REPUBLIC OF NORTH MACEDONIA
SS. CYRIL AND METHODIUS UNIVERSITY IN SKOPJE
FACULTY OF VETERINARY MEDICINE

ELABORATE
REACREDITATION OF THE STUDY PROGRAM - VETERINARY MEDICINE

INTEGRATED FIRST AND SECOND CYCLE OF STUDIES

Institution

FACULTY OF VETERINARY MEDICINE - SKOPJE

Skopje, 2024

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	First accreditation
X	Reacreditation

1. DATA ABOUT THE HIGHER EDUCATIONAL INSTITUTION

Name of the higher educational institution

Faculty of veterinary medicine – Skopje, Ss Cyril and Methodius University in Skopje

Address

Lazar Pop Trajkov 5-7, 1000 Skopje

EMS	Identification number
4066499	6462642
Phone number	Phax
+38923240700	+389 2 3114 619
Email	Web page of the higher educational institution
contact@fvm.ukim.edu.mk	www.fvm.edu.mk

2.1 ESTABLIHMENT OF THE HIGHER EDUCATIONAL INSTITUTION – FOR THE UNIVERSITY

Name of the founder	

Name of the act of incorporation	

Number and date of the act of incorporation	

Changes in founding rights (name of the second founder and legal successors of the founder)	
Number and date of the Decision on the fulfillment of the conditions for starting work and the activity issued by the Ministry of Education and Science of the Republic of North Macedonia	
Number and date The decision on accreditation of the higher education institution issued by the Board for Accreditation and Evaluation of Higher Education of the Republic of North Macedonia.	
Number and date of the Decision on enrollment of the higher education institution in the Central Registry	

2.2 ESTABLIHMENT OF THE HIGHER EDUCATIONAL INSTITUTION – FOR THE FACULTY

Name of the founder	Parlament of the Republic of Macedonia

Title of the act of incorporation	Law for higher education

Number and date of the act of incorporation	11-1397 from 20.04.1994

Changes in founding rights (name of the second founder and legal successors of the founder)	No changes
Changes in founding rights (name of the second founder and legal successors of the founder)	No changes
Number and date of the Decision on the fulfillment of the conditions for the beginning of activitiy issued by the Ministry of Education and Science of the Republic of North Macedonia	
Number and date of the decision on accreditation of the higher education institution issued by the Board for Accreditation and Evaluation of Higher Education of the Republic of North Macedonia	
Number and date of the Decision on enrollment of the higher education institution in the Central Registry	

2.3 ESTABLISHMENT OF THE HIGHER EDUCATIONAL INSTITUTION – FOR THE IDEPENDENT VOCATIONAL SCHOOL

Name of the founder	

Title of the act of incorporation	

Number and date of the act of incorporation	

Changes in founding rights (name of the second founder and legal successors of the founder)	
Changes in founding rights	

(name of the second founder and legal successors of the founder)	
Number and date of the Decision on the fulfillment of the conditions for starting work and the activity issued by the Ministry of Education and Science of the Republic of North Macedonia	
Number and date The decision on accreditation of the higher education institution issued by the Board for Accreditation and Evaluation of Higher Education of the Republic of North Macedonia	
Number and date of the Decision on enrollment of the higher education institution in the Central Registry	

3. OWNERSHIP STRUCTURE OF THE HIGHER EDUCATION INSTITUTION

X	State		Private		Mixed

5. REPRESENTATIVE AUTHORITY OF THE HIGHER EDUCATION INSTITUTION

Name and surname, Function (Rector, Dean, Director)

Prof. Dean Jankuloski, Dean

Date and act of appointment

Descision of the Teaching Scientific Council of the Faculty of veterinary medicine – Skopje for period 2024-2027 (0202-1555/1 from 11.12.2024) and Decision of the University Senate (02-181/36 from 30.01.2024).

Phone contact	Email
02/3240-727	djankuloski@fvm.ukim.edu.mk

Official contact

Name and surname	Phone number	Email
Prof. Dean Jankuloski	02/3240-727	djankuloski@fvm.ukim.edu.mk

Date: _____ М.П

Authorized person

_____

Legal framework

	Legal basis for preparing the Elaboration
1	Law on Higher Education (Official Gazette of the Republic of Macedonia, No. 82/2018);
2	Rulebook on the standards and norms for the establishment of higher education institutions and for the performance of higher education activities ("Official Gazette of the Republic of North Macedonia" no. 245/22 and no. 4/23)
3	Rulebook on methodology, standards and procedure for accreditation of higher education institutions and for accreditation of study programs ("Official Gazette of the Republic of North Macedonia" no. 256/22)
4	Rulebook on the standards and norms for the establishment of scientific institutes and for performing scientific research activities ("Official Gazette of the Republic of North Macedonia" no. 245/22)
5	Rulebook on the content of study programs (Official Gazette of the Republic of North Macedonia, no. 79/23);
6	Guidelines for the criteria for ensuring and assessing the quality of higher education institutions and academic staff in the Republic of Macedonia (Official Gazette of the Republic of Macedonia, no. 67/13);
7	The decree on the national framework of higher education qualifications ("Official Gazette of the Republic of Moldova" no. 154/2010),
8	National framework of occupations ("Official Gazette of the Republic of Macedonia" no. 178/15)
9	Rulebook on the content and form of the diploma, instructions for the preparation of supplements to the diploma and other public documents ("Official Gazette of the Republic of Macedonia" no. 84/09)
10	Law on the Military Academy ("Official Gazette of the Republic of Macedonia" No. 83/2009)
11	Rulebook on the closer criteria and competence of the boards for cooperation and trust with the public ("Official Gazette of the Republic of Macedonia" no. 148/13)
12	Rulebook on the method and conditions for organizing practical teaching for students ("Official Gazette of the Republic of Macedonia" no. 71/09 and 120/10)
13	Rulebook on the conditions to be fulfilled by the distinguished expert from the practice of the relevant area for the performance of clinical teaching ("Official Gazette of the Republic of Macedonia" no. 71/09 and 120/10)
14	Law on medical studies and continuous professional development of doctors of medicine ("Official Gazette of the Republic of Moldova" no. 16/13)
15	Law on recognition of professional qualifications ("Official Gazette of the Republic of Macedonia" no. 171/10)
16	Rulebook on the method and procedure for managing the database for higher education activity ("Official Gazette of the Republic of Macedonia" no. 65/13)
17	Law on scientific research activity ("Official Gazette of the Republic of Macedonia" no. 46/08, 103/08, 24/11 and 80/12)
18	Law on higher education institutions for the education of teaching staff in pre-school education, primary and secondary education ("Official Gazette of the Republic of Macedonia" no. 10/15)
19	Statute of the higher education institution
20	The decision on accreditation of the higher education institution issued by the Board for Accreditation and Evaluation of Higher Education of the Republic of Macedonia.
21	The decision on accreditation of a study program issued by the Board for Accreditation of Higher Education of the Republic of Macedonia.
22	The decision to start work issued by the Ministry of Education and Science of the Republic of Macedonia, that is, by AKVO.

1. Map of the higher education institution (University, faculty, i.e. higher vocational school)

1.1. Map of the higher education institution

Name of the higher education institution	In Macedonian language	Универзитет „Св. Кирил и Методиј“ во Скопје Факултет за ветеринарна медицина – Скопје Република Северна Македонија
	In English	Ss. Cyril and Methodius University in Skopje Faculty of veterinary medicine-Skopje Republic of North Macedonia
	In the language in which the teaching is conducted	Ss. Cyril and Methodius University in Skopje Faculty of veterinary medicine-Skopje Republic of North Macedonia
Address		St. Lazar Pop Trajkov 5-7, 1000 Skopje, RNM
Web site		www.fvm.ukim.edu.mk
Type of higher education institution (public, private, private-public)		Public higher education institution
Data on the last accreditation		Veterinary medicine first and second cycle integrated study program on English; Descision for accreditation 1409-234/3 from 10.05.2020
Field of study or artistic discipline according to the International Standard Classification of Education of UNESCO (MSCOB, ISCED) and scientific research areas (According to the International Frascati Classification of 2015) for which accreditation has been obtained		ISCED-F 2013: 08 Agriculture, forestry, fishing and veterinary medicine 84 Veterinary 0841 Veterinary medicine Scientific area: Agriculture and veterinary sciences Scientific field: 4.03 Veterinary sciences 4.03.00.01 Anatomy of animals 4.03.00.02 Biophysics 4.03.00.03 Phisiology 4.03.00.04 Histology with embriology 4.03.00.05 Microbiology with immunology 4.03.00.06 Molecular biology 4.03.00.07 Pahomorphology with Forensic veterinary medicine 4.03.00.08 Pathophysiology 4.03.00.09 Diseases in ruminants 4.03.00.10 Diseases in small animals and non-ruminants 4.03.00.11 Diseases in poultry 4.03.00.12 Diseases in fish, bees and games 4.03.00.13 Pharmacology and toxicology 4.03.00.14 Prasitic diseases 4.03.00.15 Infectious disease with epidemiology 4.03.00.16 Radiobiology 4.03.00.17 Surgery, orthopedics and ophthalmology

	4.03.00.18 Radiology and physical therapy 4.03.00.19 Reproduction in animals 4.03.00.20 Therapy and health care in animals 4.03.00.21 Animal hygiene with environmental protection 4.03.00.22 Food safety and veterinary public health 4.03.00.23 Nutrition – dietetics 4.03.00.24 Veterinary legislative 4.03.00.25 History and ethics, deontology in veterinary medicine 4.03.00.26 Chemistry in veterinary medicine 4.03.00.27 Animal husbandry and genetic disease in animals 4.03.00.28 Other
Data on international cooperation in the field of teaching, research and student mobility	The Faculty of Veterinary Medicine in Skopje is highly engaged in fostering international cooperation through various initiatives, particularly with other veterinary faculties and universities in the nearest region and abroad. These activities include the establishment of both formal agreements with foreign institutions and participation in well-known international exchange programs, such as ERASMUS+ and CEEPUS. The faculty is an active member of the VetNEST network since 2007, which enables the exchange of knowledge and collaboration in veterinary education. VetNEST members meet annually to discuss developments like organizational changes, progress in evaluation by the European Association of Establishments for Veterinary Education (EAEVE)**,** and new academic programs. Through this network, the faculty also coordinates student and faculty mobility, enabling a diverse exchange of expertise and experiences. The faculty's commitment to international standards is evident in its continuous involvement with EAEVE since 1996, attending their annual meetings and receiving expert evaluations. A consultative visit by an EAEVE team in 2016 and preliminary visitation in 2024 demonstrate that the faculty's has ongoing efforts to meet the highest standards of veterinary education. The Faculty of Veterinary Medicine in Skopje offers its students numerous opportunities to participate in summer schools as part of its international cooperation and mobility programs. These summer schools provide valuable hands-on learning experiences and opportunities to expand their academic and professional horizons. These summer school programs are part of the Faculty's broader strategy to provide its students with a wide range of international experiences, enhancing their education and preparing them for careers in veterinary medicine with a global perspective. Participation in such programs not only helps students build practical skills but also fosters valuable professional networks with

	peers and experts from other institutions. The faculty also benefits from the Visiting Professors, offering lectures by prominent academics from eminent universities, according to the Shanghai list**.** This program enhances the international perspective of the faculty and provides students and faculty members with access to cutting-edge research and expertise. Through these efforts, the Faculty of Veterinary Medicine in Skopje not only strengthens its own academic standing but also contributes to global veterinary education and research, ensuring its students and faculty are well-prepared for international careers in veterinary medicine. The list of international research projects (in the past 5 years) is published on the website of the faculty, at the following link: https://fvm.ukim.edu.mk/nauka/proekti/tekovni-proekti/.
Data on the space for realization of educational and research activities	FVMS is located at the entrance of Skopje from the eastern side (Gazi Baba municipality), at Lazar Pop Trajkov 5-7 address, which provides easy access for all employees, students and clients from the city and the surrounding area. FVMS carries out all its educational, research, and applicative activities within its own premises, with some exceptions for specific courses and practical training. All Faculty activities (educational, research and applicative) are performed in Faculty's own premises, with excepsion of teaching in course Biophysics, which is performed at the Institute of Physics within Faculty of Natural Sciences and Mathematics, and Sport and health, as well as clinical/field practice which are performed in veterinary ambulances, livestock farms and food industry enterprises. The Faculty facilities include: 5 buildings with total area of approximately 3.421 m^2; 3 lecture halls (64, 54 and 30 seats, respectively); central building with Dean's and Vice deans Office, teaching premises, staff office and laboratories for food examination; administration offices, student service office, Saculty Student Assembly, Computer room/student library; Diagnostic laboratories for animal diseases, Radiology cabinet and staff office; Teaching premises, Animal necropsy room (pathology), Microscopic room, Laboratory for hematology and clinical biochemistry; University veterinary hospital; Animal housing boxes; Anatomy dissecting room and anatomy museum, staff offices, teaching premises and Laboratory for in vitro fertilization and TSE laboratory. The faculty has also signed cooperation agreements with veterinary ambulances, clinics, wholesale pharmacies, and farms**,** where practical training and independent practice are conducted outside the faculty's premises. A list of all

	agreements is available on the faculty's website (https://fvm.ukim.edu.mk/studii/klinicka-terenska-praktika/)
Data on the equipment for the performance of teaching and research activities	For the implementation of theoretical and practical teaching, the Faculty of veterinary medicine uses all the equipment availlable in the laboratories and University veterinary hospital. Desktop computers, LCD projectors, screens, computers with internet access, animal models. All equipement is listed in table 11.1.
Total number of students for whom previous accreditation have been obtained	15
Number of students (first time enrolled)	1 (2022/2023), 3 (2023/2024) and 8 (2024/2025)
Number of persons in teaching-scientific, scientific and teaching professions	Full professors - 21 Associate professor -13 Assistant professor – 3 Scientific researchers - 6
Number of people in associate positions	4
Teacher:student ratio (number of students per teacher)	Total enrolled in study year 2024/2025 Integrated first and second cycle of study: 148 Second cycle of study: 5 students Third cycle of studies: 19 students Total area of faculty teaching fascilites is 3.241 m^2 (given in details in table 10). Total number of students for whom accreditation of the study programs has been obtained for the entire FVMS: 157 • Integrated first and second cycle of studies Veterinary medicine – 50 students • Integrated first and second cycle of studies Veterinary medicine, English program - 15 students • Second cycle of studies Food safety and quality – 20 students • Third cycle of studies Veterimnary medicine – 51 • Third cycle of studies Food safety -21
Space ratio: students (m2 per student)	20,64 m^2
Internal mechanisms for ensuring and controlling the quality of studies	The Teaching-Scientific Council (TSC) is the expert, professional council and governing body of the Faculty of Medicine (FVMS). The TSC consists of permanent members, all of whom are academic staff holding the titles of assistant professor**,** associate professor, or full professor. Currently, there are 37 members in total. In addition to these permanent members, the TSC also includes student representatives**.** The number of student representatives is up to 10-15% of the total membership of the TSC, which amounts to 4 students**.** These student representatives are elected by the Faculty Student Assambley (FSA of FVMS) and serve a 2-year mandate**,** with the possibility of one re-election**.** Their inclusion ensures that the student perspective

	is considered in the decision-making process. The TSC appoints and dismisses the Dean and Vice-deans, adopts the strategy of the faculty, amendments for the Statute, all general legal acts, rulebooks, study programmes, financial issues, staff-title elections, international issues, the Dean's annual report, self-evaluation report of the Faculty, implementing regulations of the FVMS and accepts the curricula and plans for implementation. Self-evaluation committee composed of teachers and student representatives according to the Law of higher education controls the quality of the teaching programs. Student evaluation with anonymous student surveys is carried out at the end of each semester for every teacher and every subject according to the study program. Additional, Quality control body was established in 2024.
Frequency of the self-evaluation process (every year, every two years, every three years) and date of the last self-evaluation	Previously, self-evaluation was conducted on every three years; however, in accordance with recent University regulations, it is now performed annually, starting from this year. Every three year: Self evaluation report 2020/2021-2022/2023 Self evaluation report 2023/2024 https://fvm.ukim.edu.mk/fakultet/samoevaulacija/
Data on the last conducted external evaluation of the institution	The last external evaluation of the University Ss. Cyril and Methodius was conducted in April 2011, as a follow-up evaluation for the period from 2006/2007 to 2009/2010. A subsequent external evaluation took place in October 2014, covering the period from 2010/2011 to 2012/2013, carried out by an expert team appointed by the European University Association (EUA).
Other data that the Institution wants to state as an argument for its success	A quality system has been implemented at the Faculty of Veterinary Medicine in accordance with the requirements of the MKS ISO/IEC 17025:2018 standard. In November 2024, the faculty underwent a preliminary visit by EAEVE experts**.** This visit serves as a precursor to the faculty's upcoming external expert evaluation by EAEVE in 2027**.** This process is a crucial step for the faculty, as it aims to achieve or maintain the high standards of veterinary education recognized by EAEVE, ensuring the quality and international relevance of its academic programs.

1.2. Map of a higher education institution - for interdisciplinary studies - participants in the study program

Name of the higher education institution	In Macedonian language	
	In English	

	In the language in which the teaching is conducted	
Address		
Internet site		
Type of higher education institution (public, private, private-public)		
Data on the last accreditation		
Field of study or artistic discipline according to the International Standard Classification of Education of UNESCO (MSCOB, ISCED) and scientific research areas (According to the International Frascati Classification of 2015) for which accreditation has been obtained		
Data on international cooperation in the field of teaching, research and student mobility		
Data on the space intended for the performance of teaching and research activities		
Data on the equipment for the performance of teaching and research activities		
Total number of students for whom previous accreditations have been obtained		
Number of students (first time enrolled)		
Number of persons in teaching-scientific, scientific and teaching professions		
Number of people in associate positions		
Teacher:student ratio (number of students per teacher)		
Space ratio: students (m2 per student)		
Internal mechanisms for ensuring and controlling the quality of studies		
Frequency of the self-evaluation process (every year, every two years, every three years) and date of the last self-evaluation		
Data on the last conducted external evaluation of the institution		
Other data that the Institution wants to state as an argument for the success of a higher education institution participating in the realization of the study program		

2. DATA ON THE UNIT ORGANIZER OF THE STUDY PROGRAM

1		Unit of a higher education institution (unit of the University)	In Macedonian language	Универзитет „Св. Кирил и Методиј“ во Скопје Факултет за ветеринарна медицина-Скопје Република Северна Македонија
			In English	Ss Cyril and Methodius University in Skopje Faculty of veterinary medicine-Skopje Republic of North Macedonia
			In the language in which the teaching is conducted	Ss Cyril and Methodius University in Skopje Faculty of veterinary medicine-Skopje Republic of North Macedonia
2		Address		St Lazar Pop Trajkov 5-7, 1000 Skopje, RNM
3		Study and scientific research area in which the unit is accredited according to the International Standard Classification of Education of UNESCO (MSCOB, ISCED).		ISCED-F 2013: 08 Agriculture, forestry, fishing and veterinary medicine 84 Veterinary 0841 Veterinary medicine
4		Scientific research area for which the unit is accredited according to Frascati's classification		Scientific area: Agriculture and veterinary sciences Scientific field: 4.03 Veterinary sciences 4.03.00.01 Anatomy of animals 4.03.00.02 Biophysics 4.03.00.03 Phisiology 4.03.00.04 Histology with embriology 4.03.00.05 Microbiology with immunology 4.03.00.06 Molecular biology 4.03.00.07 Pahomorphology with Forensic veterinary medicine 4.03.00.08 Pathophysiology 4.03.00.09 Diseases in ruminants 4.03.00.10 Diseases in small animals and non-ruminants 4.03.00.11 Diseases in poultry 4.03.00.12 Diseases in fish, bees and games 4.03.00.13 Pharmacology and toxicology 4.03.00.14 Prasitic diseases 4.03.00.15 Infectious disease with epidemiology 4.03.00.16 Radiobiology 4.03.00.17 Surgery, orthopedics and ophthalmology 4.03.00.18 Radiology and physical therapy 4.03.00.19 Reproduction in animals 4.03.00.20 Therapy and health care in animals 4.03.00.21 Animal hygiene with environmental protection

			4.03.00.22 Food safety and veterinary public health 4.03.00.23 Nutrition – dietetics 4.03.00.24 Veterinary legislative 4.03.00.25 History and ethics, deontology in veterinary medicine 4.03.00.26 Chemistry in veterinary medicine 4.03.00.27 Animal husbandry and genetic disease in animals 4.03.00.28 Other
5		Type of studies (academic or professional) developed at the unit	Academic studies (title gained after the graduation – Doctor of veterinary medicine)
6		Study programs within the unit	• Integrated first and second cycle of studies Veterinary medicine, 6 years 360 ECTS; • Integrated first and second cycle of studies Veterinary medicine on English, 5.5 years 330 ECTS; • Second cycle professional studies - Food Safety and Quality; • Third cycle of studies – Veterinary medicine • Third cycle of studies – Food safety
7		Cycle of education (first or second cycle of studies, or integrated first and second cycle of studies and third cycle)	Integrated first and second cycle of studies Second cycle and Third cycle of studies
8		Total number of students for whom previous accreditations have been obtained	15
9		Number of students (first time enrolled)	1 (2022/2023), 3 (2023/2024) and 8 (2024/2025)
10		Number of persons in teaching-scientific, scientific and teaching professions	Full professors - 21 Associate professor -13 Assistant professor – 3 Scientific researchers - 6
11		Number of people in associate positions	4
12		Teacher-student ratio (number of students per teacher)	2.86

Table 2.1. List of persons selected in teaching-scientific positions in a full-time employment relationship at a unit (faculty) that requires (re)accreditation of the study program (Article 61 of the Law on Higher Education, "Official Gazette of the Republic of Macedonia", no. 82 /2018)

	Name and surname of the academic staff	Teaching scientific title
1	Velimir Stojkovski	PhD, Full professor
2	Toni Dovenski	DVM, PhD, Full professor
3	Vlatko Ilieski	DVM, PhD, Full professor

4	Vladimir Petkov	DVM, PhD, Full professor
5	Plamen Trojachanec	DVM, PhD, Full professor
6	Zehra Hajrulai Musliu	PhD, Full professor
7	Romel Velev	DVM, PhD, Full professor
8	Dine Mitrov	DVM, PhD, Full professor
9	Igor Ulchar	DVM, PhD, Full professor
10	Blagica Sekovska	PhD, Full professor
11	Pavle Sekulovski	DVM, PhD, Full professor
12	Slavcho Mrenoshki	DVM, PhD, Full professor
13	Jovana Stefanovska	DVM, PhD, Full professor
14	Florina Popovska Perchinikj	PhD, Full professor
15	Vasilka Poposka Trenevska	PhD, Full professor
16	Lazo Pendovski	DVM, PhD, Full professor
17	Dean Jankuloski	DVM, PhD, Full professor
18	Trpe Ristoski	DVM, PhD, Full professor
19	Aleksandar Dodovski	DVM, PhD, Full professor
20	Elena Davidkovska	PhD, Full professor
21	Irena Celeska	DVM, PhD, Full professor
22	Kiril Krstevski	DVM, PhD, Associate professor
23	Igor Dzadzovski	DVM, PhD, Associate professor
24	Iskra Cvetkovikj	DVM, PhD, Associate professor
25	Radmila Chrcheva Nikolovska	DVM, PhD, Associate professor
26	Branko Atanasov	DVM, PhD, Associate professor
27	Ksenija Ilievska	DVM, PhD, Associate professor
28	Nikola Adamov	DVM, PhD, Associate professor
29	Sandra Mojsova	DVM, PhD, Associate professor
30	Mirko Prodanov	DVM, PhD, Associate professor
31	Aleksandar Cvetkovikj	DVM, PhD, Associate professor
32	Branko Angjelovski	DVM, PhD, Associate professor
33	Ivica Gjurovski	DVM, PhD, Associate professor
34	Elena Atanaskova Petrov	DVM, PhD, Associate professor
35	Martin Nikolovski	DVM, PhD, Assistant professor
36	Risto Uzunov	DVM, PhD, Assistant professor
37	Miroslav Kjosevski	DVM, PhD, Assistant professor
38	Ivana Shikoska	DVM, Assistant
39	Jane Vlahov	DVM, Assistant
40	Boris Dimitrievski	DVM, Assistant
41	Ivan Matevski	DVM, Assistant

- Additionally, the professional associates that are already employed at FVMS (in accordance with the Faculty Statute), are participating in the work of the departments as supportive staff. The Teaching and Scientific Council decided for the involvement of this supporting staff accroding to the needs of the study program and number of enrolled students.
- Furthermore, in adherence to the Law on Higher Education, demonstrators are also involved as assistants in the teaching process, providing additional support to the faculty.

