY AND BIOSECURITY**
Teachers	Taras Tsarenko, PhD, DVM, Oleksandra Novik, PhD, DVM
Forms of study: Lectures / practical / seminars **Volume of study loading: ECTS credits -3 (90 hours);** **Weekly loading: 1/2** **Student attendance: required**	
Course and semester in which the discipline is planned to be studied	6 year, 12 semester
Prerequisites for studying the discipline	«Admission to the specialty "," Veterinary Epidemiology "," Professional Ethics with Fundamentals of Biosafety and Bioethics "," Veterinary Microbiology and Immunology "," Epizootology, Infectious Diseases and Preventive Medicine "," Organization of Veterinary Service and Public Health "," Veterinary legislation and forensic medicine "," Herd health management "," Ruminant diseases "," Pig diseases "," Poultry diseases ".
Methods of knowledge control	test
Learning outcomes and competencies	Students must know and be able to: **Knowledge**: - know the basics of biosafety and biosecurity, elements of biosafety, biosafety regulations; - know ways to ensure the appropriate level of biosafety according to the industry, methods of risk analysis. - know the requirements for biosafety for farms by species of animals and laboratories; - know the principles and ways of implementing infection control in veterinary clinics. - know the types and methods of using personal protective equipment and disinfectants

	Skill: - be able to conduct risk analysis and develop a biosafety system in the workplace; - be able to use personal protective equipment; - be able to develop and implement plans for disinfection and infection control; - - be able to develop biosecurity programs in laboratories and biological enterprises.
Description of the discipline	
The base of the discipline	Classrooms, computer classes, infirmary, laboratories, training farm.
Topics of classroom lessons	**Lectures.** Topic 1. Fundamentals of biosafety and biosecurity. Topic 2. Analysis and management of biological risks. Topic 3. Biosafety and biosecurity. Topic 4. Personal biosafety of a veterinarian. Topic 5. Biosafety and biosecurity in industrial livestock. Topic 6. Biosafety and biosecurity in veterinary clinics**.**
	Practical training: Topic 1. Fundamentals of biosafety. Elements of biosafety. Bioprotection of laboratories, biological productions. Bioterrorism. Topic 2. Analysis and management of biological risks. Ways to reduce biological risks. Topic 3. Zoonoses of productive animals, dogs and cats, exotic animals and ways of their transmission. Prevention of zoonoses. Topic 4. Seminar Topic 5. Personal biosafety of a veterinarian. Infectious control of zoonoses and animal diseases in farms and clinics of small animals. Topic 6. Laboratory biosafety and biosecurity. Biosafety levels. Control of harmful factors. Storage of chemicals and biomaterials. Biosecurity in laboratories. Topic 7. Practical use of personal protective equipment. Disinfection plan. Engineering elements of biosafety. Topic 8. Seminar. Topic 9. Biosafety in dairy farming. Topic 10. Biosafety in pig and poultry farming. Topic 11. Biosafety and infection control in veterinary clinics. Topic 12. Seminar.
Literature recommended	9. GuidelinesforVeterinaryPersonalBiosecurity /AustralianVeterinaryAssociation, 2011.– 59 p. 10. Generalbiosecurityguidelines/ AAEP, 2017 .– 15 p. 11. Biologicalsafety: principles and practices / editors, Diane O. Fleming, Debra L. Hunt.—4th. ed.642 p. 12. Bases of biosafetyfor research institutions of biologicalprofile /Y. Salyha, I. Luchka, V. Rosalovskyii.. 2017. – 218 p. 13. Управління біоризиками: Посібник з лабораторної біобезпеки, WHO, – 2006 – 37 с. 14. Голубнича В. М. Біобезпека та біозахист у біологічних лабораторіях 1-го та 2-го рівнів біобезпеки : монографія / В. М. Голубнича, М. В. Погорєлов, В. В. Корнієнко. – Суми: Сумський державний університет, 2016. – 123 с.

Language of instruction	Ukrainian

The structure of the discipline by type of occupation

Subject	A	B	C	D	E	F	G	H
Biosafety and biosecurity	**12**	**6**	**54**	**18**	-	**-**	**-**	**90 (3 credits)**

A: lectures; B: seminars; C: controlled self-study; D: laboratory and descriptive work, E: non-clinical work on animals; F: clinical work on animals; G: others (specify); H: total

Date of the last modification of the program Developed for the first time in 2020-2021 academic year.