3. GENERAL INFORMATION ABOUT THE STUDY PROGRAM

1	Name of the study program	In Macedonian language	Универзитет „Св. Кирил и Методиј“ во Скопје Факултет за ветеринарна медицина-Скопје Република Северна Макеодонија
		In English	Ss. Cyril and Methodius University in Skopje Faculty of veterinary medicine-Skopje Republic of North Macedonia
		In the language in which the teaching is conducted	Ss. Cyril and Methodius University in Skopje Faculty of veterinary medicine-Skopje Republic of North Macedonia
2	Fields of study or artistic disciplines of first, second and third level according to the International Standard Classification of Education of UNESCO (MSCOB, ISCED). For interdisciplinary study programs, the corresponding fields of study or artistic disciplines of first, second and third level are indicated	A wider area	ISCED-F 2013: 08 Agriculture, forestry, fishing and veterinary medicine
		Narrower area	84 Veterinary
		Detailed area	0841 Veterinary medicine
3	Frascati's classification (for determining appellation)	Scientific area	Scientific area: Agriculture and veterinary sciences
		Scientific field	Scientific field: 4.03 Veterinary sciences
		Scientific, professional or artistic field	4.03.00.01 Anatomy of animals 4.03.00.02 Biophysics 4.03.00.03 Phisiology 4.03.00.04 Histology with rofessor 4.03.00.05 Microbiology with immunology 4.03.00.06 Molecular biology 4.03.00.07 Pahomorphology with Forensic veterinary medicine 4.03.00.08 Pathophysiology 4.03.00.09 Diseases in ruminants 4.03.00.10 Diseases in small animals and non-ruminants 4.03.00.11 Diseases in poultry

				4.03.00.12 Diseases in fish, bees and games 4.03.00.13 Pharmacology and toxicology 4.03.00.14 Prasitic diseases 4.03.00.15 Infectious disease with epidemiology 4.03.00.16 Radiobiology 4.03.00.17 Surgery, orthopedics and ophthalmology 4.03.00.18 Radiology and physical therapy 4.03.00.19 Reproduction in animals 4.03.00.20 Therapy and health care in animals 4.03.00.21 Animal hygiene with environmental protection 4.03.00.22 Food safety and veterinary public health 4.03.00.23 Nutrition – dietetics 4.03.00.24 Veterinary legislative 4.03.00.25 History and ethics, deontology in veterinary medicine 4.03.00.26 Chemistry in veterinary medicine 4.03.00.27 Animal husbandry and genetic disease in animals 4.03.00.28 Other
4		National Classification of Occupations	Main groups	2. Experts and scientists
			Subgroups	225. Veterinarians
			Subgroups	2250. Veterinarians
			Single groups	2250.01 Veterinarian 2250.02 Veterinarian for animal reproduction 2250.03 Doctor of veterinary medicine 2250.04 Veterinary surgeon 2250.05 Veterinarian for companion animal 2250.06 Veterinarian for animal health eterinarian 2250.07 Veterinary specialist 2250.08 Veterinary researcher 2250.09 Independent veterinary researcher 2250.10 Veterinary inspector 2250.11 Veterinary advisor
5		Type of studies (academic or professional)		Academic studies
6		Cycle of education (first or second cycle of studies, or integrated first and second cycle of studies)		Integrated first and second cycle of studies
7		Load of the study program expressed in ECTS credits and if preparatory courses are provided		360 ECTS
8		Value in ECTS credits of the final work of professional and academic undergraduate and postgraduate studies		360 ECTS

9		Duration of studies (in years and semesters of the duration of the study program)	Total duration of studies 6 years/12 semesters
10		Data on whether the study program is being submitted for accreditation or for the extension of previous accreditation	Reaccreditation/extension of previous accredittion
11		Method of financing the proposed study program, and for private and private-public non-profit higher education and scientific institutions, proof of provided quality financial guarantee for the referee program	As a organizational unit of Ss Cyril and Methodius University in Skopje, Faculty for veterinary medicine – Skopje receives government funding based on standard criteria for financing public higher institution. All other expenditures for provision of goods, services and investments for the quality education, teaching process, scientific/research activities, professional services and students' needs are covered through the income generated by Faculty's applicative activities. The study program is financed through self-financing/co-financing by the candidates. The decision on the tuition fee for foreign students enrolled in the integrated first and second cycle of study at FVMS is made by the Teaching-Scientific Council, based on which the call for enrollment of new students is announced. The tuition fee for foreign students enrolled in the integrated first and second cycle study program in Veterinary Medicine is 4.000 euros.
12		Degree or level of qualification required for enrollment in studies according to the National Qualifications Framework	Compulsory four-year high school education, state matriculation
13		Conditions for enrolling in the study program especially for full-time, part-time and foreign students, which include subjects relevant to the study program from the state matriculation or entrance exam with clear, unambiguous and accurate content of the exam, its duration, performance and evaluation	Conditions and enrolling procedure are in compliance with Law on Higher Education, Rulebooks on conditions, criteria, enrolling and study rules on first and second cycle university studies at the Ss Cyril and Methodius University in Skopje, and also with more precisely predicted criteria in Public Competition announced by Ss Cyril and Methodius University in Skopje. The basic conditions are completed high school or professional school in duration of 4 years, and passed subjects from the state exame
14		A degree or level of qualification obtained by completing studies according to the National	VIIA

		Qualifications Framework		
15		Academic or professional title that is acquired after completing the study program	In Macedonian language	Доктор по ветеринарна медицина
			In English	Doctor of veterinary medicine
			In the language in which the teaching is conducted	Doctor of veterinary medicine
16		Place of teaching		Ss Cyril and Methodius University, Faculty of veterinary medicine-Skopje
17		Number of students planned to enroll in the study program		50
18		Language in which the teaching will be conducted		English
19		Possibility of teaching in a foreign language (windows of mobility – teaching subjects that can be taught in English)		Yes
20.1		Method of study (full-time, part-time study)		Full time
20.2		Rules, opportunities and conditions for part-time study of the study program		/
21		Information on continuing education including study and scientific fields for study programs from the second and third cycle of academic or professional studies for which completion of the corresponding study program from the first cycle ensures adequate passability		Completion of the study program grants graduates the opportunity to continue further academic and professional development. Specifically, upon completing the integrated first and second cycle of studies (undergraduate), students are eligible to enroll on the second cycle specialized or third cycle of studies (PhD).
22		Academic year in which the implementation of the study program will begin		2025/2026
23		Deadlines for completing the planned activities of the study program		The deadline for completion of the planned activities of the study program are double of the total duration of the study, within a specific timeframe according to the study rules.
24		Number and date of Decision (if submitted for re-accreditation)	of the last accreditation by the Accreditation Board	10.05.2019
			to start working on the study program from MES/ACVO	14.02.2020

3. Purpose and justification for introducing the study program

The European Union Directives 2005/36/EC and 2013/55/EU regulate the recognition of professional qualifications across EU member states, including the profession of veterinary surgeon. These directives aim to ensure that professionals who wish to practice in the EU are able to do so without unnecessary barriers, while maintaining high standards of education and practice. The profession of veterinary surgeon is classified as a regulated profession under EU law. This means that each member state must ensure that individuals wishing to practice as a veterinary surgeon meet certain educational and professional standards.

According to Article 38 of Directive 2005/36/EC, the studies required to become a veterinary surgeon must last at least 5 years.

These studies cannot be split into separate first and second cycles (as is common in many university systems), but must be organized as integrated studies, meaning that the first and second cycles (undergraduate and graduate) are combined into one continuous program. Upon completion of these integrated studies, students are eligible to enter the third cycle of doctoral studies in veterinary medicine.

Directive 2005/36/EC and its amended version, Directive 2013/55/EU, include detailed requirements regarding the subjects and content of veterinary studies. This ensures that veterinary students receive comprehensive training.

The curriculum includes both theoretical and practical teaching, which is required to be carried out at the faculty level (in a higher education institution). These subjects are specified in Annex V.4 of Directive 2005/36/EC and Annex V.4.1 of Directive 2013/55/EU. They cover a wide range of topics, from basic sciences (such as biology and chemistry) to more specialized subjects like animal health, surgery, pharmacology, and ethics. The direct entry into doctoral studies after completing veterinary studies reflects the high level of specialization and expertise required for veterinary practice.n The directive ensures that all veterinary graduates meet a set of harmonized standards, which makes it easier for professionals to practice in different EU member states without having to undergo additional training or requalification processes.

In summary, the directives aim to create a common framework for veterinary education and professional practice across the EU, ensuring both the mobility of professionals and the quality of veterinary care throughout member states. The requirement for integrated studies that combine undergraduate and graduate education into a five-year program helps to maintain a high level of expertise before a professional can enter doctoral studies and practice as a veterinary surgeon.The integrated studies in veterinary medicine at the Faculty of Veterinary Medicine are prepared according to the European Union directives relating to education in the field of biotechnical sciences, the Bologna Declaration, the Law on Higher Education (Official Gazette No. 82 of 08.05.2018), the Statute of the University "Ss. Cyril and Methodius" (University Gazette, No. 425 of 28.06.2019), the Statute of the Faculty of Veterinary Medicine – Skopje (University Gazette, No. 460 of 18.10.2019), the Rulebook on the conditions, criteria and rules for enrollment and study in the first and second cycle of university studies at "Ss Cyril and Methodius" (University Gazette No. 417 of 29.01.2019) and the Decision on the Rules of Study in Integrated Studies of the First and Second Cycle (Undergraduate Studies) and in the second cycle (postgraduate studies) at the University of Ss. Cyril and Methodius in Skopje – Faculty of Veterinary Medicine – Skopje (University Gazette, No. 554 of 26.07.2021).

All subjects listed in Annex V.4 of EU Directive 2005/36 are included in this study program as mandatory, and it has also been taken into account not to exceed the total student workload during one academic year, which is also as regulated by Article 153, paragraph 1 of the Law on Higher Education.

This proposal for accreditation of the study program of the first and second cycle integrated studies in Veterinary Medicine at the Faculty of Veterinary Medicine is submitted based on the provisions of the Law on Higher Education, which provide for re-accreditation or accreditation of study programs every five years. When preparing this project proposal, the recommendations of the pre-visitation team from the European Association of Establishments for Veterinary Education (EAEVE, a European accreditation body in the field of veterinary medicine), which made a consultative visit to the Faculty, were taken into account. Of Veterinary Medicine in Skopje in 2016, regarding the aspirations of the FVMS to obtain international accreditation of the study program, as well as the Standard Operating Procedures (SOPs) adopted at the EAEVE General Assembly in Zurich (Switzerland) in 2022.

The proposal is submitted in accordance with the Law on Higher Education, which mandates the re-accreditation or accreditation of study programs every five years. This ensures that the educational programs remain relevant, up-to-date, and meet national and international standards. The proposal takes into account recommendations from a consultative visitation and preliminary visitation team from the European Association of Establishments for Veterinary Education (EAEVE). This bodies, conducted a

consultative visit to the Faculty of Veterinary Medicine in Skopje in 2016, and another preliminary visitation in 2024. The goal was to assess the Faculty's preparedness for international accreditation of its study program. The proposal also incorporates the SOPs adopted by the EAEVE General Assembly in Zurich in 2022. These SOPs outline the expected quality standards for veterinary education institutions and provide a framework for their accreditation. The proposed changes in the study program focus on enhancing the practical component of veterinary education and introducing new subject areas:
The proposal outlines the addition of new subject programs that were previously not part of the curriculum. These new programs are likely designed to address emerging trends in veterinary medicine, new scientific knowledge, and technological advances in animal care. The introduction of these subjects aligns with the evolving needs of the profession and ensures that the program remains relevant and competitive at an international level.
The overall goal of the proposal is to enhance the quality of the veterinary medicine program and to achieve international accreditation. By addressing practical training needs and introducing updated subject areas, the Faculty aims to ensure that its graduates meet the rigorous standards set by EAEVE and can practice as veterinarians across the EU and beyond.
The Faculty's emphasis on increasing practical teaching hours and updating the curriculum is directly in line with EAEVE's accreditation criteria. This shows the Faculty's commitment to continuously improving its educational offerings and ensuring that students are prepared for the demands of the veterinary profession, both in terms of knowledge and hands-on skills.

4. Compliance of the study program with the needs of society for the given personnel profile

The Veterinary Medicine study program is designed to align with global trends in both education and scientific research, while also harmonizing with veterinary programs at the European level. Recognizing that veterinary medicine is a regulated profession, the curriculum ensures that students acquire the necessary skills, competencies, and standards to meet the demands of society.
Veterinarians often collaborate with veterinary technicians and hospital staff to deliver comprehensive care. The role of animals in human life has been significant for millennia, and in recent decades, their importance has grown. In Europe, the mission of the veterinary profession, as defined by the European Federation of Veterinarians (FVE), encompasses several key areas: animal health, animal welfare, public health, and environmental protection.
The Veterinary Medicine study program adheres to the mandatory subjects outlined in Annex V.4 of EU Directive 2005/36, ensuring compliance with the necessary educational standards. It also considers the total student workload during each academic year, in accordance with Article 153, paragraph 1 of the Law on Higher Education.
Veterinary medicine today plays a critical role in public health, particularly in controlling the safety of food products of animal origin and applying the "One Health" concept. This approach highlights the importance of joint efforts between medical and veterinary services to address zoonotic diseases—diseases transmitted from animals to humans. In essence, by safeguarding animal health, veterinarians also contribute to protecting human health. The motto of the European Federation of Veterinarians (FVE), "Veterinarians care for animals and people," reflects this interconnection.
Veterinary medicine is no longer a male-dominated profession, and veterinarians today can find employment in various fields. These include veterinary clinics, hospitals, stations, and laboratories (microbiological, food analysis, and clinical), as well as in veterinary education and research (secondary schools, faculties, and research institutes). Veterinary professionals can also work in regulatory bodies like veterinary inspections, the Veterinary Administration, and other regulatory veterinary agencies.
Beyond these roles, the study program aims to provide graduates with the competencies necessary for employment in industries related to animal production, including cattle, sheep, goats, pigs, poultry, and

horses. Other relevant sectors include the hunting industry, animal feed production, the pharmaceutical industry, and veterinary drug wholesalers.

The program focuses on equipping students with the right combination of theoretical knowledge and practical experience across all branches of veterinary medicine, preparing them for effective management of veterinary businesses and organizations.

5. Level in the National Framework of Higher Education Qualifications, study program Veterinary medicine, University Ss Cyril and Methodius in Skopje, in accordance with the Decree on the National Framework of Higher Education Qualifications

<table>
<tr><td colspan="2">Level of the national frame qulifiqations</td><td>Higher education</td><td>Level in the European framework of higher education qualifications</td></tr>
<tr><td rowspan="2">VII</td><td rowspan="2">VIIA</td><td>Integrated first and second cycle of studies</td><td rowspan="2">VII</td></tr>
<tr><td>6 year, 12 semesters, 360 ECTS</td></tr>
</table>

6. Study program objectives and learning outcomes that indicate successful completion of the integrated first and second cycle of studies (360 ECTS) and are awarded to a person who meets the following qualification descriptors:

6.a. General descriptors of qualifications for the integrated first and second cycle of studies with 360 ECTS, for the study program submitted for reaccreditation, in accordance with the Decree on the national framework of higher education qualifications

Type of descriptors	**Description**
Knowledge and understanding	The student demonstrates a profound knowledge and understanding of veterinary medicine, effectively employing relevant methods to address complex cases. They exhibit originality in the development and application of autonomous ideas for research purposes. The student shows proficiency in utilizing advanced and enhanced knowledge, displaying a high level of professional competence across the entire field of veterinary medicine. Additionally, their expertise spans various disciplines within veterinary medicine, grounded in the most authoritative international research in related fields.
Application of knowledge and understanding	The student demonstrates the ability to critically and independently solve cases in a creative and original manner, either within the field of veterinary medicine or through a multidisciplinary approach.

Assessment ability	The student demonstrates the ability to synthesize and integrate knowledge acquired not only during their studies but also through professional experience. They are capable of addressing complex issues from a professional perspective, making informed assessments even when data is incomplete or limited, while maintaining awareness of personal, social, and ethical responsibilities in the application and evaluation of their knowledge. Additionally, the student shows the ability to assess and select scientific theories, methodologies, tools, and professional skills in veterinary medicine, and to develop novel, science-based analyses and solutions.
Communication skills	The student consistently demonstrates the ability to effectively communicate conclusions, suggestions and opinions, presenting them with clear, well-reasoned arguments. The student shows a strong sense of responsibility not only for their individual outcomes but also for the collective success of the team. Student demonstates ability for initiative, actively initiating and executing activities that fall within their professional competencies, contributing positively to their work environment and professional development.
Study skills	Demonstrates the ability to recognize the personal need for continuous expansion of already acquired knowledge and the ability to act independently in acquiring new knowledge and skills within a social framework. Demonstrates the ability to take responsibility for further professional development and improvement within veterinary medicine and beyond.

6**.b. Specific descriptors of qualifications for the integrated first and second cycle of studies with 360 ECTS, sixt year of studies, for the study program submitted for (re)accreditation, in accordance with the Decree on the national framework of higher education qualifications**	
Type of descriptors	**Description**
Knowledge and understanding	• Demonstrates extended knowledge and understanding of scientific disciplines, which are basis of veterinary doctors' activities. • Demonstrates knowledge about research methods, which are in use in basic and applied research in all aspects of veterinary science. • Demonstrates extended knowledge about structure and function of animals and their breeding. • Demonstrates extended knowledge about ethiology, pathogenesis, clinical signs, diagnostics and treatment of common animal diseases and disorders, which occur in common domestic animal species in EU. • Demonstrates knowledge about legislative related with animal welfare (including transport) and notifiable, reportable and zoonotic diseases. • Demonstrates knowledge about drug legislative and manuals for responsible use of drugs adopted by EU member. • Demonstrates knowledge of the principles of disease prevention and promotion of health and animal welfare. • Demonstrates knowledge of public health issues, including zoonoses

Application of knowledge and understanding	• Demonstrates ability for getting correct and relevant anamnesis for particular animal or group of animals, as well as for their environment. • Demonstrates ability for safe and human handling with an animal, and to conduct others for use of such technics. • Demonstrates ability for performing complete clinical examination. • Demonstrates ability for carring out of all common domestic animal species in case of emergency and to perform basic first aid (problems which have to be copied for any species include first aid and coping bleedings, wounds, breath difficulties, eyes and ears injury, loss of consciousness, clinical trauma, burns, tissue injury, internal organ injury and cardiac arrest. First aid which has to be used includes bondaging, cleaning, extremity immobilization, reanimation procedures, and control of bleeding). • Demonsrates ability for samples collecting, storing and transporting. • Demonsatrtes ability for performing standard laboratory tests and interpretation of results not only of tests done by him-/herself, but also of those obtained from other laboratories. • Demosntrates ability for using radiographic, ultrasonic and other technic equipment which is used in diagnostics, safely and in compliance with current regulations. • Demonstrates ability for using appropriate procedures in diagnostics of notifiable, reportable and zoonotic infectious diseases. • Demonstrates ability for correct performing certification. • Demonstrates ability for accessing to relevant data sources for registrated drugs • Demonstrates ability for correct and responcible prescribing and dissoluting of drugs in compliance with relevant legislative and to ensure that drugs and garbage are safely stored or removed. • Demonstrates ability for correct use of surgical equipment sterilization principles. • Demonstrates ability for correct use of aseptical surgery principles. • Demonstrates ability for safe performing of sedation, general and local anesthesia, and pain calming and control. • Demonstrates ability for advising and application of appropriate treatment. • Demonstrates ability for performing of human euthanasia, with use of appropriate method, and simultaneously to show empathy for owner's and other persons' feelings, to maintain safety of present persons, and to give advise for correct corpse removing. • Demonstrates ability for performing general necropsy, registrating details, taking tissue samples, and their correct storing and transporting. • Demonstrates ability for performing pre- and postmortal examination of food production animals and correct identification of condition which have impact on quality and safety of animal origin products. • Demonstrates ability for obtaining and implementing of general records on health and welfare (including production records where is needed). • Demonstrates ability for creating and application of preventive and prophylactic programs related to the specied (herd health) and maintance of approved healh standards, as well as welfare and public health standars, and seeking advice and help from the colleagues if needed • Demonstrates ability for minimization of threats of contamination, crossinfection and pathogene accumulation in premises and on field.

Assessment ability	• Demonstrates ability for evaluation of evidence. • Demonstrates ability of correct interpretation of clinical finding and its linking with laboratory and diagnostic imaging tests. • Demonstrates ability for correct evaluation of the animal's nutritive status, and ability to advise the client about principles of nutritition and animal husbandry. • Demonstrates ability to recognize necessity of animal euthanasia.

Communication skills	• Demonstrates ability for efficient communication with clients, and for giving public, professional, collegial and responcible questions; for effient listening and empathic responding, and using speech appropriate for the interlocutor. • Demonstrates ability for orepearing clear case report and maintance of patient records in form appropriate for the colleagues and understandable for the publicy. • Demonstrates ability for efficient work as a member of interdisciplinary team. • Demonstrates consciousness about ethical responcibilites of the veterinary doctor relatied with patient care and client relationship, and also more general with the community related with their eventual impact on environment and society in total. • Demonstates consciousness about economical and emotional ambient where veterinary doctor works, and ability for solvent response on such factors impacts. • Demonsytrates will to use his/her professional qualities for contribution of as good as it can for veterinary medicine development with goal of improving of veterinary practice and incrasing quality of animal care, animal welfare and veterinary public health. • Demonstrates basic knowledge on organization and management of veterinary practice, including: ✓ consciousness about his/her professional obligations related with employement and health; ✓ safety legislative, and his/her position via staff and publicy. • Demonstrates knowledge about price calculation, invoice making, and importance of handling with systems of records and booking, including: ✓ computer records and reports; ✓ ability for efficient use of informatics technology and for commincation and data sharing, collecting, handling and analysing; ✓ importance for harmonization with established standars and practice policy; • Demonstrates ability to act professionaly related with professional and legal responcibilies, and to understand and apply ethical codices of related regulatory bodies. • Demonstrtes ability to cope with ambiguities and to adapt him-/herself on changes. • Demonstrates consciousness about personal limits, and demonstrates consciousness when and from whom to ask professional advice, help and support. Demonstrates general knowledge of veterinary practice
Study skills	• Demonstrates the ability to recognize the personal need for continuous improvement of their existing knowledge and skills, as well as the capacity for independent learning to acquire new knowledge and expertise within society.

7. Determined ratio between compulsory and elective subjects, with a list of compulsory subjects, a list of elective subjects and a defined way of choosing the subjects.

STRUCTURE OF THE STUDY PROGRAM

Table 7.1. Schedule of subjects by semesters and years of study for academic studies (AS) and professional studies (SS)

Serial number	Subject code	Name of the subject	Semester	Weekly fund of classes		ECTS
				L	P	
FIRST YEAR						
		Compulsory subject				
1	VM2023-111	Animal Anatomy 1	I	4	5	9.0
2	VM2023-112	Cell Biology	I	2	3	5.5
3	VM2023-113	Biophysics	I	1	2	4.0
4	VM2023-114	Chemistry	I	2	3	5.0
5	VM2023-115	Biostatistics	I	1	2	2.5
6	VM2023-116	Histology and Embryology 1	I	2	3	4.0
7	VM2023-121	Animal Anatomy 2	II	4	5	8.0
8	VM2023-122	Hystology and Embryology 2	II	2	3	5.0
9	VM2023-123	Biochemistry	II	4	4	8.0
10	VM2023-124	Nutritious, Medicinal and Poisonous plants	II	1	2	3.0
11	VM2023-125	Sport and Health	II	0	2	2.0
12	VM2023-126	Rural Economics	II	1	1	2.0
13	*VME2023*	*Elective subject*	II	0	1	2.0
Total hours (lectures/practicals) and ECTS for the year				**24**	**36**	**60**

Serial number	Subject code	Name of the subject	Semester	Weekly fund of classes		ECTS
				L	P	
SECOND YEAR						
1.	VM2023-211	Animal Phisiology 1	III	4	4	7.0
2.	VM2023-212	Domestic Animal General Nutrition	III	2	2	5.0
3.	VM2023-213	Animal Husbandry 1	III	2	2	4.0
4.	VM2023-214	Animal Hygiene 1	III	2	2	4.0
5.	VM2023-215	Microbiology 1	III	2	2	6.0
6.	*VME2023*	*Elective subject*	III	1	1	2.0
7.	*VME2023*	*Elective subject*	III	1	1	2.0
8.	VM2023-221	Animal Phisiology 2	IV	4	4	7.0
9.	VM2023-222	Specific Nutrition of Domestic	IV	2	3	4.0

		Animals				
10.	VM2023-223	Animal Husbandry 2	IV	2	2	4.0
11.	VM2023-224	Animal Hygiene 2	IV	2	2	4.0
12.	VM2023-225	Microbiology 2	IV	2	2	4.0
13.	VM2023-226	Veterinary Immunology	IV	1	2	3.0
14.	*VME2023*	*Elective subject*	IV	1	1	2.0
15.	*VME2023*	*Elective subject*	IV	1	1	2.0
Total hours (lectures/practicals) and ECTS for the year				**29**	**31**	**60**

Serial number	Subject code	Name of the subject	Semester	Weekly fund of classes		ECTS
				L	P	
THIRD YEAR						
1.	VM2023-311	Pathophysiology 1	V	2	3	4.5
2.	VM2023-312	General Pharmacology	V	2	2	4.0
3.	VM2023-313	Basic Pathology	V	2	3	5.5
4.	VM2023-314	Parasitology and Parasitic Diseases 1	V	2	2	4.0
5.	VM2023-315	Animal Clinical Anatomy	V	0	3	3.0
6.	VM2023-316	Visual Diagnostic Methods and Physical Therapy	V	2	2	3.0
7.	VM2023-317	Clinical Biochemistry	V	1	1	2.0
8.	*VME2023*	*Elective subject*	V	1	1	2.0
9.	*VME2023*	*Elective subject*	V	1	1	2.0
10.	VM2023-321	Pathophysiology 2	VI	2	2	4.0
11.	VM2023-322	Special Pharmacology	VI	3	2	5.0
12.	VM2023-323	Special Veterinary Pathology	VI	4	4	7.0
13.	VM2023-324	Parasitology and Parasitic Diseases 2	VI	2	3	4.5
14..	VM2023-325	Animal Behaviour and Welfare	VI	2	2	3.5
15.	VM2023-326	Clinical and Laboratory Diagnostics in Companion Animals and Equines	VI	1	2	3.0
16.	VM2023-327	Clinical and Laboratory Diagnostics in Farm Animals	VI	1	2	3.0
Total hours (lectures/practicals) and ECTS for the year				28	35	**60**

Serial number	Subject code	Name of the subject	Semester	Weekly fund of classes		ECTS
				L	P	
FOURTH YEAR						
1.	VM2023-411	Internal Diseases of Small Animals and Equids 1	VII	2	4	6.0
2.	VM2023-412	Reproduction 1	VII	3	4	7.0
3.	VM2023-413	Anesthesia and Intensive Care	VII	1	1	3.0
4.	VM2023-414	General Surgery	VII	2	2	4.0
5.	VM2023-415	Internal Diseases in Farm Animals 1	VII	3	3	6.0
6.	VM2023-416	Communication in Veterinary Practice	VII	1	1	2.0
7.	*VME2023*	*Elective subject*	VII	1	1	2.0
8.	VM2023-421	Internal Diseases of Small Animals and Equids 2	VIII	2	4	5.0
9.	VM2023-422	Reproduction 2	VIII	4	5	7.5
10.	VM2023-423	Infectious Diseases in Domestic Animals 1	VIII	2	2	4.0
11.	VM2023-424	Internal Diseases in Farm Animals 2	VIII	2	3	5.0
12.	VM2023-425	Soft Tissue Surgery	VIII	2	3	3.5
13.	VM2023-426	Swine Diseases	VIII	2	2	3.0
14.	*VME2023*	*Elective subject*	VIII	1	1	2.0
Total hours (lectures/practicals) and ECTS for the year				28	36	**60**

Serial number	Subject code	Name of the subject	Semester	Weekly fund of classes		ECTS
				L	P	
FIFTH YEAR						
1	VM2023-511	Orthopedics and Rehabilitaton	IX	2	2	3.5
2	VM2023-512	Meat Hygiene and Technology	IX	2	2	4.0
3	VM2023-513	Milk Hygiene and Technology	IX	2	2	4.0
4	VM2023-514	Fish Biology and Pathology	IX	2	2	3.5
5	VM2023-515	Infectious Diseases in Domestic Animals 2	IX	3	3	5.0
6	VM2023-516	Veterinary Epidemiology	IX	1	1	2.0
7	VM2023-517	Herd Health Management	IX	0	3	2.0

8	VM2023-518	Veterinary Administrative Procedures	IX	2	1	2.0
9	VM2023-519	Veterinary Toxicology	IX	1	1	2.0
10	*VME2023*	*Elective subject*	IX	1	1	2.0
11	VM2023-521	Meat, Fish, Eggs and Honey – Hygiene and Techonology	X	2	3	4.0
12	VM2023-522	Forensic Veterinary Medicine and Veterinary Ethics	X	3	2	5.0
13	VM2023-523	Basic management and management of veterinary practice	X	1	2	2.5
14	VM2023-524	Food Safety and Veterinary Public Health	X	2	2	4.0
15	VM2023-525	Analytical chemistry of food	X	1	1	2.0
16	VM2023-526	Wild Animal Biology and Pathology	X	1	1	2.0
17	VM2023-527	Bee Biology and Pathology	X	1	2	2.5
18	VM2023-528	Avian Diseases	X	3	3	6.5
19	VM2023-529	Ophthalmology	X	1	1	1.5
Total hours (lectures/practicals) and ECTS for the year				31	35	**60**

Serial number	Subject code	Name of the subject	Semester	Weekly fund of classes		ECTS
				L	P	
SIX YEAR						
		Compulsory subject				
1	VM2023-611	Companion Animal Clinical Practice		0	10	6.0
2	VM2023-612	Farm Animal Clinical Practice		0	10	6.0
3	VM2023-613	Food Industry Enterprise Practice		0	10	6.0
4	*VME2023*	*Elective subject*		1	1	2.0
5	*VME2023*	*Elective subject*		1	1	2.0
6	*VME2023*	*Elective subject*		1	1	2.0
7	*VME2023*	*Elective subject*		1	1	2.0
8	*VME2023*	*Elective subject*		1	1	2.0
9	*VME2023*	*Elective subject*		1	1	2.0
10	VM2023-621	Companion Animal Clinical Practice		0	8	5.0
11	VM2023-622	Farm Animal Clinical Practice		0	8	5.0
12	VM2023-623	Food Industry Enterprise Practice		0	8	5.0
13	VM2023-624			0	10	6.0
14	*VME2023*	*Elecive subject*		1	1	2.0
15	*VME2023*	*Elecive subject*		1	1	2.0

16	*VME2023*	*Elecive subject*		1	1	2.0
17	VM2023-625	Preparing and presentation of diploma work		0	5	3.0
Total hours (lectures/practicals) and ECTS for the year				9	78	**60**

Table 7.2. Elective subjects of the study program (the list includes the elective subjects of the study program and teaching subjects that are performed at another unit of the university, in accordance with Article 139 paragraph 9 of the Law on Higher Education („Official Gazette of the Republic of Macedonia“ 82/18))

Serial number	Code	Name of the subject	Semester	Weekly fund of classes		ECTS	From which unit
				Lectures	Practicals		
1	VME2023-01	Introduction to English Veterinary Terminology I	II	0	2	2.0	FVMS
2	VME2023-02	Introduction to English Veterinary Terminology II	III	0	2	2.0	FVMS
3	VME2023-03	Introduction to Veterinary Medicine	III	1	0	2.0	FVMS
4	VME2023-04	Chemistry of Natural Compounds	III	1	1	2.0	FVMS
5	VME2023-05	Exotic Animal Physiology	III	2	0	2.0	FVMS
6	VME2023-06	Bulk Feed Production	III	2	0	2.0	FVMS
7	VME2023-07	Harmful Antinutritive Compounds in Feed	III	2	0	2.0	FVMS
8	VME2023-08	Green Economics and Sustainable Development	III	0	2	2.0	FVMS
9	VME2023-09	Veterinary Vaccinology	III	1	2	2.0	FVMS
10	VME2023-10	Laboratory and Exotic Animal Anatomy and Welfare	IV	1	1	2.0	FVMS
11	VME2023-11	Feed Additives and Health Modulators	IV	2	0	2.0	FVMS
12	VME2023-12	Economics and Organization in Livestock production	IV	0	2	2.0	FVMS
13	VME2023-13	Marketing in Veterinary Practice	IV	2	2	2.0	FVMS
14	VME2023-14	Comparative Physiology	IV	2	0	2.0	FVMS
15	VME2023-15	Biochemical Ecotoxicology	IV	2	0	2.0	FVMS
16	VME2023-16	Biosecurity in Animal Husbandry and Veterinary	IV	1	1	2.0	FVMS

		Medicine					
17	VME2023-17	Precision Agriculture and Veterinary Medicine	IV	1	1	2.0	FVMS
18	VME2023-18	Ecotoxicology	IV	0	2	2.0	FVMS
19	VME2023-19	Domestic Pet Computed Topography	V	1	1	2.0	FVMS
20	VME2023-20	Veterinary Hematology	V	0	2	2.0	FVMS
21	VME2023-21	Basis of Cytological Diagnostics	V	0	2	2.0	FVMS
22	VME2023-22	Environmental Protection	V	1	0	2.0	FVMS
23	VME2023-23	Measuring Animal Behavior	VII	1	1	2.0	FVMS
24	VME2023-24	Dermatopathology	VII	2	0	2.0	FVMS
25	VME2023-25	Animal Product Supply Chain Management	VII	0	1	2.0	FVMS
26	VME2023-26	Tropical Parasitic Diseases	VII	0	2	2.0	FVMS
27	VME2023-27	Molecular Mechanisms of General Anesthesia	VII	2	0	2.0	FVMS
28	VME2023-28	Veterinary Entomology	VIII	0	2	2.0	FVMS
29	VME2023-29	Rational Application of Antimicrobial Drugs	VIII	2	0	2.0	FVMS
30	VME2023-30	Veterinary Clinical Parasitology	VIII	0	2	2.0	FVMS
31	VME2023-31	Companion Animal Anesthesia and Analgesia Techniques Under Specific Surgical Conditions	VIII	0	2	2.0	FVMS
32	VME2023-32	Surgical Skin Reconstruction Techniques	VIII	0	2	2.0	FVMS
33	VME2023-33	Veterinary Dentistry in Dogs and Cats	VIII	0	2	2.0	FVMS
34	VME2023-34	Clinical Pharmacology	IX	0	2	2.0	FVMS
35	VME2023-35	Clinical Nutrition in Dogs and Cats	IX	1	1	2.0	FVMS
36	VME2023-36	Case Studies in Veterinary Clinical Immunology	IX	0	2	2.0	FVMS
37	VME2023	Case Studies in Veterinary	IX	0	2	2.0	FVMS

	-37	Clinical Microbiology					
38	VME2023-38	Ultrasound Diagnostics of Reproduction Disorders	IX	0	2	2.0	FVMS
39	VME2023-39	Cynology	XI	1	1	2.0	FVMS
40	VME2023-40	Bacterial Resistance to Antibiotics	XI	0	2	2.0	FVMS
41	VME2023-41	Administrative Procedure in Veterinary Activities	XI	2	1	2.0	FVMS
42	VME2023-42	Poultry Production Technology Processes	XI	0	2	2.0	FVMS
43	VME2023-43	Parasitology in Public Health	XI	0	2	2.0	FVMS
44	VME2023-44	Veterinary Inspection	XI	0	1	2.0	FVMS
45	VME2023-45	Husbandry and Diseases in Non-poultry Avian Species	XI	0	2	2.0	FVMS
46	VME2023-46	Aquaculture	XI	0	2	2.0	FVMS
47	VME2023-47	Changes in Laboratory Profiles of Companion Animal Diseases	XII	1	1	2.0	FVMS
48	VME2023-48	Clinical Pathophysiology	XII	0	2	2.0	FVMS
49	VME2023-49	Parasitological Cases	XII	0	2	2.0	FVMS
50	VME2023-50	Advanced Reproductive Endocrinology	XII	0	2	2.0	FVMS
51	VME2023-51	Pet Bird Husbandry and Diseases	XII	0	2	2.0	FVMS
52	VME2023-52	Selected Techniques for Surgical Fracture Reduction	XII	0	2	2.0	FVMS
53	VME2023-53	Food Microbiology	XII	0	2	2.0	FVMS
54	VME2023-54	Chemistry of Food Quality	XII	1	1	2.0	FVMS
55	VME2023-55	Residues and Contaminants in Food	XII	1	1	2.0	FVMS
56	VME2023-56	Current Food Safety Systems	XII	0	2	2.0	FVMS
57	VME2023-57	Advanced Andrology and Cryobiology	XII	0	2	2.0	FVMS
58	VME2023-58	Wildlife Zoology	XII	0	2	2.0	FVMS
59	VME2023 59	Poisonous Plant Toxicology	XII	0	2	2.0	FVMS

60	VME202360	Oncology	XII	2	0	2.0	FVMS
Total:				**38**	**80**	**116**	

Table 7.3. Mobility windows – teaching subjects that can also be taught in English according to Article 139 paragraph 10 of the Law on Higher Education ("Official Gazette of the Republic of Macedonia" no. 82/18)

	Name of the subject	**Name of the teacher**	**Year/Semester**	**ECTS**
1.				
2.				
3.				
4.				

Table 7.4. Overview of the representation of mandatory and elective courses in the study program.

Semester	Number of compulsory subjects	Number of elective subjects	Total subjects
I	12	1	13
II	11	4	15
III	14	2	16
IV	12	2	14
V	18	1	19
VI	8	9	17
Total	75	19	94
% representation	79,79 %	20,21 %	100 %

Table 7.5. Overview of the percentage representation of compulsory courses and elective subjects

Serial number	Duration of studies (years)/ total number of ECTS of the study program	Total load expressed through ECTS		Load for elective subjects expressed through ECTS	
		A Total number of ECTS of the study program	A1 Percentage representation of ECTS from the teaching subjects of the study program	**B** Total number of ECTS from elective courses	B1 Percentage representation of ECTS from elective subjects in relation to the total number of ECTS in the study program
1.	6 years/360 ECTS (integrated first and second cycle)	360	100%	38	(B/A)*100=10,56%

7.1. Rules and method of choosing elective subjects with the possibility of choosing subjects from other accredited study programs

Method of choosing elective subjects from the study program
Students can choose eletive subjects without restriction from the list of all elective courses according the study program.
Method of choosing elective subjects from the university list
/

7.2. Deadlines for completing the planned activities of the study program

The deadline for completition of the study program is twice longer from the total duration of the study (12 years) according the study rules.

8. List of teaching staff with data specified in article 7 (Annex no. 4) of the Rulebook on the content of study programs ("Official Gazette of the Republic of Macedonia", no. 79/2023) and article 61 paragraph 3 of the Law on Higher Education ("Official Gazette of the Republic of Macedonia", no. 82/2018)

Table 8.1 List of persons selected in teaching-scientific, scientific and teaching positions in full-time regular employment at the unit, who will participate in the realization of the study program

	Name and surname of the teacher	to be specified		Name of the subject (from Table 7.1 and 7.2)	Total number of subjects	
		the profession in which he/she was elected and in which scientific field	*The field in which he/she received its PhD*		winter	summer
1	Velimir Stojkovski	Full professor, Biological science	Biological science	Cell Biology Biochemistry Clinical Biochemistry Molecular Mechanisms of General Anesthesia (e)	3	2

				Biochemical Ecotoxicology (e)		
2	Toni Dovenski	Full professor,	Veterinary science	Reproduction 1 Reroduction 2 Introduction to Veterinary Medicine (e) Ultrasound Diagnostics of Reproductive Disorders (e) Advanced Reproductive Endocrinology (e) Advanced Andrology and Cryobiology (e)	3	3
3	Vlatko Ilieski	Full professor, Anatomy	Veterinary science	Animal Anatomy 1 Animal Anatomy 2 Animal Clinical Anatomy Animal Behavior and Welfare Laboratory and Exotic Animal Anatomy and Welfare (e)	2	3
4	Vladimir Petkov	Full professor,	Veterinary science	Animal Phisiology 1 Animal Phisiology 2 Exotic Animal Physiology (e) Comparative Physiology (e)	2	2
5	Plamen Trojachanec	Full professor, Surgery, Orthopedics, Ophtalmology	Veterinary science	Anesthesia and Intensive Care General Surgery Communication in Veterinary Practice Soft Tissue Surgery Orthopedics and Rehabilitation Ophthalmology Selected Techniques for Surgical Fracture Reduction (e) Surgical Skin Reconstruction Techniques (e)	4	4
6	Zehra Hajrulai Musliu	Full professor,	Veterinary science	Chemistry Analytical Chemistry of Food Residues and Contaminants in Food (e) Chemistry of Food Quality (e)	2	4

				Biochemical Ecotoxicology (e) Chemistry of Natural Compounds (e)		
7	Romel Velev	Full professor,	Veterinary science	Nutritious, Medicinal and Poisonous plants General Pharmacology Special Pharmacology Veterinary Toxicology Rational Application of Antimicrobial Drugs (e) Poisonous Plant Toxicology (e) Clinical Pharmacology (e)	3	4
8	Dine Mitrov	Full professor	Veterinary science	Visual Diagnostic Methods and Physical Therapy Clinical and Laboratory Diagnostics in Farm Animals Internal Diseases in Farm Animals 1 Internal Diseases in Farm Animals 2	2	2
9	Igor Ulchar	Full professor	Veterinary science	Pathophysiology 1 Pathophysiology 2 Clinical Pathophysiology € Veterinary Hematology (e) Basis of Cytological Diagnostics (e)	3	2
10	Blagica Sekovska	Full professor		Rural Economics Communication in Veterinary Practice Basic Management and Management of Veterinary Practice Green Economics and Sustainable Development (e) Economics and Organization in Livestock Production (e) Marketing in Veterinary Practice (e) Animal Product Supply Chain Management (e)	3	4
11	Pavle Sekulovski	Full professor	Veterinary science	Meat Hygiene and Technology	3	4

				Milk Hygiene and Technology Meat, Fish, Eggs and Honey – Hygiene and Technology Food Safety and Veterinary Public Health Veterinary Inspection (e) Food Microbiology (e) Current Food Safety Systems (e)		
12	Slavcho Mrenoshki	Full professor	Veterinary science	Microbiology 1 Microbiology 2 Veterinary Immunology Veterinary Vaccinology (e) Case Studies in Veterinary Clinical Immunology (e) Case Studies in Veterinary Clinical Microbiology (e) Bacterial Resistance to Antibiotics (e)	4	3
13	Jovana Stefanovska	Full professor	Veterinary science	Parasitology and Parasitic Diseases 1 Parasitology and Parasitic diseases 2 Tropical Parasitic Diseases (e) Veterinary Entomology (e) Veterinary Clinical Parasitology (e) Parasitology in Public Health (e) Parasitological Cases (e)	3	4
14	Florina Popovska Perchinikj	Full professor	Veterinary science	Hystology and Embryology 1 Histology and Embryology 2	1	1
15	Vasilka Poposka Trenevska	Full professor		Biostatistics	1	
16	Lazo Pendovski	Full professor	Veterinary science	Animal Anatomy 1 Anaimal Anatomy 2 Animal Clinical Anatomy Visual Diagnostic Methods and Physical Therapy Domestic Pet Computed Topography (e)	4	1
17	Dean Jankuloski	Full professor	Veterinary	Meat Hygiene and	3	4

			science	Technology Milk Hygiene and Technology Meat, Fish, Eggs and Honey – Hygiene and Technology Food Safety and Veterinary Public Health Veterinary Inspection (e) Food Microbiology (e) Current Food Safety Systems (e)		
18	Trpe Ristoski	Full professor	Veterinary science	Basic Pathology Special Veterinary Pathology Forensic Veterinary Medicine and Veterinary Ethics Dermatopathology (e) Oncology (e)	2	3
19	Aleksandar Dodovski	Full professor	Veterinary science	Avian diseases Poultry Production Technology Processes (e) Husbandry and Diseases in Non-poultry Avian Species (e) Pet Bird Husbandry and Diseases (e)	2	2
20	Elena Davidkovska	Full professor		Veterinary Administrative Legislation Administrative Procedure in Veterinary Activities (e)	2	
21	Irena Celeska	Full professor	Veterinary science	Pathophysiology 1 Pathophysiology 2 Clinical Pathophysiology (e) Veterinary Hematology (e) Basis of Cytological Diagnostics (e)	3	2
22	Kiril Krstevski	Associate professor	Veterinary science	Infectious Diseases in Domestic Animals 1 Infectious Diseases in Domestic Animals 2 Veterinary Epidemiology	2	1
23	Igor Dzadzovski	Associate professor	Veterinary science	Clinical and Laboratory Diagnostics in Farm Animals Internal Diseases in Farm Animals 1	1	2

				Internal Diseases in Farm Animals 2		
24	Iskra Cvetkovikj	Associate professor	Veterinary science	Microbiology 1 Microbiology 2 Veterinary Immunology Veterinary Vaccinology (e) Case Studies in Veterinary Clinical Immunology (e) Case Studies in Veterinary Clinical Microbiology (e) Bacterial Resistance to Antibiotics (e)	4	3
25	Radmila Chrcheva Nikolovska	Associate professor	Veterinary science	Nutritious, Medicinal and Poisonous plants Domestic Animal General Nutrition Specific Nutrition of Domestic Animals Bulk Feed Production (e) Harmful Antinutritive Compounds in Feed (e) Feed Additives and Health Modulators (e)	3	3
26	Branko Atanasov	Associate professor	Veterinary science	Reproduction 1 Reroduction 2 Ultrasound Diagnostics of Reproductive Disorders (e) Advanced Reproductive Endocrinology (e) Advanced Andrology and Cryobiology (e)	2	3
27	Ksenija Ilievska	Associate professor	Veterinary science	Anesthesia and Intensive Care General Surgery Soft Tissue Surgery Orthopedics and Rehabilitation Ophthalmology Molecular Mechanisms of General Anesthesia (e) Companion Animal Anesthesia and Analgesia Techniques Under Specific Surgical Conditions (e) Veterinary Dentistry in Dogs and Cats (e)	4	4

28	Nikola Adamov	Associate professor	Veterinary science	Animal Husbandry 1 Animal Husbandry 2	1	1
29	Sandra Mojsova	Associate professor	Veterinary science	Meat Hygiene and Technology Milk Hygiene and Technology Meat, Fish, Eggs and Honey – Hygiene and Technology Food Safety and Veterinary Public Health Veterinary Inspection (e) Food Microbiology (e) Current Food Safety Systems (e)	3	4
30	Mirko Prodanov	Associate professor	Veterinary science	Meat Hygiene and Technology Milk Hygiene and Technology Meat, Fish, Eggs and Honey – Hygiene and Technology Food Safety and Veterinary Public Health Veterinary Inspection (e) Food Microbiology (e) Current Food Safety Systems (e)	3	4
31	Aleksandar Cvetkovikj	Associate professor	Veterinary science	Parasitology and Parasitic Diseases 1 Parasitology and parasitic diseases 2 Tropical Parasitic Diseases (e) Veterinary Entomology (e) Veterinary Clinical Parasitology (e) Parasitology in Public Health (e) Parasitological Cases (e)	3	4
32	Branko Angjelovski	Associate professor	Veterinary science	Swine Diseases		1
33	Ivica Gjurovski	Associate professor	Veterinary science	Basic Pathology Special Veterinary Pathology Forensic Veterinary Medicine and Veterinary Ethics Dermatopathology (e)	2	3

				Oncology (e)		
34	Martin Nikolovski	Assistant professor	Veterinary science	Animal Phisiology 1 Animal Phisiology 2 Exotic Animal Physiology (e) Comparative Physiology (e)	2	2
35	Elena Atanaskova Petrov	Associate professor	Veterinary science	Clinical and Laboratory Diagnostics in Companion Animals and Equines Visual Diagnostic Methods and Physical Therapy Internal Diseases of Small Animals and Equids 1 Internal Diseases of Small Animals and Equids 2 Veterinary Dentistry in Dogs and Cats (e) Clinical Nutrition in Dogs and Cats (e) Cynology (e) Changes in Laboratory Profilees in Companion Animal Diseases (e)	4	4
36	Risto Uzunov	Assistant professor	Veterinary science	Analytical Chemistry of Food Chemistry of Natural Compounds (e) Ecotoxicology (e) Residues and Contaminants in Food (e) Chemistry of Food Quality (e)	1	4
37	Miroslav Kjosevski	Assistant professor	Veterinary science	Anymal Hygiene 1 Animal Hygiene 2 Animal Behaviour and Welfare Biosecurity in Animal Husbandry and Veterinary Medicine (e) Precision Agriculture and Veterinary Medicine (e) Measuring Animal Behaviour (e) Environmental Protection (e)	3	4
38*	Appointed teacher	/	/	Fish Biology and	2	4

	by the Teaching Scientific Council			Pathology Wild Animal Biology and Pathology Bee Biology and Pathology Aquaculture (e) Zoology of wildlife (e)		
39**	Appointed teacher by the Teaching Scientific Council			Herd Health Management Companion Animal Clinical Practice 1 Farm Animal Clinical Practice 1 Food Industry Enterprise Practice 1 Companion Animal Clinical Practice 2 Farm Animal Clinical Practice 2 Food Industry Enterprise Practice 2 Elective practical traininig	4	4
Total					99	109

*Due to the lack of elected teachers, the Teaching Scientific Council has been responsible for electing teachers to cover lectures for the listed subjects, starting from the academic year 2022/2023

** For subjects: Herd Health Management, Companion Animal Clinical Practice 1, Farm Animal Clinical Practice 1, Food Industry Enterprise Practice 1, Companion Animal Clinical Practice 2, Farm Animal Clinical Practice 2, Food Industry Enterprise Practice 2 and Elective practical traininig, Teaching Scientific Council has been responsible for electing teachers to cover lectures for the listed subjects, starting from the academic year 2022/2023.