Name of the university: Bila Tserkva National Agrarian University	
Name of the faculty: Faculty of Veterinary Medicine	
Subject	**BIOPREPARATIONS**
Teachers	Taras Tsarenko, PhD, DVM, Oleksandra Novik, PhD, DVM
Forms of study: Lectures / practical / seminars **Volume of study loading: ECTS credits -3 (90 hours);** **Weekly loading: 1/2** **Student attendance: required**	
Course and semester in which the discipline is planned to be studied	6 year, 12 semester
Prerequisites for studying the discipline	«Admission to the specialty "," Veterinary Epidemiology "," Professional Ethics with Fundamentals of Biosafety and Bioethics "," Veterinary Microbiology and Immunology "," Epizootology, Infectious Diseases and Preventive Medicine "," Organization of Veterinary Service and Public Health "," Veterinary legislation and forensic medicine "," Herd health management "," Ruminant diseases "," Pig diseases "," Poultry diseases ".
Methods of knowledge control	test
Learning outcomes and competencies	Students must know and be able to: **Knowledge:** - know the basics and history of the development of biologics; - principles of immunity and immune memory; - know the principles of creation and implementation in practice of vaccines, sera, bacteriophages and other biological products; - know the basics of creating vaccines for bacterial, viral and other infectious diseases; - to know the current state and prospects of development of the biological products industry. **Skill**: - be able to analyze the market of biologicals; - be able to create a plan for the production of biological products of different types;

	- be able to predict the effects of the use of biological products in industrial livestock and domestic animals; - - be able to develop biosecurity programs in laboratories and biological enterprises.
Description of the discipline	
The base of the discipline	Classrooms, computer classes, infirmary, laboratories, training farm.
Topics of classroom lessons	**Lectures.** Topic 1. History of the development of biologicals in medicine and veterinary medicine. Topic 2. Infectious process and prerequisites for vaccine prophylaxis. Topic 3. Immunological memory and various forms of immunity. Topic 4. Fundamentals of technology for the manufacture of vaccines and sera. Topic 5. Bacteriophages, individual vaccines and other types of biological products. Topic 6. Storage, transportation and sale of biologicals.
	Practical training: Topic 1. History of vaccination and immunotherapy. Successes of vaccine prevention at the global and national levels. Policy of international organizations on biological products (OIE, WHO, FAO) Topic 2. Infectious process. Immune response. Immunity and its types. Immune memory. Methods of immune control. Nonspecific immunoprophylaxis. Topic 3. Principles of vaccine prophylaxis. Use of vaccines in veterinary medicine. Vaccination schemes and the problem of creating long-term specific immunity. Topic 4. Seminar Topic 5. Technology of production of viral vaccines. Topic 6. Technology of production of bacterial vaccines. Topic 7. Production of hyperimmune sera. Topic 8. Manufacture of bacteriophages, individual vaccines and other types of biological products. Vaccines in oncology. Topic 9. Seminar. Topic 10. The market of biologicals. Storage, transportation and sale of biologicals. Topic 11. Creation of vaccination programs in industrial livestock and for domestic animals. Topic 12. Seminar.
Literature recommended	1. Вакцинология. /Медуницин Н.В., М.: 2004, 448 с. 2. Tizard, Ian R. *VeterinaryImmunology-E-Book*. ElsevierHealth Sciences, 2017. 3. Schultz, Ronald D. *Veterinaryvaccines and diagnostics*. 1999. Brun, Alejandro. Vaccinetechnologiesforveterinaryviraldiseases. 2016. 4. Thomas, Sunil. *VaccineDesign*. SpringerNewYork, 2016. 5. OIE. Manual of DiagnosticTests and VaccinesforTerrestrialAnimals. https://www.oie.int/standard-setting/terrestrial-manual/
Language of instruction	Ukrainian

The structure of the discipline by type of occupation

Subject	A	B	C	D	E	F	G	H
Bio preparations	12	6	54	18	-	-	-	90 (3 credits)

A: lectures; B: seminars; C: controlled self-study; D: laboratory and descriptive work, E: non-clinical work on animals; F: clinical work on animals; G: others (specify); H: total

Date of the last modification of the program	Developed for the first time in 2020-2021.