Table 8.2 List of persons selected in teaching-scientific, scientific and teaching positions in full-time regular employment from other units of the higher education institution engaged in the unit where the study program is implemented

No.	Name and surname of the teacher	**to be specified**			**Title of the subject (from Table 7.1 and 7.2)**	Total number of subjects taught per unit and study program	
		the profession in which he was chosen and in which scientific field	*The field in which he received his doctorate*	*unit where he works on a regular basis*		winter	summer
1	Riste Poposki Dimoski	Associate professor			Biophysics	1	
2	Sasho Todorovski	Associate professor			Sports and health		1
3	Milan Damjanoski	Full			Introduction to		1

		professor			English Veterinary Terminology I		
					Introduction to English Veterinary Terminology II	1	
4							
5							
Total						2	2

Table 8.3 List of persons selected in teaching-scientific, scientific and teaching positions in employment in another higher education institution or other institution (private or public non-educational) engaged in the unit where the study program is implemented

No.	Name and surname of the teacher	**to be specified**			**Name of the subject** (from table 7.1 and 7.2)	**Total number of subjects**		**Employment**
		the profession in which he was chosen and in which scientific field	*The field in which he received his doctorate*	*unit where he works on a regular basis*		winter	summer	
1								
2								
3								
4								
5								
Total								

Table 8.4. Number of teachers needed to implement the higher education activities of the study program (Article 28 of the Rulebook on Standards and Norms for the Establishment and Performance of Higher Education Schools, „Official Gazette of the Republic of Macedonia“, No. 245/2022)

No	Teachers involved in the implementation of the study program	**A** Number of teaching subjects	**B** Total pool of classes by subjects	**C** Number of students for whom accreditation is sought	**D** Group size for lectures and practicals for full-time students	Number of clasesses per teacher – per year[1] (Bx15) x D
1	Aleksandar Cvetkovikj	6	4	50	1	60
2	Aleksandar Dodovski	4	6			90
3	Blagica Sekovska	7	6.5			97.5
4	Branko Angjelovski	1	2			30

5	Branko Atanasov	5	5			75
6	Dean Jankuloski	6	2.5			37.5
7	Dine Mitrov	4	4.17			62.55
8	Elena Atanaskova Petrov	8	9.67			145.05
9	Elena Davidkovska	2	3			45
10	Florina Popovska Perchinikj	2	4			60
11	Igor Dzadzovski	3	3.5			52.5
12	Igor Ulchar	5	3.5			52.5
13	Irena Celeska	5	3.5			52.5
14	Iskra Cvetkovikj	7	4.5			67.5
15	Ivica Gjurovski	5	6.5			97.5
16	Jovana Stefanovska	6	4			60
17	Kiril Krstevski	3	6			90
18	Ksenija Ilievska	8	7			105
19	Lazo Pendovski	5	5.67			85.05
20	Martin Nikolovski	4	5			75
21	Mirko Prodanov	6	2.5			37.50
22	Miroslav Kjosevski	7	9			135
23	Nikola Adamov	2	4			60
24	Pavle Sekulovski	6	2.5			37.5
25	Plamen Trojachanec	9	8			120
26	Radmila Chrcheva Nikolovska	6	7.5			112.5
27	Riste Uzunov	5	3			45
28	Romel Velev	7	9.5			142.5
29	Sandra Mojsova	6	2.5			37.5
30	Slavcho Mrenoshki	7	4.5			67.5
31	Toni Dovenski	6	6			90
32	Trpe Ristoski	5	5.5			82.5
33	Vasilka Poposka Trenevska	1	1			15
34	Velimir Stojkovski	5	8			120
35	Vladimir Petkov	4	5			75
36	Vlatko Ilieski	5	6			90
37	Zehra Hajrulai Musliu	6	4.5			67.5

***** (Bx15) x D is forlmulated that B represents total pool of classes from all subjects, and D represents number of clasesses per teacher – per year;

** Since most teachers cover two or more subjects, the total number of classes for a single subject per year is divided among the number of teachers for that subject, where applicable.

9. A list of the required number of non-teaching staff, in accordance with Article 13 of the Rulebook on Standards and Norms for the Establishment and Performance of Higher Education Activities (Official Gazette of the Republic of North Macedonia No. 245/22)

Table. 9.1. Summary overview of non-teaching/administrative staff by title and jobs at the higher education institution (faculty, i.e. higher vocational school)

No	Job description	Qualification	Number of persons
1.	Library		1
2.	Department of Student Affairs		1
3.	Service for auxiliary technical staff		6
4.	Service for material and financial operations		10
5.	Service for general and legal affairs		1
6.	Information System Executive	/	0

10. Data on the space provided for the realization of the Study Program Veterinary medicine – English language, organized at the Faculty Faculty of veterinary medicine-Skopje in accordance with Article 20 of the Rulebook on Standards and Norms for the Establishment and Performance of Higher Education Activities ("Official Gazette of the Republic of North Macedonia No. 245/22)

Table 10. List of rooms with an area available to the higher education institution (faculty, i.e. higher vocational school)

No	Type and purpose of space	Number	Number of places	Area m
1.	Amphitheatres and lecture halls	3	148	211.54
2.	Multifunctional room – holding classes, and handling/practicing with animal models	1	25	60
3.	Laboratories (under the department/-non acreditated laboratories) (demonstration laboratories)	7	68	212.24
4.	Laboratories for performing experimental (practical) independent exercises	3		96
5.	Other common and multipurpose rooms: meeting rooms (conference room)	1	18	28.4
6.	Computer room/Student library	1	23	42.6
7.	Anatomy dissection room and anatomy museum	2	24	56
8.	Necropsy room	1	12	48
9.	Microscopic room	1	15	34.2
10.	Radiology cabinet and practical room	1	10	94.75
11.	University Veterinary hospital	1	12	421
12.	Cabinets for the teaching staff, collaborative and non teaching staf	29		440

13.	Student assembly office	1	3	10
14.	Student affair office	1	3	14.2
15.	Administration/library office and sanitary units	16		274.23
16.	Corridors, stairs and etc.	12		595.24
17.	Storage/main storage office	8	3	75.86
18.	Fascilities and premises for animal housing (boxes etc)			279.0
19.	Additional fascilities (for employes, student)			247.74
Total				**3.241**

11. List of equipment and IT-technical resources provided for the implementation of the integrated first and second cycle of study program Veterinary medicine on English, at the Faculty of veterinary medicine-Skopje, in accordance with Annex 2 of the Rulebook on standards and norms for the establishment and performance of higher education activities ("Official Gazette of the Republic of North Macedonia" no. 245/22)

Table 11.1 List of equipment and teaching aids (by type, number and purpose) for performing the activity that correspond to the norms and standards for performing higher education activity.

No	Equipment and teaching aids	Type	Purpose	Number
1.	Animal models (Canine, Feline, Horse, Bovine for developing clinical skills in students)	Teaching	Teaching, Practicals	17
2.	Computer	Teaching	Teaching, Amphiteaters	4
3.	Computer	Teaching	Teaching, Student library	10
4.	Interactive whiteboard	Teaching	Teaching	4
5.	LCD TV	Teaching	Teaching	5
6.	Video projector	Teaching	Teaching	5
7.	School microscopes (Kruss)	Teaching	Teaching	13
8.	School microscopes (Nikon)	Teaching	Teaching	3
9.	School microscopes (Biobase SE)	Teaching	Teaching	4
10.	Microscope (Leica, DME)	Teaching	Teaching, Laboratory	1
11.	Ocular camera (Dino-Lite Digital Microscope)	Teaching	Teaching, Applicative/ScientificWork	1
12.	*Laboratory for Analytical Chemistry of Food and Feed* • GC-MSD Agilent type 7890A/5975C • GC-FID Agilent type 7890B • HPLC-RID Agilent type 1260 • HPLC-DAD/FD Agilent type 1260 • Tri-Carb Liquid 4910TR 110 V Scintillation Counting Perkin Elmer • Digester – Pobre	Laboratory	Teaching, Applicative/ScientificWork	1

	• Moisture meter – Sartorius • Dryer – Binder GmbH • Sterilizer – Instrumetaria Zagreb • Centrifuge – Funke-Dr.N.Gerber • Water bath – Tehne • Heating mantle- Hozic Elektromechanika Kranj • Heating mantle – Hožić • Electric hotplate – Schott Instruments • Hotplate – Schott Instruments • Sand bath – Inko • Sand bath – J.P.selecta • Annealing furnace – SNOL • Combustion apparatus of proteins – Gerhardt • Analytical balance – Sartorius • Analytical balance – Sartorius • Technical balance – Tehtnica • Hectoliter scale – Kitt Electric Laboratory • Vacuum pump – Sartorius • Protein distillation apparatus – PBI • Refractometer • Saccharomat-Polaroid – Shmidtt+Haenchs • Spectrophotometer – Perkin Elmer • Saccharoflex - Shmidtt+Haenchs • Dispenser – Brand • Dispenser – OPTIFIX • Wine distillation apparatus – Gibertini Elettronica SRL • Titrator – Metron • Refrigerator – Gorenje • pH-meter – Sartorius • Deep-fatigue refrigerator • Laminar flow chamber • Spectrophotometer Agilent Cary 60 UV- Vis • Spectrophotometer software CARY Win UV 5.1.3			
13.	*Laboratory for Microbiology of Food and Feed*	Laboratory	Teaching, Applicative/ScientificWork	1

	• RT-PCR • PFGE • Vitek 2 • colony counter • autoclaves, • sterilizers, • incubators, • stomachers, • dilumers, • microscopes, • water baths, • lyophilizers, • centrifuges, • spectrophotometers, • laminar flow cabinets, • water distillers and deionizers, • refrigerators, • freezers, • scales, • laboratory furniture with necessary installation for work, • laboratory inventory with chemicals			
14.	*Laboratory for Resiudes and Contaminents* • Gas Chromatograph with EDS and FID Hewlett Packard 5890 Series II, • Headspace sampler- Hewlett Packard 649E • Atomic absorption spectrometer with flame photometry AAS Analyst 400 Perkin Elmer, • Atomic absorption spectrometer with graphite furnace AAS Analyst 600 Perkin Elmer, • Technical balance, • Mercury analysis system, • Spectrophotometer, • Gas chromatograph with mass detector- Varian 3900, • Nitrogen evaporator, • Homogenizer, • Ultraturex homogenizer,	Laboratory	Teaching, Applicative/ScientificWork	1

	• Vacuum pump, • Centrifuge, • Mixer, • Gas chromatograph with mass detector – Hewlett Packard 5890 Series II, ELISA Reader, • Water bath, Vortex mixer for test tubes, • Magnetic mixer, • pH meter, • ELISA kits, • Laboratory furniture with digesters and the necessary installation for work, • Laboratory inventory (glassware), Chemicals and other auxiliary equipment.			
15.	Laboratory for Raw Milk Quality • FOSS Milkoscan 4000: a device that performs chemical analysis of milk (fat, protein, lactose, dry matter); • FOSS Fossomatic 5000: a device for counting somatic cells in milk; • FOSS Bactoscan 8000 S: a device for determining the total number of microorganisms in milk; • Funke Gerber Cryostar I: an instrument that determines the freezing point of milk, i.e. the percentage of added water; • DSM Delvo test: a test for determining the presence of inhibitors (antibiotics) in milk	Laboratory	Teaching, Applicative/ScientificWork	1
16.	*Laboratory for Hygiene and Animal Welfare and Enviromental Protection* *Automatic weather station with determination of: wind speed; wind direction; temperature; humidity; maximum rainfall and pyranometer • Thermometer and Hygrometer Dataloggers • Anemometer probe • Globe thermometer • Luximeter probe • Sound level meter Class 1 for outdoor use	Laboratory	Teaching, Applicative/ScientificWork	

	• Apparatus for determining dust in the air • Microbiological Air sampler • Air sampling pump - Multigas detector with glass tubes for determining Ammonia, Carbon dioxide, Hydrogen sulfide, Carbon monoxide and Oxygen • Micropipettes • Probe (wedge) for soil sampling made of galvanized steel, about 30 cm long • Mixer for pedological sieves and pedological sieves • Dryer • Soil thermometer • Field pedological kit for field testing of nitrates, nitrites, ammonium, phosphate and potassium analysis, soil structure, acidity (pH value), density and humidity • Apparatus for heating test tubes (dry heating) • Scale: digital, readability from 0.01 g • Analytical balance, readability 0.0001 g • Vacuum filtration apparatus • Stirrer, magnetic • Stirrer, digital with rod; • Turbidimeter - portable • Laboratory pH/mV meter (conductometer) • Portable pH/mV meter (conductometer) with one electrode • Water bath • Oven • Spectrophotometer • Incubator • Centrifuge • Microscope with camera • Luminometer with swabs • Test tubes, tweezers, burettes, Erlenmeyer flasks, flasks, bottles, beakers, funnels, mortars, pestles • Desiccator • Noise measuring device Class 2			

	optimus Integrating Sound Level Meter Kit, Audio Recording, Data logging CIRRUS • Air quality measuring device - for measuring temperature, humidity, barometric pressure, CO2 Testo 435-2 multi-function instrument • Gas measuring device methane, hydrogen sulfide, carbon monoxide, ammonia, oxygen Multi Rae Lite pumped CH4, O2, H2S,CO, NH3 Automatic weather station with determination of: wind speed and direction, temperature, humidity, maximum rainfall and pyranometer			
17.	*Laboratory for Histology and Pathohistology* • Tissue processor for processing tissues and organs until paraffining – Slee Mainz, • Cold plate paraffinizer • Cold plate • Thermostat – Heraeus Instruments, • Thermostat – Binder, • Rotary microtome • Cryotome, Leica, CM 1850 • Autostainer - Thermo • Cryotome, model Cut 4060 – Leica, • Water bath - Slee Mainz, • Water bath, Termofin • Cytocentrifuge - Shandon Cytospin • Thermal magnetic stirrer • Microwave oven – Samsung, • Ph - meter, Sartorius • Analytical balance, Sartorius • Vortex - Kartell • Magnetic stirrer - Heidolph • Microtiter pipettors	Laboratory	Teaching, Applicative/ScientificWork	1
18.	*Laboratory for Plastination* • Threading • Freezing chambers up to -25°C, • Acetonometer 0-100%	Laboratory	Teaching, Applicative/ScientificWork	1

	• Acetonometer 90-100% • Thermometers • Vacuum chamber • Vacuum pump, 16 m3/h • Vacuum adjustment unit • Oil and solvent separator • Manometer • Digital vacuum controller • Gas curing chamber			
19.	*Laboratory for Andrology and Cryogammet Preservation* • CO2 and O2 embryo incubator with temperature and humidity control • CO2 incubator for media heating and egg maturation • Ultrasound device for OPU with aspiration system (Aloka ultrasound with transvaginal veterinary probe 7.5 MHz, with needle guide for puncture) • Micromanipulator for embryos with inverted microscope • Embryo freezer • Laparoscopy equipment – Karl Storz laparoscope with camera and monitor • Stereo microscope • Centrifuge • Vortex • Vacuum pump for IVF • Laminar flow chamber with heating plate	Laboratory	Teaching, Applicative/ScientificWork	1
20.	*Laboratory for Serology* • ELISA Readers BDSL Immunoscan PLUS HumaReader HS • Shaker with incubator Heidolph TITRAMAX 1000/INKUBATOR 1000 • Water baths MEMMERT 350W P SELECTA • Microtiter pipettors	Laboratory	Teaching, Applicative/ScientificWork	1
21.	*Laboratory for Clinical Microbiology*			1

22.	*Laboratory for Clinical Biochemistry* • *Automatic biochemistry analyzer CHEM200 STR* • *Immunological analyzer Mini Vidas4700022* • *Laboratiry Centrifuge*	Laboratory	Teaching, Applicative/ScientificWork	1
23.	*University Veterinary Hospital* - ECG device CARDIOLINE ar 600adv - CT unit SOMATON GO.NOW Siemens - Vetus 8 Mindray ultrasound color Doppler - Mindray DP-6600 Vet - Color Doppler ESAOTE, MyLab 30 gold (MyLab 30 CV) - Colordopler Mindray Vetus8 - Krusse – otoscope/ophthalmoscope - Wall fixed otoscope/ophthalmoscope - Urine specific gravity Krusse - Pre vacuum steam Steam Sterilizor HSG 3870 Tuttnauer - Steam Autoclav CELITRON, Sting 11 Type B) - Companion animal inhalation machine with Isoflurane vaporizer - Moduflex Access 2, Kruuse - Companion animal inhalation machine with Isoflurane and Sevofluran vaporizer - Medsigoing global group Co Ltd, MSLGA05 - Companion animal inhalation machine with Isoflurane vaporizer – Matrix - Gimma thermocautery - MindrayMEC 1200 Vet - EDAN INSTRUMENTS, IM8 Vet monitor - Capnograph with pulse oximetry - Perfusor Mindray (5)		Teaching/Applicative Work	

	- Infusion pump Mindray (5) - EICKMAYER, Profident PLUS Lumos dental unit - Negatoscope JorVet, J-1022 Surgical light Dr. Mach, Surgical light, Surgical lamp - Medsinglong- MSLDBA02V biochemistry - V-Ckeck, Bionote, VC7402EA rapid diagnostics of hormonal status and infectious disease in companion animals - Hematocrit centrifuge - IDEXX, VetStat Electrolyte and Blood gas analyzer - Microscope - Icar Tonovet, Eickmayer - B Braun STIMUPLEX - Mobile claw trimming set - Underwater trademill for companion animal physical treatment			
	X ray Szhimatzu - CR	Diagnostic	Teaching/Applicative Work	1

Table 11.2 List of IT-technical resources (by type, number and purpose) for performing the activity that correspond to the norms and standards for performing higher education activity

No.	Information - technical resources	Type	Purpose	Number
1.	Flast screen TV	Teaching	Theoretical and practical teaching	5
2.	Computers with internet access	Teaching	Theoretical and practical teaching	18
3.	Inetractive white board	Teaching	Theoretical and practical teaching	3
4.	LCD projectors	Teaching	Theoretical and practical teaching	4

12. Information on the number of students (enrolled for the first time) of the study program in the period since the last accreditation

Table 12.1. Overview of the number of students enrolled (for the first time) in the study program during the period of the last accreditation and the number of students for whom accreditation was obtained

Academic year		Number of students for whom accreditation was obtained	Number of students enrolled in the first year
1.	2022/2023	15	1
2.	2023/2024		3
3.	2024/2025		8
4.			
5.			
Total no of enrolled students			12

Table 12.2. Number of students for whom accreditation has been obtained or enrolled students in study programs, within the unit of the university where it belongs.

No	**Name of the study program**	Number of students for whom accreditation was obtained	Number of students enrolled in the first year
1	First and second cyle integrated studies of Veterinary medicine, 6 years (360 ECTS)	50	
2	Integrated studies of first and second cycle Veterinary medicine – English language 5.5 years (330 ECTS)	15	8
3	Second cycle specialized studies, 1 year (60 ECTS)	20	6
4			
Total		85	

Table 12.3. Number of students required for reaccreditation according to the net area available to the unit for the realization of the study programs

A	**B**	**C**	**D**
Total area available to the unit in m2 (table 10)	Total number of students for whom accreditation was obtained or students enrolled in all accredited study programs (Table 12.2)	**Number of students for which (re)accreditation of a new study program is requested**	**area in m2 per student (B+C)/A =**
3.241	85	50	0,04165

12.1 Students with special needs in accordance with Article 36 of the Rulebook on Norms and Standards for the Establishment of Higher Education Institutions and Performing Higher Education Activities ("Official Gazette of the Republic of North Macedonia" No. 245/22)

Table 12.4. Conditions that the higher education institution should provide for students with special needs.

	Conditions	Description (if it does not exist it is left blank or planning is offered)
1.	Unhindered access to the facility	Yes
2	Elevator	N/A
3	Special places in the classroom	N/A
4	Electronic aids	N/A
5		

13. Information on scientific research and publishing activity in accordance with Article 18 of the Rulebook on Norms and Standards for the Establishment of Higher Education Institutions and Performing Higher Education Activity ("Official Gazette of the Republic of North Macedonia" No. 245/22)

Facutly of veterinary medicine-Skopje has modern equipement, information technology and other technical resources, which are available for carrying out educational, scientific research and applicative activities.

14. Library and information on provided mandatory and additional literature, Article 37 of the Rulebook on Norms and Standards for the Establishment of Higher Education Institutions and Performing Higher Education Activity ("Official Gazette of the Republic of North Macedonia" No. 245/22)

Table 14.1. List of mandatory literature and the number of copies

No	**Type of literature noted in Appendix 3**	Number of copies	Electronic format (Pdf, word, etc.)
1.	Required reading		https://fvm.ukim.edu.mk/fakultet/kapaciteti/biblioteka/
2.	Additional literature	3600	https://fvm.ukim.edu.mk/fakultet/kapaciteti/biblioteka/

15. Information about the website (Article 21 of the Law on Higher Education ("Official Gazette of the Republic of North Macedonia" No. 82/18) and Article 18 of the Rulebook on Standards and Norms for the Establishment of Higher Education Institutions and Performing Higher Education Activities ("Official Gazette of the Republic of North Macedonia" No. 245/22)

All University units have a website, where they are publishing all docuemnts noted in table 15, as well as other faculty activities. 1. Statute of the University unit and other acts that determine internal relations; 2. Decision on accreditation for every study program individually and Decision for beginning with work for every study program individually; 3. Act on systematization; 4. Rules of procedure of the Teaching-scientific council (board); 5. Regulations on salaries and other remunerations of the unit; 6. Report and decision on the last elections for every professor and associate published in the University Bulletin; 7. Student calendar (according to the Study rulebook); 8. Class schedule for the current academic year; 9. Final financial report; 10. Dean’s annual report 11. Approved master's topics and topics for PhD

dissertation; 12. Date of public defense of undergraduate diploma thesis; 13. Other acts adopted by the unit and 13. Code of Ethics.

All information's about the Faculties activity are announce and published on the Faculties website.

https://ukim.edu.mk/en/

https://fvm.ukim.edu.mk/

15.1. Public in the work of the higher education institution

Table 15. Available and published information about the work of the higher education institution and the study program that is subject to re/accreditation

No.	Type of published information	Link
1	The Statute of the unit (with all amendments and supplements) and other acts regulating internal relations	https://fvm.ukim.edu.mk/wp-content/uploads/2023/12/Glasnik-460-aneks.pdf
2	Study programs	https://fvm.ukim.edu.mk/studii/
3	Last self-evaluation report	https://fvm.ukim.edu.mk/wp-content/uploads/2024/12/SER_FVMS_Full_Version.pdf
4	The decision on accreditation of each study program separately and the decision of beginning with work for each study program, separately	• https://fvm.ukim.edu.mk/wp-content/uploads/2023/12/%D0%A0%D0%B5%D1%88%D0%B5%D0%BD%D0%B8%D0%B5-%D0%B7%D0%B0-%D0%B0%D0%BA%D1%80%D0%B5%D0%B4%D0%B8%D1%82%D0%B0%D1%86%D0%B8%D1%98%D0%B0-%D0%BD%D0%B0-%D1%81%D1%82%D1%83%D0%B4%D0%B8%D1%81%D0%BA%D0%B0-%D0%BF%D1%80%D0%BE%D0%B3%D1%80%D0%B0%D0%BC%D0%B0-%D0%92%D0%9C-2023_000067.pdf • https://fvm.ukim.edu.mk/wp-content/uploads/2023/12/%D0%A0%D0%B5%D1%88%D0%B5%D0%BD%D0%B8%D0%B5-%D0%B7%D0%B0-%D0%BF%D0%BE%D1%87%D0%B5%D1%82%D0%BE%D0%BA-%D1%81%D0%BE-%D1%80%D0%B0%D0%B1%D0%BE%D1%82%D0%B0-%D0%BD%D0%B0-%D1%81%D1%82%D1%83%D0%B4%D0%B8%D1%81%D0%BA%D0%B0-%D0%BF%D1%80%D0%BE%D0%B3%D1%80%D0%B0%D0%BC%D0%B0-%D0%92%D0%9C-2023_000068-merged.pdf • https://fvm.ukim.edu.mk/wp-

		content/uploads/2020/02/%D0%A0%D0%B5%D1%88%D0%B5%D0%BD%D0%B8%D0%B5-%D0%B7%D0%B0-%D0%BF%D0%BE%D1%87%D0%B5%D1%82%D0%BE%D0%BA-%D1%81%D0%BE-%D1%80%D0%B0%D0%B1%D0%BE%D1%82%D0%B0-%D0%B0%D0%BD%D0%B3%D0%BB%D0%B8%D1%81%D0%BA%D0%B0-%D1%81%D1%82%D1%83%D0%B4%D0%B8%D1%81%D0%BA%D0%B0-%D0%BF%D1%80%D0%BE%D0%B3%D1%80%D0%B0%D0%BC%D0%B0-%D0%B2%D0%B5%D1%82.-%D0%BC%D0%B5%D0%B4%D0%B8%D1%86%D0%B8%D0%BD%D0%B0-%D0%A1%D0%BA%D0%BE%D0%BF%D1%98%D0%B5.pdf
5	The Act of systematization	https://fvm.ukim.edu.mk/wp-content/uploads/2022/07/Glasnik-615-kor..pdf
6	The Rules of procedure of the Teaching-scientific, i.e. scientific council	https://fvm.ukim.edu.mk/wp-content/uploads/2020/05/glasnik-501.pdf
7	Report and decision on the final election in title for eafor every professor and associate published in the University Bulletin	• https://fvm.ukim.edu.mk/kadar/nastavno-nauchen-kadar/redovni-profesori/ • https://fvm.ukim.edu.mk/kadar/nastavno-nauchen-kadar/vonredni-profesori/ • https://fvm.ukim.edu.mk/kadar/nastavno-nauchen-kadar/docenti/
8	Work tasks schedule	• https://fvm.ukim.edu.mk/studii/pokrienost-na-nastava/ • https://fvm.ukim.edu.mk/studii/rasporedi/
9	Accepted topics for the preparation of master's/doctoral theses	• https://fvm.ukim.edu.mk/?s=%D0%B8%D0%B7%D0%B2%D0%B5%D1%81%D1%82%D1%83%D0%B2%D0%B0%D1%9A%D0%B5
10	Acts adopted by the unit in accordance with other laws	• https://fvm.ukim.edu.mk/?s=%D0%B8%D0%B7%D0%B2%D0%B5%D1%81%D1%82%D1%83%D0%B2%D0%B0%D1%9A%D0%B5
11	The Code of ethics	• https://fvm.ukim.edu.mk/wp-content/uploads/2021/10/eticki-kodeks-na-UKIM.pdf

16. Activities and mechanisms through which the quality of teaching is developed and maintained

The Faculty of Veterinary Medicine (FVMS) has established mechanisms to ensure continuous improvement and quality in its educational activites for the integrated first and second cycles of studies in Veterinary Medicine. These mechanisms align with the recommendations of the European Association of Veterinary Higher Education Institutions (EAEVE) and the European Association for Quality Assurance in Higher Education (ENQA), as well as other global trends.
The faculty's commitment to improving theoretical and practical teaching is demonstrated by the procurement of advanced teaching animal models, equipment and small inventory, ensuring the delivery of quality education. The Faculty's strategic plan for the period 2018-2023 clearly defines its mission and goals. The plan also includes a comprehensive analysis of the current situation, identifying strengths, weaknesses, opportunities and threats, with an emphasis on advancing teaching, research and applied work.
FVMS has strived to align its development with European standards, drawing inspiration from faculties in EU member states that are part of the EAEVE, which serves as the accreditation body for veterinary study programs in Europe.
As a member of the EAEVE, FVMS follows the association's recommendations. This recomendations emphasizes practical teaching and ensures that students complete both intramural and extramural practice, enabling them to fulfill competencies and skills required to obtain a diploma and the title of Doctor of Veterinary Medicine.
In the past few year, various activities were established in order to enhance educational quality, such as introducing procedures to record and evaluate student participation in practical teaching, including clinical practice. Additionally, the faculty monitors and evaluates "day one competencies" through anonymous surveys conducted after each semester. The curriculum is regularly revised, incorporating new subjects, updated literature and contemporary scientific knowledge. The teaching methods are designed to integrate theoretical learning with practical simulations and seminars, ensuring alignment with EAEVE standards. This approach offers students a comprehensive understanding of biomedicine and clinical sciences, positioning them for international recognition of their qualifications.
According to the Law of Higher Education, self-evaluation is recommended for all university units as a mechanism for the control and evaluation of the quality of study programs. Self-evaluation allows academic institutions to assess and reflect on the effectiveness of their teaching, research, and organizational practices. It helps ensure that the study programs are aligned with both internal goals and external standards, such as accreditation requirements.

17. Results of the performed self-evaluation according to the Guidelines for the unique bases of the evaluation and evaluation procedures of the universities adopted by the agency for the evaluation of higher education in the Republic of Macedonia and by the Interuniversity Conference of the Republic of Macedonia (Skopje-Bitola, September 2002).

According to the conducted self-evaluation process by the Self Evaluation Committee, it is evident that the faculty is committed to continuously improving the educational process, as well as its scientific and research activities. The faculty has adopted electronic system for tracking all relevant student information, including the final grades. The results of the self-evaluation report are available on the following link:

https://fvm.ukim.edu.mk/fakultet/samoevaulacija/

18. The adequacy of the structure and content of the cycle of studies with the general and specific descriptors

General descriptors		***Subjects through which achievement of the general descriptors is ensured***
Specific descriptors	***Descriptions***	
Knowledge and understanding	The student demonstrates a profound knowledge and understanding of veterinary medicine, effectively employing relevant methods to address complex cases. They exhibit originality in the development and application of autonomous ideas for research purposes. The student shows proficiency in utilizing advanced and enhanced knowledge, displaying a high level of professional competence across the entire field of veterinary medicine. Additionally, their expertise spans various disciplines within veterinary medicine, grounded in the most authoritative international research in related fields.	All subjects from the study program.
Application of knowledge and understanding	The student demonstrates the ability to critically and independently solve cases in a creative and original manner, either within the field of veterinary medicine or through a multidisciplinary approach.	All subjects from the study program.
Assessment ability	The student demonstrates the ability to synthesize and integrate knowledge acquired not only during their studies but also through professional experience. They are capable of addressing complex issues from a professional perspective, making informed assessments even when data is incomplete or limited, while maintaining awareness of personal, social, and ethical responsibilities in the application and evaluation of their knowledge. Additionally, the student shows the ability to assess and select scientific theories, methodologies, tools, and professional skills in veterinary medicine, and to develop novel, science-based analyses and solutions.	All subjects from the study program
Communication skills	The student consistently demonstrates the ability to effectively communicate conclusions, suggestions and opinions, presenting them with clear, well-reasoned arguments. The student shows a strong sense of responsibility not only for their individual outcomes but also for the collective success of the team. Student demonstates ability for initiative, actively initiating and executing activities that fall within their professional competencies,	All subjects from the study program.

	contributing positively to their work environment and professional development.	
Study skills	Demonstrates the ability to recognize the personal need for continuous expansion of already acquired knowledge and the ability to act independently in acquiring new knowledge and skills within a social framework. Demonstrates the ability to take responsibility for further professional development and improvement within veterinary medicine and beyond.	All subjects from the study program.

		Subjects through which achievement of the specific descriptors is ensured
Specific descriptors	***Descriptions***	
Knowledge and understanding	• Demonstrates extended knowledge and understanding of scientific disciplines, which are basis of veterinary doctors' activities. • Demonstrates knowledge about research methods, which are in use in basic and applied research in all aspects of veterinary science. • Demonstrates extended knowledge about structure and function of animals and their breeding. • Demonstrates extended knowledge about ethiology, pathogenesis, clinical signs, diagnostics and treatment of common animal diseases and disorders, which occur in common domestic animal species in EU. • Demonstrates knowledge about legislative related with animal welfare (including transport) and notifiable, reportable and zoonotic diseases. • Demonstrates knowledge about drug legislative and manuals for responsible use of drugs adopted by EU member. • Demonstrates knowledge of the principles of disease prevention and promotion of health and animal welfare. • Demonstrates knowledge of public health issues, including zoonoses	All subjects from the study program
Application of knowledge and understanding	• Demonstrates ability for getting correct and relevant anamnesis for particular animal or group of animals, as well as for their environment.	All subjects from the study program

	• Demonstrates ability for safe and human handling with an animal, and to conduct others for use of such technics. • Demonstrates ability for performing complete clinical examination. • Demonstrates ability for carring out of all common domestic animal species in case of emergency and to perform basic first aid (problems which have to be copied for any species include first aid and coping bleedings, wounds, breath difficulties, eyes and ears injury, loss of consciousness, clinical trauma, burns, tissue injury, internal organ injury and cardiac arrest. First aid which has to be used includes bondaging, cleaning, extremity immobilization, reanimation procedures, and control of bleeding). • Demonsrates ability for samples collecting, storing and transporting. • Demonsatrtes ability for performing standard laboratory tests and interpretation of results not only of tests done by him-/herself, but also of those obtained from other laboratories. • Demosntrates ability for using radiographic, ultrasonic and other technic equipment which is used in diagnostics, safely and in compliance with current regulations. • Demonstrates ability for using appropriate procedures in diagnostics of notifiable, reportable and zoonotic infectious diseases. • Demonstrates ability for correct performing certification. • Demonstrates ability for accessing to relevant data sources for registrated drugs • Demonstrates ability for correct and responcible prescribing and dissoluting of drugs in compliance with relevant legislative and to ensure that drugs and garbage are safely stored or removed. • Demonstrates ability for correct use of surgical equipment sterilization principles. • Demonstrates ability for correct use of aseptical surgery principles. • Demonstrates ability for safe performing of sedation, general and local anesthesia, and	

	pain calming and control. • Demonstrates ability for advising and application of appropriate treatment. • Demonstrates ability for performing of human euthanasia, with use of appropriate method, and simultaneously to show empathy for owner's and other persons' feelings, to maintain safety of present persons, and to give advise for correct corpse removing. • Demonstrates ability for performing general necropsy, registrating details, taking tissue samples, and their correct storing and transporting. • Demonstrates ability for performing pre- and postmortal examination of food production animals and correct identification of condition which have impact on quality and safety of animal origin products. • Demonstrates ability for obtaining and implementing of general records on health and welfare (including production records where is needed). • Demonstrates ability for creating and application of preventive and prophylactic programs related to the specied (herd health) and maintance of approved healh standards, as well as welfare and public health standars, and seeking advice and help from the colleagues if needed • Demonstrates ability for minimization of threats of contamination, crossinfection and pathogene accumulation in premises and on field.	
Assessment ability	• Demonstrates ability for evaluation of evidence. • Demonstrates ability of correct interpretation of clinical finding and its linking with laboratory and diagnostic imaging tests. • Demonstrates ability for correct evaluation of the animal's nutritive status, and ability to advise the client about principles of nutritition and animal husbandry. • Demonstrates ability to recognize necessity of animal euthanasia.	All subjects from the study program
Communication	• Demonstrates ability for efficient	All subjects from the study

skills	communication with clients, and for giving public, professional, collegial and responcible questions; for effient listening and empathic responding, and using speech appropriate for the interlocutor. • Demonstrates ability for orepearing clear case report and maintance of patient records in form appropriate for the colleagues and understandable for the publicy. • Demonstrates ability for efficient work as a member of interdisciplinary team. • Demonstrates consciousness about ethical responcibilites of the veterinary doctor relatied with patient care and client relationship, and also more general with the community related with their eventual impact on environment and society in total. • Demonstates consciousness about economical and emotional ambient where veterinary doctor works, and ability for solvent response on such factors impacts. • Demonsytrates will to use his/her professional qualities for contribution of as good as it can for veterinary medicine development with goal of improving of veterinary practice and incrasing quality of animal care, animal welfare and veterinary public health. • Demonstrates basic knowledge on organization and management of veterinary practice, including: ✓ consciousness about his/her professional obligations related with employement and health; ✓ safety legislative, and his/her position via staff and publicy. • Demonstrates knowledge about price calculation, invoice making, and importance of handling with systems of records and booking, including: ✓ computer records and reports; ✓ ability for efficient use of informatics technology and for commincation and data sharing, collecting, handling and analysing; ✓ importance for harmonization with established standars and practice policy;	program

	• Demonstrates ability to act professionaly related with professional and legal responcibilies, and to understand and apply ethical codices of related regulatory bodies. • Demonstrtes ability to cope with ambiguities and to adapt him-/herself on changes. • Demonstrates consciousness about personal limits, and demonstrates consciousness when and from whom to ask professional advice, help and support. Demonstrates general knowledge of veterinary practice	
Study skills	• Demonstrates the ability to recognize the personal need for continuous improvement of their existing knowledge and skills, as well as the capacity for independent learning to acquire new knowledge and expertise within society.	All subjects from the study program

19. Compliance of theoretical and practical teaching with the objectives of the study program

Table 19. List of institutions with which the higher education institution has concluded an agreement for practical teaching in the study area of the study program for which accreditation is requested

No	Name of the institution	Way of performing the practical teaching	Estimated time for the implementation of the practical teaching
1.	Company for production, trade, transport and veterinary services "Veterinar DK", village Brvenica, based in the village of Brvenica (Tetovo)	Individually or in a small group according to the study program.	Corresponding to the number of classes in the study program and the class schedule.
2.	"Prima Vet", v. Trebenishta, based in the village of Trebenishta (Debarca)	Individually or in a small group according to the study program.	Corresponding to the number of classes in the study program and the class schedule.
3.	Veterinary company "Trust Vet", Gostivar, with headquarters on Blvd. B. Gjinoski bb., Gostivar	Individually or in a small group according to the study program.	Corresponding to the number of classes in the study program and the class schedule.
4.	Company for production, trade and services "Pan Vet" LLC, s. Kadino, with its headquarters at ul. 10/32A, s. Kadino, Ilinden	Individually or in a small group according to the study program.	Corresponding to the number of classes in the study program and the class schedule.
5.	Trading company "Goche i Jole" LLC, Shtip, with headquarters at ul. Boris	Individually or in a small group according to	Corresponding to the number of classes in the

	Kreiger bb, Shtip	the study program.	study program and the class schedule.
6.	Company for veterinary services and trade "Vet Svet" LLC - Skopje, with headquarters at ul. Nicola Trimpare no. 27, Skopje	Individually or in a small group according to the study program.	Corresponding to the number of classes in the study program and the class schedule.
7.	Veterinary clinic Vet Medica ZOVI, Skopje, with headquarters at ul. Radishanska no. 154 Skopje,	Individually or in a small group according to the study program.	Corresponding to the number of classes in the study program and the class schedule.
8.	Veterinary clinic Animal Care, st. Kavala 1, Bitola	Individually or in a small group according to the study program.	Corresponding to the number of classes in the study program and the class schedule.
9.	Veterinary clinic Ino-Vet - Kumanovo, st 205 no. 4, Kumanovo,	Individually or in a small group according to the study program.	Corresponding to the number of classes in the study program and the class schedule.
10.	Animal Resource Network LLC Skopje, bldv. Vidoe Smilevski Bato no. 41, Skopje	Individually or in a small group according to the study program.	Corresponding to the number of classes in the study program and the class schedule.
11.	Dr. Ichkov DOOEL, st. Cuckoo no. 7, Bogdanci,	Individually or in a small group according to the study program.	Corresponding to the number of classes in the study program and the class schedule.
12.	DOO Vet Spirit - Ohrid, st. Nightingale Mountain no. 12, Ohrid	Individually or in a small group according to the study program.	Corresponding to the number of classes in the study program and the class schedule.
13.	Veterinary clinic Tashkovski, st. Ljubljanska no. 32, Veles	Individually or in a small group according to the study program.	Corresponding to the number of classes in the study program and the class schedule.
14.	Veterinarian Dr. Stojchevski, st. Butnikoshareva no. 54, Veles	Individually or in a small group according to the study program.	Corresponding to the number of classes in the study program and the class schedule.
15.	Veterinary station Zdravje DOO, st.. Joakim Krcovski 12, s. Oblesevo	Individually or in a small group according to the study program.	Corresponding to the number of classes in the study program and the class schedule.
16.	Veterinary clinic Klime LLC, village Trebenishte, Ohrid	Individually or in a small group according to the study program.	Corresponding to the number of classes in the study program and the class schedule.
17.	Veterinary clinic PROVET-NG DOOEL, st. Marshall Tito No. 22/3,	Individually or in a small group according to	Corresponding to the number of classes in the

	Negorci, Gevgelija	the study program.	study program and the class schedule.
18.	Veterinary clinic Dr. Gligorovski and Dr. Merzhanovska, st. Šumadiska no. 6, loc. 2, Skopje	Individually or in a small group according to the study program.	Corresponding to the number of classes in the study program and the class schedule.
19.	Veterinary clinic PET-VET AERO DOOEL, bul. Jane Sandanski no. 61, Skopje	Individually or in a small group according to the study program.	Corresponding to the number of classes in the study program and the class schedule.
20.	Veterinary clinic Vinivet Plus, st. 256 no. 6, Marino, n. Ilinden	Individually or in a small group according to the study program.	Corresponding to the number of classes in the study program and the class schedule.
21.	DVU Veterinaren Centar DOOEL, st. Kozara no. 64/1, Skopje	Individually or in a small group according to the study program.	Corresponding to the number of classes in the study program and the class schedule.
22.	Veterinary clinic PET VET, with headquarters at ul. Gjorgji Abadjiev 12, Skopje	Individually or in a small group according to the study program.	Corresponding to the number of classes in the study program and the class schedule.
23.	Veterinary clinic Dr. Marin Velichkovski, st. Vasko Karangjeleski no. 9, Skopje	Individually or in a small group according to the study program.	Corresponding to the number of classes in the study program and the class schedule.
24.	Veterinary station Dr. Lashkoski, st. Stevan Dimoski Nothing no. 11, Prilep	Individually or in a small group according to the study program.	Corresponding to the number of classes in the study program and the class schedule.
25.	Public institution ZOO of the city of Skopje - Skopje, bul. Ilinden 88, Skopje	Individually or in a small group according to the study program.	Corresponding to the number of classes in the study program and the class schedule.
26.	ZOO Medica LLC, with headquarters in the village Kukurechani - Bitola	Individually or in a small group according to the study program.	Corresponding to the number of classes in the study program and the class schedule.
27.	Dooel Veterinary Station Vinica, st. Ilindenska street no. 96, Vinica	Individually or in a small group according to the study program.	Corresponding to the number of classes in the study program and the class schedule.
28.	Green Street Vet Practice, st. 14 no. 5, Tetovo	Individually or in a small group according to the study program.	Corresponding to the number of classes in the study program and the class schedule.
29.	Veterinary clinic Milenici, st. Order no. 28, Skopje	Individually or in a small group according to	Corresponding to the number of classes in the

		the study program.	study program and the class schedule.
30.	Veterinary clinic VET-MEDIKA Z and A, st. 101 BB, municipality of Jegunovce, Tetovo	Individually or in a small group according to the study program.	Corresponding to the number of classes in the study program and the class schedule.
31.	Veterinary clinic Prodanov DOOEL, st. 7 November bb, Gevgelija	Individually or in a small group according to the study program.	Corresponding to the number of classes in the study program and the class schedule.
32.	ZEBRA VETERINARY DOO, import export, st. Bitolska 7z, Demir Hisar	Individually or in a small group according to the study program.	Corresponding to the number of classes in the study program and the class schedule.
33.	AGRIA – Agroindustriska Grupacija DOOEL, st. Blagoj Gjorev, Veles	Individually or in a small group according to the study program.	Corresponding to the number of classes in the study program and the class schedule.
34.	High school SUGS Brakja Miladinovci, st. Brothers Zrevski no. 110, Skopje	Individually or in a small group according to the study program.	Corresponding to the number of classes in the study program and the class schedule.
35.	Vita Vet DOOEL, st General Vasko Karangeleski no. 56, Skopje	Individually or in a small group according to the study program.	Corresponding to the number of classes in the study program and the class schedule.
36.	NOVA VET – Gostivar, st. 18 November 27, 1230 Gostivar	Individually or in a small group according to the study program.	Corresponding to the number of classes in the study program and the class schedule.
37.	PTK Veterinarna Klinika Prilep, st. Lado Lapetset no. 102 in Prilep	Individually or in a small group according to the study program.	Corresponding to the number of classes in the study program and the class schedule.
38.	Veterinary clinic Dr. Chupona, with headquarters in Bitola	Individually or in a small group according to the study program.	Corresponding to the number of classes in the study program and the class schedule.
39.	Veterinary clinic City Vet, with its headquarters at ul. Hristo Tatarchev no. 33 a, Skopje	Individually or in a small group according to the study program.	Corresponding to the number of classes in the study program and the class schedule.
40.	Veterinary clinic Doctor Jasminka Van Der Flier, st. Metropolitan Teodosij Gologanov 149/12, Skopje	Individually or in a small group according to the study program.	Corresponding to the number of classes in the study program and the class schedule.
41.	Veterinary-livestock center Todor Velkov, st.. Done Božinov bb,	Individually or in a small group according to	Corresponding to the number of classes in the

	Kumanovo	the study program.	study program and the class schedule.
42.	DPTU Veterinary Station Negotino, st. M. Tito, no. 12, Negotino	Individually or in a small group according to the study program.	Corresponding to the number of classes in the study program and the class schedule.
43.	Veterinary clinic PELA VET, with its seat in the municipality of Vrcva, village. Krklino – Bitola	Individually or in a small group according to the study program.	Corresponding to the number of classes in the study program and the class schedule.
44.	Veterinary clinic Bunevski Woodstock PIS, at Krushevska Republic - Bitola	Individually or in a small group according to the study program.	Corresponding to the number of classes in the study program and the class schedule.
45.	ZK Pelagonia AD Bitola, st. Novacki pat 11, Bitola	Individually or in a small group according to the study program.	Corresponding to the number of classes in the study program and the class schedule.

- List of all agreements is given on the Faculty website where students can select the most suitable institution where they can perform their extrapractical traininig, outside the Faculty. Faculty has responsibility to renew the cpntracs and expand the list of veterinary ambulants/clinics/farms and other institutions
- (https://fvm.ukim.edu.mk/wp-content/uploads/2024/06/%D0%9B%D0%B8%D1%81%D1%82%D0%B0-%D0%BD%D0%B0-%D0%B4%D0%BE%D0%B3%D0%BE%D0%B2%D0%BE%D1%80%D0%B8-%D0%B7%D0%B0-%D1%81%D0%BE%D1%80%D0%B0%D0%B1%D0%BE%D1%82%D0%BA%D0%B0-%D0%B7%D0%B0-%D0%B8%D0%B7%D0%B2%D0%B5%D0%B4%D1%83%D0%B2%D0%B0%D1%9A%D0%B5-%D0%BF%D1%80%D0%B0%D0%BA%D1%82%D0%B8%D1%87%D0%BD%D0%B0-%D0%BD%D0%B0%D1%81%D1%82%D0%B0%D0%B2%D0%B0-%D0%B7%D0%B0-%D1%81%D1%82%D1%83%D0%B4%D0%B5%D0%BD%D1%82%D0%B8-%D0%BD%D0%B0-%D0%A4%D0%92%D0%9C%D0%A1-06.2024-1.pdf)

20. Compliance of the study program with the single European area for higher education and comparability with the programs of European higher education institutio

Table 20. Institutions, i.e. study programs through which the compliance of the study program with the single European space for higher education and comparability with the programs of European higher education institutions is confirmed

No	**Name of the institution**	**Name of the study program with which comparability is ensured**	**Link to the study program**
1.	Faculty of veterinary medicine, University in Zagreb	Integrated first and second cycle of studies Veterinary medicine	https://www.vef.unizg.hr/wp-content/uploads/2024/09/za-web_informacijski_ENG_24_25-MARTINA.pdf

2.	Veterinary faculty, University in Ljubljana	Undergraduate program veterinary medicine	https://www.vf.uni-lj.si/izobrazevanje/dodiplomski-studij
3.	Faculty of veterinary medicine, University in Beograde	Integrated academic studies Veterinary medicine	https://vet.bg.ac.rs/en/studies/integrated-academic-studies/curriculum

21. Rules governing the writing of written exams, assignments, essays, term papers, projects, graduate work, master's thesis and other activities that are performed in writing, which include at least content, scope, writing style and other relevant requirements.

Rulebooks proposed by DB and approved by TSB regulate some of the permanent and temporary working bodies/committees:

- Rulebook for the procedure and the way of organizing the publishing activity (2022),
- Decision of Rulebook on conditions, criteria, rules and procedure for enrollment and study of the first cycle of studies (undergraduate studies) and the second cycle of studies (postgraduate studies) at the Ss Cyril and Methodius University in Skopje (2021),
- Rulebook on conditions, criteria, rules and procedure for enrolment and study of the first cycle of studies (undergraduate studies) and the second cycle of studies (postgraduate studies) at the Ss. Cyril and Methodius University in Skopje (English version) (2019).

22. Information on provided quality financial guarantee for the study program

Table 22. The value of the financial guarantee

Value of the attached bank guarantee	Amount of tuition paid by the student when enrolling in the study program	Total number of students enrolled in a higher education institution (university or vocational school)	Number of students for whom accreditation is requested

Република Северна Македонија
Универзитет „Св. Кирил и Методиј“ во Скопје
Факултет за ветеринарна медицина - Скопје

Број 0202-1474/11
26.12.2024 година

Врз основа на член 110 од Законот за високото образование („Службен весник на РМ“ бр. 82/18, 178/21 и „Службен весник на Република Северна Македонија“ бр. 58/24), член 246 од Статутот на Универзитетот „Св. Кирил и Методиј“ во Скопје, член 62 став 1, точка 6 од Статутот на Факултетот за ветеринарна медицина во Скопје (Универзитетски гласник бр. 460/19 и 460/2023), како и врз основа на поднесениот Предлог-елаборат за акредитација на студиска програма од први и втор циклус интегрирани студии по Ветеринарна медицина на англиски јазик на Комисијата за подготвување на елаборатот, Наставно- научниот совет на Факултетот за ветеринарана медицина на седницата од 26.12.2024 година, ја донесе следната:

О Д Л У К А

за усвојување на студиска програма од прв и втор циклус од интегрирани студии - Ветеринарна медицина на англиски јазик

Член 1

Се усвојува Елаборатот за студиската програма од прв и втор циклус интегрирани студии - Ветеринарна медицина на англиски јазик на Факултетот за ветеринарна медицина-Скопје.

Член 2

Наставата од студиската програма од прв и втор циклус интегрирани студии-Ветеринарна медицина на англиски јазик ќе започне да се изведува по добивањето согласност од Одборот за акредитација на високото образовние и по добивањето согласност за исполнување на условите за почеток со работа на студиската програма од страна на Агенцијата за квалитет на високото образование на Република Северна Македонија.

Член 3

Одлуката да се достави до Ректорската управа и до Универзитетскиот сенат на Универзитетот „Св. Кирил и Методиј“ во Скопје заради усвојување на студиската програма од прв и втор циклус интегрирани студии - Ветеринарна медицина на англиски јазик.

Член 4

Составен дел на оваа Одлука е Елаборатот за акредитација на студиска програма од прв и втор циклус интегрирани студии - Ветеринарна медицина на наглиски јазик на Факултетот за ветеринарна медицина-Скопје.

Член 5

Оваа Одлука влегува во сила со денот на нејзиното донесување.

Декан

Проф д-р Деан Јанкулоски

Доставено до
- Ректорска управа/Универзитетски сенат
- Архива

МКС EN ISO/IEC 17025

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http://www.fvm.ukim.edu.mk

Бр. 02-143/5
29.1.2025 година
Скопје

Врз основа на член 94, став 1, точка 3 од Законот за високото образование (Службен весник на Република Македонија бр. 82/2018 и Службен весник на Република Северна Македонија бр. 178/2021 и 58/2024) и член 157, став 1, точка 8 од Статутот на Универзитетот „Св. Кирил и Методиј“ во Скопје (Универзитетски гласник бр. 425/2019), по предлог на Наставно-научниот совет на **Факултетот за ветеринарна медицина**, Универзитетскиот сенат на Универзитетот „Св. Кирил и Методиј“ во Скопје, на 17. седница одржана на 29.1.2025 година, донесе

О Д Л У К А

за усвојување на Елаборатот за студиската програма од интегрираните студии од прв и втор циклус студии по Ветеринарна медицина на англиски јазик на Факултетот за ветеринарна медицина

Член 1

Се усвојува Елаборатот за студиската програма од интегрираните студии од прв и втор циклус студии по Ветеринарна медицина на англиски јазик на Факултетот за ветеринарна медицина.

Член 2

Наставата од студиската програма од од интегрираните студии од прв и втор циклус студии по Ветеринарна медицина на англиски јазик, ќе започне да се изведува по добивањето согласност од Одборот за акредитација на високото образование и по добивањето согласност за исполнување на условите за почеток со работа на студиската програма од страна на Агенцијата за квалитет на високото образование на Република Северна Македонија.

Член 3

Одлуката се доставува до предлагачот и до Одборот за акредитација на високото образование на натамошна постапка за акредитација на студиската програма.

Член 4

Оваа Одлука стапува во сила со нејзиното донесување и ќе се објави во *Универзитетскиот гласник*.

Претседател на Универзитетскиот сенат

Проф. д-р Драги Димитриевски

Република Северна Македонија
Универзитет „Св. Кирил и Методиј“ во Скопје
Факултет за ветеринарна медицина - Скопје

Број 0205-12/4
10.01.2025 година

Врз основа на член 122 од Законот за високото образование („Службен весник на РМ“ бр. 82/18, 178/21 и „Службен весник на Република Северна Македонија“ бр. 58/24) и член 86 од Статутот на Универзитетот „Св. Кирил и Методиј“ во Скопје, Одборот за соработка и доверба со јавноста на Факултетот за ветеринарна медицина во Скопје на 1. седница одржана на 10.01.2025 година ја донесе следнава

П Р Е П О Р А К А

1. Се дава позитивно мислење и препорака за Елаборатот за акредитација на студиска програма од прв и втор циклус интергирани студии - Ветеринарна медицина на англиски јазик на Факултетот за ветеринарна медицина-Скопје.

2. Препораката да се достави до Ректорската управа и до Универзитетскиот сенат на Универзитетот „Св. Кирил и Методиј“ во Скопје заради усвојување на студиската програма од прв и втор циклус интегрирани студии - Ветеринарна медицина на англиски јазик на Факултетот за ветеринарна медицина - Скопје.

Образложение

Одборот за соработка и доверба со јавноста на Факултетот за ветеринарна медицина - Скопје го разгледа Елаборатот за акредитација на студиска програма од прв и втор циклус интергирани студии - Ветеринарна медицина на англиски јазик на Факултетот за ветеринарна медицина - Скопје и донесе препорака дека предложената студиска програма за акредитација е во согласност со научниот развој на ветеринарната медицина и се очекува да оспособи висококвалификувани кадри од соодветната област.

Претседател на Одборот,
Проф. д-р Тони Довенски

Доставено до:
1. УКиМ
2. Архива

Лазар Поп-Трајков 5-7, 1000 Скопје
Република Северна Македонија
тел: +389 2 3240 700
факс: +389 2 3114 619
е-пошта: contact@fvm.ukim.edu.mk
http://www.fvm.ukim.edu.mk

Универзитет „Св.Кирил и Методиј“ во Скопје
Природно - математички факултет

Ss. Cyril and Methodius University in Skopje
Faculty of Natural Sciences and Mathematics

Република Северна Македонија
Универзитет „Св. Кирил и Методиј“ во Скопје
ФАКУЛТЕТ ЗА ВЕТЕРИНАРНА МЕДИЦИНА во СКОПЈЕ

Примено: 11.06.2025			
Орг. Един.	Број:	Прилог:	Вредност:
03	802/2		

02-1021/4
10.6.2025

ДО
ФАКУЛТЕТ ЗА ВЕТЕРИНАРНА МЕДИЦИНА СКОПЈЕ
Ул. Лазар Поп-Трајков 5-7
1000 Скопје

ПРЕДМЕТ: Доставување на Одлука за давање согласност за учество во акредитација и реализација на студиска програма

Почитувани,

Во прилог Ви доставуваме Одлука бр. 1021/3 од 30.5.2025г. од Наставно-научниот совет на Природно-математичкиот факултет-Скопје за дадена согласност за учество во акредитација и реализација на студиска програма по Ветеринарна медицина на англиски јазик, на Факултетот за ветеринарна медицина, за наставник од Природно-математичкиот факултет-Скопје, за д-р Ристе Попески Димовски, редовен професор професор на Институтот за физика на Природно-математичкиот факултет-Скопје.

Со почит,

Декан,

Проф. д-р Даворин Трпески

Да се достави до:
- Факултет за ветеринарна медицина;
- Секретар;
- Архива.

Архимедова 3, ПФ 162
1000 Скопје
Република Северна Македонија

Arhimedova 3 PO box 162
1000 Skopje
Republic of North Macedonia

☎ +389 2 3119279
www.pmf.ukim.edu.mk

РЕПУБЛИКА СЕВЕРНА МАКЕДОНИЈА
УНИВЕРЗИТЕТ „СВ. КИРИЛ И МЕТОДИЈ“ ВО СКОПЈЕ
ПРИРОДНО-МАТЕМАТИЧКИ ФАКУЛТЕТ ВО СКОПЈЕ
Бр. 02-1021/3
30.05.2025 год.
С К О П Ј Е

Врз основа на член 68, став 1, точка 25 од Статутот на Природно-математичкиот факултет – Скопје во состав на Универзитетот „Св. Кирил и Методиј“ во Скопје (Универзитетски гласник бр. 464/2019 и 464/2021- анекс), Наставно-научниот совет на Факултетот, постапувајќи по барање на Универзитетот „Св. Кирил и Методиј“ во Скопје, Факултет за ветеринарна медицина – Скопје, бр. 083 - 520/3 од 23.04.2025 година, по предлог од Институтот за физика при Факултетот, бр. 02-1021/2 од 16.05.2025 година, на седницата одржана на 29.05.2025 година, донесе

О Д Л У К А

за давање согласност за ангажирање на наставник за учество во повторна акредитација на студиска програма на
друга единица во рамки на Универзитетот „Св. Кирил и Методиј" во Скопје

1. Се прифаќа предлогот на Институтот за физика при Факултетот.

2. Се одобрува учество во повторна акредитација и вршење на високообразовна дејност на студиската програма по Ветеринарна медицина на англиски јазик на Факултетот за ветеринарна медицина – Скопје, за предметот Биофизика (**Biophysics),** во прв семестар, задолжителен предмет, фонд на часови 1+0+2 и 4 ЕКТС, на д-р Ристе Попески - Димовски, редовен професор на Институтот за физика при Факултетот.

3. Да се склучи договор со кој ќе се уредат условите и меѓусебните права и обврски, кои произлегуваат од извршувањето на работата од точка 2 од оваа одлука.

4. Одлуката стапува во сила со денот на нејзиното донесување.

О Б Р А З Л О Ж Е Н И Е

Наставно-научниот совет на врз основа на член 68, став 1, точка 25 од Статутот на Природно-математичкиот факултет – Скопје во состав на Универзитетот „Св. Кирил и Методиј“ во Скопје (Универзитетски гласник бр. 464/2019 и 464/2021- анекс), на седницата одржана на 29.05.2025 година, заради акредитација и вршење на високообразовна дејност на друга единица во рамки на Универзитетот, донесе одлука како во диспозитивот.

Д Е К А Н

Проф. д-р Даворин Трпески

ДОСТАВЕНО ДО:
- Архивата;
- Продекан за наставни и студентски прашања;
- Секретарот;
- Институтот за физика при Факултетот;
- Факултет за ветеринарна медицина - Скопје;
- Именуваниот;
- Персоналното досие и
- Раководителот на Одделението за општи и правни работи и библиотечно работење.

Изработил: Јадранка Стојчевска
Одобрил: Васка Маневска

УНИВЕРЗИТЕТ „СВ. КИРИЛ И МЕТОДИЈ“
ФИЛОЛОШКИ ФАКУЛТЕТ „БЛАЖЕ КОНЕСКИ“
СКОПЈЕ
Бул. Гоце Делчев бр. 9А 1000 Скопје
Република Северна Македонија
Деканат: +389 2 3240 401

Бр. 08-967/5
22-05-2025

Скопје

Република Северна Македонија
Универзитет Св. Кирил и Методиј во Скопје
Ветеринарна клиника во Скопје
30.5.2025
Број | Содржина
03 | 730

ДО
ФАКУЛТЕТ ЗА ВЕТЕРИНАРНА МЕДИЦИНА
СКОПЈЕ

Предмет: Доставување на Одлука за акредитација

Почитувани,

Во врска со вашето писмо бр. 03-520/2 од 23.4.2025 година доставено до Филолошкиот факултет „Блаже Конески“ во Скопје за акредитирање на студиската програма Ветеринарна медицина на англиски јазик на прв циклус студии, во прилог ви ја доставуваме Одлуката од Наставно-научниот совет на Факултетот со кој се дава согласност проф. д-р Милан Дамјаноски, редовен професор да учествуваат во ралиазација на акредитација по предметите Терминологија на англиски јазик 1 (изборен предмет) и Терминологија на англиски јазик 2 (изборен предмет) (Introduction to English Veterinary Terminology I and Introduction to English Veterinary Terminology II) на Вашиот факултет.

Прилог: Одлука бр. 08-967/4

Со почит,

Д Е К А Н
на Филолошкиот факултет
проф. д-р Владимир Мартиновски

Универзитет Св. Кирил и Методиј во Скопје * Република Северна Македонија * Филолошки факултет „Блаже Конески“ Скопје

Изработил:ГК
Одобрил:МШ

УНИВЕРЗИТЕТ „СВ.КИРИЛ И МЕТОДИЈ“
ФИЛОЛОШКИ ФАКУЛТЕТ „БЛАЖЕ КОНЕСКИ“
СКОПЈЕ
Бул. Гоце Делчев, бр.9а, 1000 Скопје,
Република Северна Македонија
Деканат: +389 2 3240 401

Бр. 08-967/4
22-05-2025
Скопје

Врз основа на член 110, 112, 113 и 173 од Законот за високото образование (Сл. весник на РМ бр. 82/2018, Сл. весник на РСМ бр. 178/2021 година и бр. 58/2024 година), Наставно-научниот совет на Филолошкиот факултетот „Блаже Конески“ во состав на Универзитетот „Св. Кирил и Методиј“ во Скопје, на својата 23. редовна седница одржана на 21.5.2025 година, ја донесе следнава

О Д Л У К А

за согласност за учество во реализација на студиската програма Ветеринарна медицина на англиски јазик на прв циклус студии на Факултетот за ветеринарна медицина во состав на Универзитетот „Св. Кирил и Методиј“ во Скопје.

Член 1

Наставно-научниот совет на Филолошкиот факултетот „Блаже Конески“ во состав на Универзитетот „Св. Кирил и Методиј“ во Скопје донесе Одлука за определување на наставен кадар што ќе изведува настава на прв циклус студии на студиската програма Ветеринарна медицина на англиски јазик на Факултетот за ветеринарна медицина во состав на Универзитетот „Св. Кирил и Методиј“ во Скопје.

Член 2

Наставен кадар што ќе биде ангажиран за изведување настава на прв циклус студии на студиската програма Ветеринарна медицина на англиски јазик е:

1. Проф. д-р Милан Дамјаноски по предметите Терминологија на англиски јазик 1 (изборен предмет) и Терминологија на англиски јазик 2 (изборен предмет) (Introduction to English Veterinary Terminology I and Introduction to English Veterinary Terminology II).

Член 3

Одлуката стапува во сила со денот на нејзиното донесување.

Скопје, 22.5.2025 година

Доставено до:
- Архивата на Филолошкиот факултетот „Блаже Конески“ во Скопје
- Факултетот за ветеринарна медицина во состав на Универзитетот „Св. Кирил и Методиј“ во Скопје.
- Проф. д-р Милан Дамјаноски

Д Е К А Н
на Филолошкиот факултет
проф. д-р Владимир Мартиновски

Република Северна Македонија
Универзитет „Св. КИРИЛ И МЕТОДИЈ“ во Скопје
ФАКУЛТЕТ ЗА ВЕТЕРИНАРНА МЕДИЦИНА во СКОПЈЕ
Примено: 11.06.2025
Орг. единица | Број | Прилог | Вредност
03 | 801

УНИВЕРЗИТЕТ "Св.КИРИЛ И МЕТОДИЈ"
ФАКУЛТЕТ ЗА ФИЗИЧКО ОБРАЗОВАНИЕ СПОРТ И ЗДРАВЈЕ
С К О П Ј Е
дел.бр. 0201-762/12 од 28.5.2025 година

Врз основа на член 110 и член 179 од Законот за високото образование (Законот за високото образование (Службен весник на Република Македонија бр. 82/2018 и Службен весник на Република Северна Македонија бр. 178/2021, 58/2024), член 72 од Статутот на Факултетот за физичко образование, спорт и здравје – Скопје во состав на Универзитетот „Св. Кирил и Методиј” во Скопје (Универзитетски гласник број 453/2019), Наставно-научниот совет на Факултетот за физичко образование спорт и здравје во Скопје, при Универзитетот „Св. Кирил и Методиј“ во Скопје, на седница одржана на 28.5.2025 година, ја донесе следната:

О Д Л У К А

за давање согласност за учество во реакредитација на студиска програма Ветринарна медицина на англиски јазик на Факултетот за ветеринарна медицина во состав Универзитетот „Св. Кирил и Методиј“ во Скопје

Член 1

Наставно-научниот совет донесе одлука за определување на наставен кадар што ќе изведува настава на студиската програма Ветринарна медицина, на англиски јазик на Факултетот за ветеринарна медицина во состав Универзитетот „Св. Кирил и Методиј“ во Скопје.

Член 2

Наставен кадар што ќе биде ангажиран за учесво во реакредитација на студиската програма по Ветринарна медицина, на англиски јазик на Факултетот за ветеринарна медицина во состав Универзитетот „Св. Кирил и Методиј“ во Скопје по предметот Спорт и здравје (Sport and health) во летен (II) семестар е: вонр.проф.д-р Сашо Тодоровски.

Член 3

Одлуката стапува на сила со денот на нејзиното донесување.

Скопје, 28.05.2025 година

Факултет за физичко образование, спорт и здравје – Скопје
Декан
Проф.д-р Влатко Неделковски

Доставено до:

- Архивата на факултетот
- Факултетот за ветеринарна медицина – Скопје

Република Северна Македонија
Универзитет СВ. КИРИЛ И МЕТОДИЈ во Скопје
ФАКУЛТЕТ ЗА ВЕТЕРИНАРНА МЕДИЦИНА во СКОПЈЕ
Бр. 03-847
18.06.2025 год.

Врз основа на член 61 став 1 точка 4 од Законот за високо образование (Службен весник на Република Македонија, бр.82/2018) ја давам следната

И З Ј А В А

за давање согласност за учество во изведување на настава по одредени предмети од студиската програма на интегрирани академски студии од прв и втор циклус Ветеринарна медицина на Англиски јазик

Јас, Милан Дамјаноски, избран во звање редовен професор и вработен на Филолошкиот факултет „Блаже Конески“ во Скопје при Универзитетот „Св. Кирил и Методиј“ во Скопје, давам согласност за учество во изведување на настава од Студиската програма на интегрирани студии од прв и втор циклус Ветеринарна медицина – англиски јазик, на Факултетот за ветеринарна медицина - Скопје, по наставниот предмет:

1. Introduction to English Veterinary Terminology I
2. Introduction to English Veterinary Terminology II

Скопје,
17.06.2025

Подносител на изјава

Врз основа на член 61 став 1 точка 4 од Законот за високо образование (Службен весник на Република Македонија, бр.82/2018) ја давам следната

И З Ј А В А

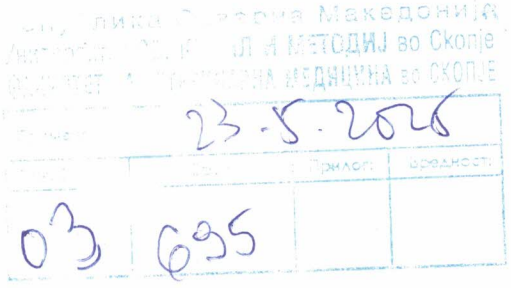
за давање согласност за учество во изведување на настава по одредени предмети од студиската програма на интегрирани академски студии од прв и втор циклус Ветеринарна медицина на Англиски јазик

Јас, Александар Додовски, избран во звање редовен професор и вработен на Факултетот за ветеринарна медицина-Скопје на Универзитетот „Св. Кирил и Методиј“ во Скопје, давам согласност за учество во изведување на настава од Студиската програма на интегрирани студии од прв и втор циклус Ветеринарна медицина – англиски јазик, на Факултетот за ветеринарна медицина - Скопје, по наставниот предмет:

1. Avian Diseases
2. Poultry Production Technology Processes
3. Husbandry and Diseases in Non-poultry Avian Species
4. Pet Bird Husbandry and Diseases

Скопје,

Подносител на изјава



Врз основа на член 61 став 1 точка 4 од Законот за високо образование (Службен весник на Република Македонија, бр.82/2018) ја давам следната

И З Ј А В А

за давање согласност за учество во изведување на настава по одредени предмети од студиската програма на интегрирани академски студии од прв и втор циклус Ветеринарна медицина на Англиски јазик

Јас, Александар Цветлковиќ, избран во звање вонреден професор и вработен на Факултетот за ветеринарна медицина-Скопје на Универзитетот „Св. Кирил и Методиј“ во Скопје, давам согласност за учество во изведување на настава од Студиската програма на интегрирани студии од прв и втор циклус Ветеринарна медицина – англиски јазик, на Факултетот за ветеринарна медицина - Скопје, по наставниот предмет:

1. Parasitology and Parasitic Diseases 1
2. Parasitology and Parasitic Diseases 2
3. Veterinary Entomology
4. Tropical Parasitic Diseases
5. Veterinary Clinical Parasitology
6. Parasitological Cases
7. Parasitology in Public Health

Скопје, 26.5.2025

Подносител на изјава

Република Северна Македонија
Универзитет СВ. КИРИЛ И МЕТОДИЈ во Скопје
ФАКУЛТЕТ ЗА ВЕТЕРИНАРНА МЕДИЦИНА во СКОПЈЕ

Примено: 26.5.2025			
Орг. ед. бр.	Број:	Прилог:	Вредност:
03	700		

Врз основа на член 61 став 1 точка 4 од Законот за високо образование (Службен весник на Република Македонија, бр.82/2018) ја давам следната

И З Ј А В А

за давање согласност за учество во изведување на настава по одредени предмети од студиската програма на интегрирани академски студии од прв и втор циклус Ветеринарна медицина на Англиски јазик

Јас, Бранко Атанасов, избран во звање редовен професор и вработен на Факултетот за ветеринарна медицина-Скопје на Универзитетот „Св. Кирил и Методиј“ во Скопје, давам согласност за учество во изведување на настава од Студиската програма на интегрирани студии од прв и втор циклус Ветеринарна медицина – англиски јазик, на Факултетот за ветеринарна медицина - Скопје, по наставните предмети:

1. Reproduction 1
2. Reproduction 2
3. Advanced Reproductive Endocrinology
4. Ultrasound Diagnostics of Reproductive Disorders
5. Advanced Andrology and Cryobiology

Скопје, Подносител на изјава

Република Северна Македонија
Универзитет „Св. Кирил и Методиј“ во Скопје
Факултет за ветеринарна медицина во Скопје
Примено: 26.5.2020
Орг. ед. 07 Број 701/2

Врз основа на член 61 став 1 точка 4 од Законот за високо образование (Службен весник на Република Македонија, бр.82/2018) ја давам следната

И З Ј А В А

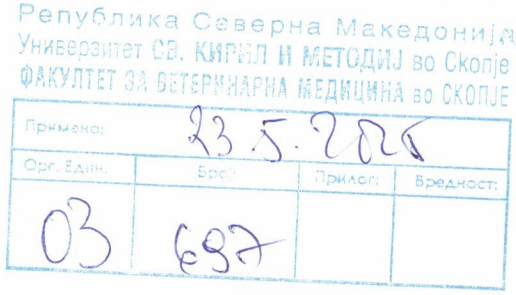
за давање согласност за учество во изведување на настава по одредени предмети од студиската програма на интегрирани академски студии од прв и втор циклус Ветеринарна медицина на Англиски јазик

Јас, Бранко Анѓеловски, избран во звање вонреден професор и вработен на Факултетот за ветеринарна медицина-Скопје на Универзитетот „Св. Кирил и Методиј“ во Скопје, давам согласност за учество во изведување на настава од Студиската програма на интегрирани студии од прв и втор циклус Ветеринарна медицина – англиски јазик, на Факултетот за ветеринарна медицина - Скопје, по наставниот предмет:

1. Swine Diseases

Скопје,

Подносител на изјава



Врз основа на член 61 став 1 точка 4 од Законот за високо образование (Службен весник на Република Македонија, бр.82/2018) ја давам следната

Република Северна Македонија
Универзитет Св. Кирил и Методиј во Скопје
ФАКУЛТЕТ ЗА ВЕТЕРИНАРНА МЕДИЦИНА во СКОПЈЕ
Примено: 26.5.2025
Орг. Един. | Број: 03 | 701/9 | Прилог: | Вредност:

И З Ј А В А

за давање согласност за учество во изведување на настава по одредени предмети од студиската програма на интегрирани академски студии од прв и втор циклус Ветеринарна медицина на Англиски јазик

Јас, Велимир Стојковски, избран во звање редовен проофесор и вработен на Факултетот за ветеринарна медицина-Скопје на Универзитетот „Св. Кирил и Методиј“ во Скопје, давам согласност за учество во изведување на настава од Студиската програма на интегрирани студии од прв и втор циклус Ветеринарна медицина – англиски јазик, на Факултетот за ветеринарна медицина - Скопје, по наставните предмети:

1. Cell Biology
2. Biochemistry
3. Clinical Biochemistry
4. Molecular Mechanisms of General Anesthesia
5. Biochemical Ecotoxicology

Скопје, 23.05.2025

Подносител на изјавата,

Врз основа на член 61 став 1 точка 4 од Законот за високо образование (Службен весник на Република Македонија, бр.82/2018) ја давам следната

И З Ј А В А

за давање согласност за учество во изведување на настава по одредени предмети од студиската програма на интегрирани академски студии од прв и втор циклус Ветеринарна медицина на Англиски јазик

Јас Владимир Петков, избран во звање редовен професор и вработен/а на Факултет за ветеринарна медицина - Скопје на Универзитетот „Св. Кирил и Методиј“ во Скопје, давам согласност за учество во изведување на настава од Студиската програма на интегрирани студии од прв и втор циклус Ветеринарна медицина – англиски јазик, на Факултетот за ветеринарна медицина - Скопје, по наставните предмети:

1. Animal Physiology 1
2. Animal Physiology 2
3. Exotic Animals Physiology
4. Comparative Physiology

Република Северна Македонија
Универзитет СВ. КИРИЛ И МЕТОДИЈ во Скопје
ФАКУЛТЕТ ЗА ВЕТЕРИНАРНА МЕДИЦИНА во СКОПЈЕ
Примено: 6.12.2024
Орг. един. | Број: 03 1444/14 | Прилог: | Вредност:

Скопје, 4.12.2024

Поднесител на изјава

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Врз основа на член 61 став 1 точка 4 од Законот за високо образование (Службен весник на Република Македонија, бр.82/2018) ја давам следната

И З Ј А В А

за давање согласност за учество во изведување на настава по одредени предмети од студиската програма на интегрирани академски студии од прв и втор циклус Ветеринарна медицина на Англиски јазик

Јас, Влатко Илиески, избран во звање редовен професор и вработен на Факултетот за ветеринарна медицина-Скопје на Универзитетот „Св. Кирил и Методиј“ во Скопје, давам согласност за учество во изведување на настава од Студиската програма на интегрирани студии од прв и втор циклус Ветеринарна медицина – англиски јазик, на Факултетот за ветеринарна медицина - Скопје, по наставните предмети:

1. Animal Anatomy 1
2. Animal Anatomy 2
3. Animal Clinical Anatomy
4. Animal Behavior and Welfare
5. Laboratory and Exotic Animal Anatomy and Welfare

Скопје, 05.06.2025 год

Подносител на изјава

Проф д-р Влатко Илиески

Република Северна Македонија
Универзитет СВ. КИРИЛ И МЕТОДИЈ во Скопје
ФАКУЛТЕТ ЗА ВЕТЕРИНАРНА МЕДИЦИНА во СКОПЈЕ
Примено: 26.5.2025
Орг. Един. | Број: 7011/190 | Прилог | Вредност

Република Северна Македонија
Универзитет „Св. Кирил и Методиј" во Скопје
ФАКУЛТЕТ ЗА ВЕТЕРИНАРНА МЕДИЦИНА - СКОПЈЕ
Примено: 10.06.2025
Орг. Един. | Број | Прилог | Вредност
03 | 795

Врз основа на член 61 став 1 точка 4 од Законот за високо образование (Службен весник на Република Македонија, бр.82/2018) ја давам следната

И З Ј А В А

за давање согласност за учество во изведување на настава по одредени предмети од студиската програма на интегрирани академски студии од прв и втор циклус Ветеринарна медицина на Англиски јазик

Јас, Дине Митров, избран во звање редовен професор и вработен на Факултетот за ветеринарна медицина-Скопје на Универзитетот „Св. Кирил и Методиј" во Скопје, давам согласност за учество во изведување на настава од Студиската програма на интегрирани студии од прв и втор циклус Ветеринарна медицина – англиски јазик, на Факултетот за ветеринарна медицина - Скопје, по наставните предмети:

1. Visual Diagnostic Methods and Physical Therapy
2. Clinical and Laboratory Diagnostics in Farm Animals
3. Internal Diseases in Farm Animals 1
4. Internal Diseases in Farm Animals 2

Скопје,

Подносител на изјава

Врз основа на член 61 став 1 точка 4 од Законот за високо образование (Службен весник на Република Македонија, бр.82/2018) ја давам следната

И З Ј А В А

за давање согласност за учество во изведување на настава по одредени предмети од студиската програма на интегрирани академски студии од прв и втор циклус Ветеринарна медицина на Англиски јазик

Јас, Елена Атанаскова Петров, избрана во звање вонреден професор и вработена на Факултетот за ветеринарна медицина-Скопје на Универзитетот „Св. Кирил и Методиј" во Скопје, давам согласност за учество во изведување на настава од Студиската програма на интегрирани студии од прв и втор циклус Ветеринарна медицина – англиски јазик, на Факултетот за ветеринарна медицина - Скопје, по наставниот предмет:

1. Clinical and Laboratory Diagnostics in Companion Animals and Equines
2. Visual Diagnostic Methods and Physical Therapy
3. Internal Diseases of Small Animals and Equids 1
4. Internal Diseases of Small Animals and Equids 2
5. Cynology
6. Clinical Nutrition in Dogs and Cats
7. Changes in Laboratory Profiles in Companion Animal Diseases
8. Veterinary Dentistry in Dogs and Cats

Скопје,

Подносител на изјава

Република Северна Македонија
Универзитет Св. Кирил и Методиј во Скопје
Факултет за ветеринарна медицина во Скопје
26.5.2025
Прилог: 709
Вредност: 12

Врз основа на член 61 став 1 точка 4 од Законот за високо образование (Службен весник на Република Македонија, бр.82/2018) ја давам следната

И З Ј А В А

за давање согласност за учество во изведување на настава по одредени предмети од студиската програма на интегрирани академски студии од прв и втор циклус Ветеринарна медицина на Англиски јазик

Јас, Елена Давитковска, избран во звање редовен професор и вработена на Факултет за ветеринарна медицина - Скопје на Универзитетот „Св. Кирил и Методиј“ во Скопје, давам согласност за учество во изведување на настава од Студиската програма на интегрирани студии од прв и втор циклус Ветеринарна медицина – англиски јазик, на Факултетот за ветеринарна медицина - Скопје, по наставните предмети:

1. Veterinary Administrative Legislation
2. Administrative Procedure in Veterinary Activities

Република Северна Македонија
Универзитет [illegible] во Скопје
ФАКУЛТЕТ ЗА [illegible] СКОПЈЕ
Примено: 6.12.2024
Орг. Един. 03 1444/15

Скопје, 6.12.2024 година

Подносител на изјава

Врз основа на член 61 став 1 точка 4 од Законот за високо образование (Службен весник на Република Македонија, бр.82/2018) ја давам следната

И З Ј А В А

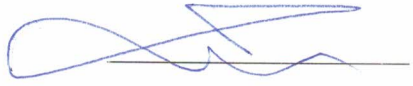
за давање согласност за учество во изведување на настава по одредени предмети од студиската програма на интегрирани академски студии од прв и втор циклус Ветеринарна медицина на Англиски јазик

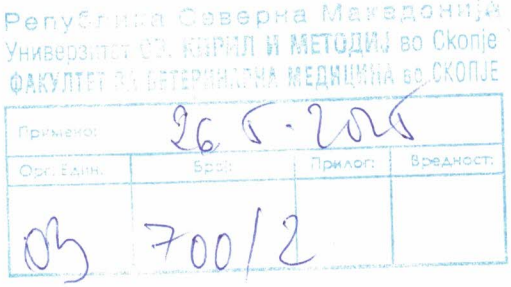
Јас, Зехра Хајрулаи Муслиу, избрана во звање редовен професор и вработена на Факултетот за ветеринарна медицина-Скопје на Универзитетот „Св. Кирил и Методиј“ во Скопје, давам согласност за учество во изведување на настава од Студиската програма на интегрирани студии од прв и втор циклус Ветеринарна медицина – англиски јазик, на Факултетот за ветеринарна медицина - Скопје, по наставните предмети:

1. Chemistry
2. Analytical Chemistry of Food
3. Chemistry of Natural Compounds
4. Biochemical Ecotoxicology
5. Chemistry of Food Quality
6. Residues and Contaminants in Food

Скопје,

Подносител на изјава





Врз основа на член 61 став 1 точка 4 од Законот за високо образование (Службен весник на Република Македонија, бр.82/2018) ја давам следната

И З Ј А В А

за давање согласност за учество во изведување на настава по одредени предмети од студиската програма на интегрирани академски студии од прв и втор циклус Ветеринарна медицина на Англиски јазик

Јас, Ивица Ѓуровски, избран во звање вонреден професор и вработен на Факултетот за ветеринарна медицина-Скопје на Универзитетот „Св. Кирил и Методиј" во Скопје, давам согласност за учество во изведување на настава од Студиската програма на интегрирани студии од прв и втор циклус Ветеринарна медицина – англиски јазик, на Факултетот за ветеринарна медицина - Скопје, по наставниот предмет:

1. Basic Pathology
2. Special Veterinary Pathology
3. Forensic Veterinary Medicine and Veterinary Ethics
4. Oncology
5. Dermatopathology

Скопје,

Подносител на изјава

Ѓуровски

Република Северна Македонија
Универзитет СВ. КИРИЛ И МЕТОДИЈ во Скопје
ФАКУЛТЕТ ЗА ВЕТЕРИНАРНА МЕДИЦИНА во СКОПЈЕ
Бр. 03 - 704 / 5
26. 5. 2025 год.

Врз основа на член 61 став 1 точка 4 од Законот за високо образование (Службен весник на Република Македонија, бр.82/2018) ја давам следната

И З Ј А В А

за давање согласност за учество во изведување на настава по одредени предмети од студиската програма на интегрирани академски студии од прв и втор циклус Ветеринарна медицина на Англиски јазик

Јас Игор Цаповски, избран во звање вонреден професор и вработен/а на Факултет за ветеринарна медицина - Скопје на Универзитетот „Св. Кирил и Методиј“ во Скопје, давам согласност за учество во изведување на настава од Студиската програма на интегрирани студии од прв и втор циклус Ветеринарна медицина – англиски јазик, на Факултетот за ветеринарна медицина - Скопје, по наставните предмети:

1. Clinical and laboratory diagnostics in farm animals
2. Internal diseases in farm animals
3. Clinical practice: farm animals

Скопје, 06.12.2024

Подносител на изјава

Република Северна Македонија
Универзитет Св. Кирил и Методиј во Скопје
Факултет за ветеринарна медицина во Скопје
Примено: 6.12.2024
Орг. Един. 03 1444/20

Врз основа на член 61 став 1 точка 4 од Законот за високо образование (Службен весник на Република Македонија, бр.82/2018) ја давам следната

И З Ј А В А

за давање согласност за учество во изведување на настава по одредени предмети од студиската програма на интегрирани академски студии од прв и втор циклус Ветеринарна медицина на Англиски јазик

Јас, Ирена Целеска, избрана во звање редовен професор и вработена на Факултетот за ветеринарна медицина-Скопје на Универзитетот „Св. Кирил и Методиј“ во Скопје, давам согласност за учество во изведување на настава од Студиската програма на интегрирани студии од прв и втор циклус Ветеринарна медицина – англиски јазик, на Факултетот за ветеринарна медицина - Скопје, по наставните предмети:

1. Pathophysiology 1
2. Pathophysiology 2
3. Veterinary Hematology
4. Basis of Cytological Diagnostics
5. Clinical Pathophysiology

Република Северна Македонија
Универзитет „Св. Кирил и Методиј“ во Скопје
ФАКУЛТЕТ ЗА ВЕТЕРИНАРНА МЕДИЦИНА во СКОПЈЕ

Примено: 27.05.2024			
Орг. Един.	Број:	Прилог:	Вредност:
03	701/17		

Скопје,
26.05.2024

Подносител на изјава

Врз основа на член 61 став 1 точка 4 од Законот за високо образование (Службен весник на Република Македонија, бр.82/2018) ја давам следната

И З Ј А В А

за давање согласност за учество во изведување на настава по одредени предмети од студиската програма на интегрирани академски студии од прв и втор циклус Ветеринарна медицина на Англиски јазик

Јас, Игор Улчар, избран во звање редовен професор и вработен на Факултетот за ветеринарна медицина-Скопје на Универзитетот „Св. Кирил и Методиј“ во Скопје, давам согласност за учество во изведување на настава од Студиската програма на интегрирани студии од прв и втор циклус Ветеринарна медицина – англиски јазик, на Факултетот за ветеринарна медицина - Скопје, по наставните предмети:

1. Pathophysiology 1
2. Pathophysiology 2
3. Veterinary Hematology
4. Basis of Cytological Diagnostics
5. Clinical Pathophysiology

Република Северна Македонија
Универзитет Св. Кирил и Методиј во Скопје
ФАКУЛТЕТ ЗА ВЕТЕРИНАРНА МЕДИЦИНА во СКОПЈЕ
Примено: 27.5.2025
Орг. ед. | Број | Прилог | Вред.
03 | 701/6

Скопје, 26.5.2025

Подносител на изјава

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Врз основа на член 61 став 1 точка 4 од Законот за високо образование (Службен весник на Република Македонија, бр.82/2018) ја давам следната

И З Ј А В А

за давање согласност за учество во изведување на настава по одредени предмети од студиската програма на интегрирани академски студии од прв и втор циклус Ветеринарна медицина на Англиски јазик

Јас **проф. д-р Искра Цветковиќ**, избран во звање **вонреден професор** и вработен/а на Факултет за ветеринарна медицина - Скопје на Универзитетот „Св. Кирил и Методиј“ во Скопје, давам согласност за учество во изведување на настава од Студиската програма на интегрирани студии од прв и втор циклус Ветеринарна медицина – англиски јазик, на Факултетот за ветеринарна медицина - Скопје, по наставните предмети:

1. Microbiology 1
2. Microbiology 2
3. Veterinary immunology
4. Bacterial resistance to antibiotics
5. Case studies in clinical veterinary immunology
6. Case studies in clinical veterinary microbiology
7. Veterinary vaccinology

Република Северна Македонија
Универзитет СВ. КИРИЛ И МЕТОДИЈ во Скопје
ФАКУЛТЕТ ЗА ВЕТЕРИНАРНА МЕДИЦИНА во СКОПЈЕ
Број: 6.12.2024
03 1444 / 18

Скопје, 6.12.2024

Подносител на изјава

Врз основа на член 61 став 1 точка 4 од Законот за високо образование (Службен весник на Република Македонија, бр.82/2018) ја давам следната

И З Ј А В А

за давање согласност за учество во изведување на настава по одредени предмети од студиската програма на интегрирани академски студии од прв и втор циклус Ветеринарна медицина на Англиски јазик

Јас **д-р Јована Стефановска**, избран во звање **редовен професор** и вработена на Факултет за ветеринарна медицина - Скопје на Универзитетот „Св. Кирил и Методиј“ во Скопје, давам согласност за учество во изведување на настава од Студиската програма на интегрирани студии од прв и втор циклус Ветеринарна медицина – англиски јазик, на Факултетот за ветеринарна медицина - Скопје, по наставните предмети:

1. Parasitology and parasitic diseases 1
2. Parasitology and parasitic diseases 2
3. Parasitology in public health
4. Tropical parasitic diseases
5. Veterinary clinical parasitology
6. Veterinary entomology
7. Parasitological cases

Скопје, 4.12.2024 година

Подносител на изјава

Република Северна Македонија
Универзитет „Св. Кирил и Методиј“ во Скопје
Факултет за ветеринарна медицина во Скопје
Примено: 4.12.2024
Орг. ед. 03 Број 1444 Прилог 7 Вредност

Врз основа на член 61 став 1 точка 4 од Законот за високо образование (Службен весник на Република Македонија, бр.82/2018) ја давам следната

И З Ј А В А

за давање согласност за учество во изведување на настава по одредени предмети од студиската програма на интегрирани академски студии од прв и втор циклус Ветеринарна медицина на Англиски јазик

Јас, Ксенија Илиевска, избрана во звање вонреден професор и вработена на Факултетот за ветеринарна медицина-Скопје на Универзитетот „Св. Кирил и Методиј“ во Скопје, давам согласност за учество во изведување на настава од Студиската програма на интегрирани студии од прв и втор циклус Ветеринарна медицина – англиски јазик, на Факултетот за ветеринарна медицина - Скопје, по наставните предмети:

1. Anesthesia and Intensive Care
2. General Surgery
3. Soft Tissue Surgery
4. Orthopedics and Rehabilitation
5. Ophthalmology
6. Molecular Mechanisms of General Anesthesia
7. Veterinary Dentistry in Dogs and Cats
8. Companion Animal Anesthesia and Analgesia Techniques Under Specific Surgical Conditions

Скопје,

Подносител на изјава

Република Северна Македонија
Универзитет Св. КИРИЛ И МЕТОДИЈ во Скопје
ФАКУЛТЕТ ЗА ВЕТЕРИНАРНА МЕДИЦИНА во СКОПЈЕ

Примено: 26.5.2020			
Орг. Един.	Број	Прилог:	Вредност:
03	709/4		

Врз основа на член 61 став 1 точка 4 од Законот за високо образование (Службен весник на Република Македонија, бр.82/2018) ја давам следната

ИЗЈАВА

за давање согласност за учество во изведување на настава по одредени предмети од студиската програма на интегрирани академски студии од прв и втор циклус Ветеринарна медицина на Англиски јазик

Јас, Лазо Пендовски, избран во звање редовен професор и вработен на Факултетот за ветеринарна медицина-Скопје на Универзитетот „Св. Кирил и Методиј“ во Скопје, давам согласност за учество во изведување на настава од Студиската програма на интегрирани студии од прв и втор циклус Ветеринарна медицина – англиски јазик, на Факултетот за ветеринарна медицина - Скопје, по наставниот предмет:

1. Animal Anatomy 1
2. Animal Anatomy 2
3. Animal Clinical Anatomy
4. Visual Diagnostic Methods and Physical Therapy
5. Domestic Pet Computed Tomography

Скопје,

Подносител на изјава

Lazo Pendovski

Digitally signed by Lazo Pendovski
DN: c=MK, 2.5.4.97=VATMK-4030979223120, o=UNIVERZITET SV KIRIL I METODIJ REKTORAT, ou=UNIVERZITET SV KIRIL I METODIJ REKTORAT,4030979223120, givenName=Lazo, sn=Pendovski, serialNumber=CRT3701612, cn=Lazo Pendovski
Date: 2025.05.23 09:14:05 +02'00'

Република Северна Македонија
Универзитет СВ. КИРИЛ И МЕТОДИЈ во Скопје
ФАКУЛТЕТ ЗА ВЕТЕРИНАРНА МЕДИЦИНА во СКОПЈЕ

Примено: 26.5.2025			
Орг. Един.	Бр.	Прилог:	Вредност:
07	709	13	

Врз основа на член 61 став 1 точка 4 од Законот за високо образование (Службен весник на Република Македонија, бр.82/2018) ја давам следната

И З Ј А В А

за давање согласност за учество во изведување на настава по одредени предмети од студиската програма на интегрирани академски студии од прв и втор циклус Ветеринарна медицина на Англиски јазик

Јас Мартин Николовски, избран во звање доцент и вработен/а на Факултет за ветеринарна медицина - Скопје на Универзитетот „Св. Кирил и Методиј“ во Скопје, давам согласност за учество во изведување на настава од Студиската програма на интегрирани студии од прв и втор циклус Ветеринарна медицина – англиски јазик, на Факултетот за ветеринарна медицина - Скопје, по наставните предмети:

1. Animal Physiology 1
2. Animal Physiology 2
3. Exotic Animals Physiology
4. Comparative Physiology

Република Северна Македонија
Универзитет „Св. КИРИЛ И МЕТОДИЈ“ во Скопје
ФАКУЛТЕТ ЗА ВЕТЕРИНАРНА МЕДИЦИНА во СКОПЈЕ

Примено: 6.12.2024			
Орг. Е.	Број:	Прилог:	Вредност:
03	1444		

Скопје, 4.12.2024

Подносител на изјава

Мартин

Врз основа на член 61 став 1 точка 4 од Законот за високо образование (Службен весник на Република Македонија, бр.82/2018) ја давам следната

И З Ј А В А

за давање согласност за учество во изведување на настава по одредени предмети од студиската програма на интегрирани академски студии од прв и втор циклус Ветеринарна медицина на Англиски јазик

Јас, Мирко Проданов, избран во звање вонреден проофесор и вработен на Факултетот за ветеринарна медицина-Скопје на Универзитетот „Св. Кирил и Методиј“ во Скопје, давам согласност за учество во изведување на настава од Студиската програма на интегрирани студии од прв и втор циклус Ветеринарна медицина – англиски јазик, на Факултетот за ветеринарна медицина - Скопје, по наставните предмети:

1. Meat Hygiene and Technology
2. Milk Hygiene and Technology
3. Meat, Fish, Eggs and Honey – Hygiene and Technology
4. Food Safety and Veterinary Public Health
5. Veterinary Inspection
6. Food Microbiology
7. Current Food Safety Systems

Скопје,

Поднесител на изјава

Република Северна Македонија
Универзитет „Св. Кирил и Методиј“ во Скопје
ФАКУЛТЕТ ЗА ВЕТЕРИНАРНА МЕДИЦИНА во СКОПЈЕ

Примено: 26.5.2025			
Орг. ед. бр.	Бр.	Прилог	Вредност
07	7003		

Врз основа на член 61 став 1 точка 4 од Законот за високо образование (Службен весник на Република Македонија, бр.82/2018) ја давам следната

И З Ј А В А

за давање согласност за учество во изведување на настава по одредени предмети од студиската програма на интегрирани академски студии од прв и втор циклус Ветеринарна медицина на Англиски јазик

Јас, Мирослав Ќосевски, избран во звање доцент и вработен на Факултетот за ветеринарна медицина-Скопје на Универзитетот „Св. Кирил и Методиј“ во Скопје, давам согласност за учество во изведување на настава од Студиската програма на интегрирани студии од прв и втор циклус Ветеринарна медицина – англиски јазик, на Факултетот за ветеринарна медицина - Скопје, по наставниот предмет:

1. Animal Hygiene 1
2. Animal Hygiene 2
3. Animal Welfare and Behavior
4. Environmental Protection
5. Biosecurity in Animal Husbandry and Veterinary Medicine
6. Precision Agriculture and Veterinary Medicine
7. Measuring Animal Behavior

Скопје, 26.05.2025

Подносител на изјава

Република Северна Македонија
Универзитет Св. КИРИЛ И МЕТОДИЈ во Скопје
ФАКУЛТЕТ ЗА ВЕТЕРИНАРНА МЕДИЦИНА во СКОПЈЕ

Примено: 26.5.2025			
Орг. единица:	Број:	Прилог:	Вредност:
03	701	1/4	

Врз основа на член 61 став 1 точка 4 од Законот за високо образование (Службен весник на Република Македонија, бр.82/2018) ја давам следната

И З Ј А В А

за давање согласност за учество во изведување на настава по одредени предмети од студиската програма на интегрирани академски студии од прв и втор циклус Ветеринарна медицина на Англиски јазик

Јас, Пламен Тројачанец, избран во звање редовен професор и вработен на Факултетот за ветеринарна медицина-Скопје на Универзитетот „Св. Кирил и Методиј“ во Скопје, давам согласност за учество во изведување на настава од Студиската програма на интегрирани студии од прв и втор циклус Ветеринарна медицина – англиски јазик, на Факултетот за ветеринарна медицина - Скопје, по наставните предмети:

1. Anesthesia and Intensive Care
2. General Surgery
3. Soft Tissue Surgery
4. Orthopedics and Rehabilitation
5. Ophthalmology
6. Communication in Veterinary Practice
7. Selected Techniques for Surgical Fracture Reduction
8. Surgical Skin Reconstruction Techniques

Скопје,

Подносител на изјава

_____

Република Северна Македонија
Универзитет „Св. Кирил и Методиј“ во Скопје
Факултет за ветеринарна медицина во Скопје

Примено: 26.5.2026			
Орг. Бр.	Бр.	Прилог:	Вредност:
03	709		

Врз основа на член 61 став 1 точка 4 од Законот за високо образование (Службен весник на Република Македонија, бр.82/2018) ја давам следната

И З Ј А В А

за давање согласност за учество во изведување на настава по одредени предмети од студиската програма на интегрирани академски студии од прв и втор циклус Ветеринарна медицина на Англиски јазик

Јас Ристо Узунов, избран во звање доцент и вработен/а на Факултет за ветеринарна медицина - Скопје на Универзитетот „Св. Кирил и Методиј“ во Скопје, давам согласност за учество во изведување на настава од Студиската програма на интегрирани студии од прв и втор циклус Ветеринарна медицина – англиски јазик, на Факултетот за ветеринарна медицина - Скопје, по наставните предмети:

1. Analytical chemistry of food (Аналитичка хемија на храна)
2. Chemistry of food quality (Хемија на квалитет на храна)
3. Residues and contaminants in food (Остатоци и контаминенти во храната)
4. Chemistry of natural compounds (Хемија на природни соединенија)
5. Ecotoxicology (Екотоксикологија)

Скопје, (04.12.2024)

Подносителот на изјава

Република Северна Македонија
Универзитет „Св. Кирил и Методиј“ во Скопје
Факултет за ветеринарна медицина во Скопје
Примено: 4.12.2024
Орг. ед. | Бр. | Прилог | Вредност
03 | 1444 | /0

Врз основа на член 61 став 1 точка 4 од Законот за високо образование (Службен весник на Република Македонија, бр.82/2018) ја давам следната

И З Ј А В А

за давање согласност за учество во изведување на настава по одредени предмети од студиската програма на интегрирани академски студии од прв и втор циклус Ветеринарна медицина на Англиски јазик

Јас, Ромел Велев, избран во звање редовен професор и вработен на Факултетот за ветеринарна медицина-Скопје на Универзитетот „Св. Кирил и Методиј“ во Скопје, давам согласност за учество во изведување на настава од Студиската програма на интегрирани студии од прв и втор циклус Ветеринарна медицина – англиски јазик, на Факултетот за ветеринарна медицина - Скопје, по наставните предмети:

1. Nutritious, Medicinal and Poisonous plants
2. General Pharmacology
3. Special Pharmacology
4. Veterinary Toxicology
5. Rational Application of Antimicrobial Drugs
6. Clinical Pharmacology
7. Poisonous Plant Toxicology

Скопје,
26.05.2025

Подносител на изјава

Република Северна Македонија
Универзитет СВ. КИРИЛ И МЕТОДИЈ во Скопје
ФАКУЛТЕТ ЗА ВЕТЕРИНАРНА МЕДИЦИНА во СКОПЈЕ

Примено: 26. 5. 2025			
Орг. Един.	Бр.:	Прилог:	Вредност:
05	701/10		

Република Северна Македонија
Универзитет „Св. Кирил и Методиј" во Скопје
ФАКУЛТЕТ ЗА ВЕТЕРИНАРНА МЕДИЦИНА во СКОПЈЕ
Примено: 10.06.2025
Орг. Един. 03 798

Врз основа на член 64 став 1 точка 4 од Законот за високо образование (Службен весник на Република Македонија, бр.82/2018) ја давам следната

И З Ј А В А

за давање согласност за учество во изведување на настава по одредени предмети од студиската програма на интегрирани академски студии од прв и втор циклус Ветеринарна медицина на Англиски јазик

Јас, Славчо Мреношки, избран во звање редовен професор и вработен на Факултетот за ветеринарна медицина-Скопје на Универзитетот „Св. Кирил и Методиј" во Скопје, давам согласност за учество во изведување на настава од Студиската програма на интегрирани студии од прв и втор циклус Ветеринарна медицина – англиски јазик, на Факултетот за ветеринарна медицина - Скопје, по наставните предмети:

1. Microbiology 1
2. Microbiology 2
3. Veterinary Immunology
4. Veterinary Vaccinology
5. Case Studies in Veterinary Clinical Immunology
6. Case Studies in Veterinary Clinical Microbiology
7. Bacterial Resistance to Antibiotics

Скопје, 10/06/2025

Подносител на изјава

Проф. Др Славчо Мреношки, ДВМ

Врз основа на член 61 став 1 точка 4 од Законот за високо образование (Службен весник на Република Македонија, бр.82/2018) ја давам следната

И З Ј А В А

за давање согласност за учество во изведување на настава по одредени предмети од студиската програма на интегрирани академски студии од прв и втор циклус Ветеринарна медицина на Англиски јазик

Јас, Трпе Ристоски, избран во звање редовен професор и вработен на Факултетот за ветеринарна медицина-Скопје на Универзитетот „Св. Кирил и Методиј“ во Скопје, давам согласност за учество во изведување на настава од Студиската програма на интегрирани студии од прв и втор циклус Ветеринарна медицина – англиски јазик, на Факултетот за ветеринарна медицина - Скопје, по наставниот предмет:

1. Basic Pathology
2. Special Veterinary Pathology
3. Forensic Veterinary Medicine and Veterinary Ethics
4. Oncology
5. Dermatopathology

Скопје,

Подносител на изјава

Република Северна Македонија
Универзитет Св. Кирил и Методиј во Скопје
ФАКУЛТЕТ ЗА ВЕТЕРИНАРНА МЕДИЦИНА во СКОПЈЕ
Примено: 2.6.2025
Орг. Ед. бр. | Бр. | Прилози | Вредност
03 | 701 | 14

Врз основа на член 61 став 1 точка 4 од Законот за високо образование (Службен весник на Република Македонија, бр.82/2018) ја давам следната

ИЗЈАВА

за давање согласност за учество во изведување на настава по одредени предмети од студиската програма на интегрирани академски студии од прв и втор циклус Ветеринарна медицина на Англиски јазик

Јас, Флорина Поповска Перчиниќ, избран во звање редовен проофесор и вработена на Факултетот за ветеринарна медицина-Скопје на Универзитетот „Св. Кирил и Методиј“ во Скопје, давам согласност за учество во изведување на настава од Студиската програма на интегрирани студии од прв и втор циклус Ветеринарна медицина – англиски јазик, на Факултетот за ветеринарна медицина - Скопје, по наставните предмети:

1. Histology and Embryology 1
2. Histology and Embryology 2

Скопје,

Подносител на изјава



Република Северна Македонија
Универзитет СВ. КИРИЛ И МЕТОДИЈ во Скопје
ФАКУЛТЕТ ЗА ВЕТЕРИНАРНА МЕДИЦИНА во СКОПЈЕ

Примено: 26-5-2025			
Орг. Ед.	Број	Прилог	Вред.
03	702		

Република Северна Македонија
Универзитет СВ. КИРИЛ И МЕТОДИЈ во Скопје
ФАКУЛТЕТ ЗА ВЕТЕРИНАРНА МЕДИЦИНА во СКОПЈЕ
Примено: 06.05.2025
Орг. Број 03 780

Врз основа на член 61 став 1 точка 4 од Законот за високо образование (Службен весник на Република Македонија, бр.82/2018) ја давам следната

ИЗЈАВА

за давање согласност за учество во изведување на настава по одредени предмети од студиската програма на интегрирани академски студии од прв и втор циклус Ветеринарна медицина на Англиски јазик

Јас, Кирил Крстевски, избран во звање редовен професор и вработен на Факултетот за ветеринарна медицина-Скопје на Универзитетот „Св. Кирил и Методиј“ во Скопје, давам согласност за учество во изведување на настава од Студиската програма на интегрирани студии од прв и втор циклус Ветеринарна медицина – англиски јазик, на Факултетот за ветеринарна медицина - Скопје, по наставниот предмет:

1. Infectious Diseases in Domestic Animals 1
2. Infectious Diseases in Domestic Animals 2
3. Veterinary Epidemiology

Скопје, 28.05.2025 година

Подносител на изјава

Проф. д-р Кирил Крстевски

Република Северна Македонија
Универзитет „Св. Кирил и Методиј“ во Скопје
ФАКУЛТЕТ ЗА ВЕТЕРИНАРНА МЕДИЦИНА - СКОПЈЕ
Примено: 10.06.2025
Орг. ед. 03 788

Врз основа на член 61 став 1 точка 4 од Законот за високо образование (Службен весник на Република Македонија, бр.82/2018) ја давам следната

И З Ј А В А

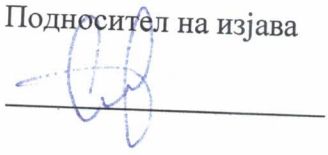
за давање согласност за учество во изведување на настава по одредени предмети од студиската програма на интегрирани академски студии од прв и втор циклус Ветеринарна медицина на Англиски јазик

Јас, Благица Сековска, избрана во звање редовен професор и вработена на Факултетот за ветеринарна медицина-Скопје на Универзитетот „Св. Кирил и Методиј“ во Скопје, давам согласност за учество во изведување на настава од Студиската програма на интегрирани студии од прв и втор циклус Ветеринарна медицина – англиски јазик, на Факултетот за ветеринарна медицина - Скопје, по наставните предмети:

1. Rural Economics
2. Communication in Veterinary Practice
3. Basic Management and Management of Veterinary Practice
4. Green Economics and Sustainable Development
5. Economics and Organization in Livestock Production
6. Marketing in Veterinary Practice
7. Animal Product Supply Chain Management

Скопје,

Подносител на изјава



Република Северна Македонија
Универзитет „Св. Кирил и Методиј" во Скопје
ФАКУЛТЕТ ЗА ВЕТЕРИНАРНА МЕДИЦИНА во СКОПЈЕ
Примено: 10.06.2025
Орг. Ед. Број Прилог Вредност
03 787

Врз основа на член 61 став 1 точка 4 од Законот за високо образование (Службен весник на Република Македонија, бр.82/2018) ја давам следната

И З Ј А В А

за давање согласност за учество во изведување на настава по одредени предмети од студиската програма на интегрирани академски студии од прв и втор циклус Ветеринарна медицина на Англиски јазик

Јас, Василка Попоска Треневска избрана во звање редовен професор и вработенана Факултетот за ветеринарна медицина-Скопје на Универзитетот „Св. Кирил и Методиј" во Скопје, давам согласност за учество во изведување на настава од Студиската програма на интегрирани студии од прв и втор циклус Ветеринарна медицина – англиски јазик, на Факултетот за ветеринарна медицина - Скопје, по наставниот предмет:

1. Biostatistics

Скопје,

Подносител на изјава

ФАКУЛТЕТ ЗА ВЕТЕРИНАРНА МЕДИЦИНА во СКОПЈЕ
Примено: 11.06.2025
Орг. Единица | Број | Прилог | Вредност
03 804

Врз основа на член 61 став 1 точка 4 од Законот за високо образование (Службен весник на Република Македонија, бр.82/2018) ја давам следната

И З Ј А В А

за давање согласност за учество во изведување на настава по одредени предмети од студиската програма на интегрирани академски студии од прв и втор циклус Ветеринарна медицина на Англиски јазик

Јас, Павле Секуловски, избран во звање редовен професор и вработен на Факултетот за ветеринарна медицина-Скопје на Универзитетот „Св. Кирил и Методиј“ во Скопје, давам согласност за учество во изведување на настава од Студиската програма на интегрирани студии од прв и втор циклус Ветеринарна медицина – англиски јазик, на Факултетот за ветеринарна медицина - Скопје, по наставните предмети:

1. Meat Hygiene and Technology
2. Milk Hygiene and Technology
3. Meat, Fish, Eggs and Honey – Hygiene and Technology
4. Food Safety and Veterinary Public Health
5. Veterinary Inspection
6. Food Microbiology
7. Current Food Safety Systems

Скопје, 10.06.2025

Подносител на изјава

_____

Република Северна Македонија
Универзитет „Св. Кирил и Методиј“ во Скопје
ФАКУЛТЕТ ЗА ВЕТЕРИНАРНА МЕДИЦИНА во СКОПЈЕ

Примено: 11.06.2025			
Орг. Ед.		Прилог	Вредност
03	803		

Врз основа на член 61 став 1 точка 4 од Законот за високо образование (Службен весник на Република Македонија, бр.82/2018) ја давам следната

И З Ј А В А

за давање согласност за учество во изведување на настава по одредени предмети од студиската програма на интегрирани академски студии од прв и втор циклус Ветеринарна медицина на Англиски јазик

Јас, Сашо Тодоровски, избран во звање вонреден професор и вработен на Факултет за физичко образование, спорт и здравје на Универзитетот „Св. Кирил и Методиј“ во Скопје, давам согласност за учество во изведување на настава од Студиската програма на интегрирани студии од прв и втор циклус Ветеринарна медицина – англиски јазик, на Факултетот за ветеринарна медицина - Скопје, по наставниот предмет:

1. Sport and Health

Скопје, 14.05.25

Подносител на изјава

Универзитет „Св. Кирил и Методиј“ во Скопје
ФАКУЛТЕТ ЗА ВЕТЕРИНАРНА МЕДИЦИНА во СКОПЈЕ
Примено: 11.06.2025
Орг. Един. | Бро. | Прилог | Вредност
03-802

Врз основа на член 61 став 1 точка 4 од Законот за високо образование (Службен весник на Република Македонија, бр.82/2018) ја давам следната

И З Ј А В А

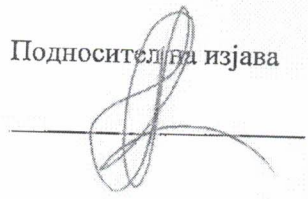
за давање согласност за учество во изведување на настава по одредени предмети од студиската програма на интегрирани академски студии од прв и втор циклус Ветеринарна медицина на Англиски јазик

Јас, Ристе Попески Димовски, избран во звање редовен проофесор и вработен на Природно-математичкиот факултет-Скопје на Универзитетот „Св. Кирил и Методиј“ во Скопје, давам согласност за учество во изведување на настава од Студиската програма на интегрирани студии од прв и втор циклус Ветеринарна медицина – англиски јазик, на Факултетот за ветеринарна медицина - Скопје, по наставниот предмет:

1. Biophysics

Скопје,

Подносител на изјава



Република Северна Македонија
Универзитет СВ. КИРИЛ И МЕТОДИЈ во Скопје
ФАКУЛТЕТ ЗА ВЕТЕРИНАРНА МЕДИЦИНА во СКОПЈЕ
Бр. 03-814
12.06 2025 год.

Врз основа на член 61 став 1 точка 4 од Законот за високо образование (Службен весник на Република Македонија, бр.82/2018) ја давам следната

ИЗЈАВА

за давање согласност за учество во изведување на настава по одредени предмети од студиската програма на интегрирани академски студии од прв и втор циклус Ветеринарна медицина на Англиски јазик

Јас, Никола Адамов, избран во звање вонреден проофесор и вработен на Факултетот за ветеринарна медицина-Скопје на Универзитетот „Св. Кирил и Методиј“ во Скопје, давам согласност за учество во изведување на настава од Студиската програма на интегрирани студии од прв и втор циклус Ветеринарна медицина – англиски јазик, на Факултетот за ветеринарна медицина - Скопје, по наставните предмети:

1. Animal Husbandry 1
2. Animal Husbandry 2

Скопје,

Подносител на изјава

Врз основа на член 61 став 1 точка 4 од Законот за високо образование (Службен весник на Република Македонија, бр.82/2018) ја давам следната

Република Северна Македонија
Универзитет св. КИРИЛ И МЕТОДИЈ во Скопје
ФАКУЛТЕТ ЗА ВЕТЕРИНАРНА МЕДИЦИНА во СКОПЈЕ
Бр. 03-812
12.6. 2025 год.

ИЗЈАВА

за давање согласност за учество во изведување на настава по одредени предмети од студиската програма на интегрирани академски студии од прв и втор циклус Ветеринарна медицина на Англиски јазик

Јас, Сандра Мојсова, избран во звање вонреден проофесор и вработена на Факултетот за ветеринарна медицина-Скопје на Универзитетот „Св. Кирил и Методиј“ во Скопје, давам согласност за учество во изведување на настава од Студиската програма на интегрирани студии од прв и втор циклус Ветеринарна медицина – англиски јазик, на Факултетот за ветеринарна медицина - Скопје, по наставните предмети:

1. Meat Hygiene and Technology
2. Milk Hygiene and Technology
3. Meat, Fish, Eggs and Honey – Hygiene and Technology
4. Food Safety and Veterinary Public Health
5. Veterinary Inspection
6. Food Microbiology
7. Current Food Safety Systems

Скопје,
12.06.2025

Подносител на изјава
Мојсова

Република Северна Македонија
Универзитет СВ. КИРИЛ И МЕТОДИЈ во Скопје
ФАКУЛТЕТ ЗА ВЕТЕРИНАРНА МЕДИЦИНА во СКОПЈЕ
Бр. 03-811
13.06.2025 год

Врз основа на член 61 став 1 точка 4 од Законот за високо образование (Службен весник на Република Македонија, бр.82/2018) ја давам следната

ИЗЈАВА

за давање согласност за учество во изведување на настава по одредени предмети од студиската програма на интегрирани академски студии од прв и втор циклус Ветеринарна медицина на Англиски јазик

Јас, Радмила Чрчева Николовска, избрана во звање вонреден професор и вработена на Факултетот за ветеринарна медицина-Скопје на Универзитетот „Св. Кирил и Методиј“ во Скопје, давам согласност за учество во изведување на настава од Студиската програма на интегрирани студии од прв и втор циклус Ветеринарна медицина – англиски јазик, на Факултетот за ветеринарна медицина - Скопје, по наставниот предмет:

1. Domestic Animal General Nutrition
2. Specific Nutrition of Domestic Animals
3. Nutritious, Medicinal and Poisonous plants
4. Bulk Feed Production
5. Harmful Antinutritive Compounds in Feed
6. Feed Additives and Health Modulators

Скопје,

Подносител на изјава

Република Северна Македонија
Универзитет „Св. Кирил и Методиј“ во Скопје
ФАКУЛТЕТ ЗА ВЕТЕРИНАРНА МЕДИЦИНА ВО СКОПЈЕ
Примено: 16.06.2025
Орг. Един. | Број | Прилог | Вредност
03 | 819

Врз основа на член 61 став 1 точка 4 од Законот за високо образование (Службен весник на Република Македонија, бр.82/2018) ја давам следната

И З Ј А В А

за давање согласност за учество во изведување на настава по одредени предмети од студиската програма на интегрирани академски студии од прв и втор циклус Ветеринарна медицина на Англиски јазик

Јас, Деан Јанкулоски, избран во звање вонреден професор и вработена на Факултетот за ветеринарна медицина-Скопје на Универзитетот „Св. Кирил и Методиј“ во Скопје, давам согласност за учество во изведување на настава од Студиската програма на интегрирани студии од прв и втор циклус Ветеринарна медицина – англиски јазик, на Факултетот за ветеринарна медицина - Скопје, по наставните предмети:

1. Meat Hygiene and Technology
2. Milk Hygiene and Technology
3. Meat, Fish, Eggs and Honey – Hygiene and Technology
4. Food Safety and Veterinary Public Health
5. Veterinary Inspection
6. Food Microbiology
7. Current Food Safety Systems

Скопје,

Подносител на изјава

DEAN JANKULOSKI

Digitally signed by DEAN JANKULOSKI
DN: C=MK, OU=VAT - 4043009100046, OID.2.5.4.97=NTRMK-6462942, O=Fakultet za veterinarna medicina-Skopje, SERIALNUMBER=235665, T=Dekan, SN=JANKULOSKI, CN=DEAN JANKULOSKI
Reason: I am the author of this document
Location:
Date: 2025-06-12 11:48:53+02'00'
Foxit PDF Reader Version: 2024.2.3

Република Северна Македонија
Универзитет СВ. КИРИЛ И МЕТОДИЈ во Скопје
ФАКУЛТЕТ ЗА ВЕТЕРИНАРНА МЕДИЦИНА во СКОПЈЕ
Бр. 03-861
20.06.2025 год.

Врз основа на член 61 став 1 точка 4 од Законот за високо образование (Службен весник на Република Македонија, бр.82/2018) ја давам следната

И З Ј А В А

за давање согласност за учество во изведување на настава по одредени предмети од студиската програма на интегрирани академски студии од прв и втор циклус Ветеринарна медицина на Англиски јазик

Јас, Тони Довенски, избран во звање редовен проофесор и вработен на Факултетот за ветеринарна медицина-Скопје на Универзитетот „Св. Кирил и Методиј“ во Скопје, давам согласност за учество во изведување на настава од Студиската програма на интегрирани студии од прв и втор циклус Ветеринарна медицина – англиски јазик, на Факултетот за ветеринарна медицина - Скопје, по наставните предмети:

1. Reproduction 1
2. Reproduction 2
3. Introduction to Veterinary Medicine
4. Advanced reproduction endocrinology
5. Ultrasonic diagnostics of reproductive disorders in cows
6. Advanced andrology and cryobiology

Скопје,

Подносител на изјава

Toni Dovenski

ANEX NO 3

1. Course programs with information in accordance with Article 4 of the Regulation on the content of study programs ("Official Gazette of the Republic of Macedonia", no. 79/2023)

No: 1

Attachment no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Animal Anatomy 1**			
2.	Code	VM2023-111			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Functional morphology			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	First year (I)	Semester	First (I) semester
7.	Course load expressed in ECTS credits	9.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Vlatko Ilieski, PhD Prof. Lazo Pendovski, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course	For attending: Decision on Study Rules for first and second cycle integrated studies (undergraduate studies) and second cycle studies (postgraduate studies) at FVMS (UG 554, 26.07.2021).			
11.	Objectives of the course program (competencies) and learning outcomes	The theoretical instruction in the subject *Animal Anatomy 1* aims to familiarize students with the scope and field of anatomy, the position of domestic species within the zoological system, the division of the animal body into organ systems, descriptive terms, and regions of the body. Through the study of this subject, students will gain detailed knowledge of the systematic and topographical anatomy of the locomotor system, including the forelimb, hindlimb, vertebral column, the anatomy of the thoracic wall, and the wall of the abdominal cavity. Additionally, they will explore the topographical anatomy of the head and neck, studying the bones and muscles of the head and neck, the nasal cavity, paranasal sinuses, nasopharynx, larynx, trachea, oral cavity, teeth, tongue, salivary glands, mastication apparatus, pharynx, and esophagus.			

		The practical instruction in *Animal Anatomy 1* aims to familiarize students with general descriptive terms used in anatomy, body planes, and the description of joint and muscle movements. Through practical cadaver dissections, students will learn about the topographical anatomy of the forelimb, hindlimb, and vertebral column, as well as the anatomy of the thoracic and abdominal walls. Practical work involves studying bones, dissecting muscles, joints, and ligaments, as well as hands-on exploration of the bones, joints, and ligaments of the head and neck (both general and comparative), blood vessels and lymph nodes of the head and neck, the nasal cavity and paranasal sinuses, oral cavity and salivary glands, larynx, trachea, pharynx, esophagus, blood vessels, and nerves.		
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	The organization and classification of bones, the joints, the organization and classification of muscles, muscle sheaths, tendons, tendon sheaths, and synovial bursae, peripheral blood vessels and lymphatic vessels, peripheral nerves of the locomotor system, and the topographical anatomy of the head and neck.		
13.	Inter-connection with other subjects (courses)	Histology and Embryology 1		
14.	Detailed description of teaching and working methods for the subject	Theory classes: interactive (lectures in large group with discussion and active participation of thestudents; video presentations, slide presentations, computer interactive software). Practicals: practicals and other ways of work with smaller groups. Realized by work in dissection room and work on anatomic models (work with native, fixed and plastinated models). Written assay: learning with use of referent textbooks and internet, preparing written assay; presentation and discussion about the written assay.		
15.	Total available time	225 hours Theory classes: 4 hours/per week (60 hours) Practicals: 5 hours/per week (75 hours)		
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	60
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours	75
		16.3.	Practice: total hours	
17.	Other forms of activities	17.1.	Project assignments: hours	30
		17.2.	Individual tasks: hours	30
		17.3.	Self-directed learning	30
18.	Conditions for receiving authorization	Besides attendance on theory classes and practicals additional condition for course teacher's signature at the end of the semester, is passing of tests during the semester. Final exam is predicted. Student who did not pass one of the tests during the semester goes to the final exam. The student is obligated for active participation in all predicted activities for gaining points which are part of the final grading.		
19.	Assessment methods			
	19.1.	Tests: points		up to 60

	19.2.	Written essay/project assignment, oral or wrriten presentation: points		up to 10
	19.3.	Final exam: points		up to 30
20.	Grading criteria (points/grade)		up to 59 points	5 (five) (F)
			60 to 68 points	6 (six) (E)
			69 to 76 points	7 (seven) (D)
			77 to 84 points	8 (eight) (C)
			85 to 92 points	9 (nine) (B)
			93 to 100 points	10 (ten) (A)
21.	Method of monitoring the quality of teaching process		Report from the Self-evaluation committee and anonymous student survey	

22. Literature

22.1. Mandatory literature

No.	Author	Title	Publisher	Year
1.	L Konig H.E., Liebich H.-G.	*Veterinary anatomy of domestic animals*	Schattauer (Stuttgart – new York) textbook andColour Atlas	2004
2.	Sisson S.	*The anatomy of domestic animals*	W.B. Saunders Company. Philadelphia and London,	1941
3.	Dyce K.M., Sack W.O., Wensing C.J.G.	*Textbook of veterinary anatomy*	W.B. Saunders Company. Philadelphia-London- Toronto-Sydmey_Montreal-Tokyou	1996
4.	Evans E., de Lahunta A.	*Guide to the dissection of dog*	W.B Saunders Company Philadelphia-London- Toronto.	1971
5.	Evans E., Christensen G.	*Anatomy of the dog*	W.B Saunders Company Philadelphia-London- Toronto	1979
6.		Nomina Anatomica Vetreinaria	Internationa committee on veterinary Gross anatomical Nomenclature Gent, Belgium	1992

	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year
		1.				
		2.				
		3.				

No: 2

Attachment no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Cell Biology**			
2.	Code	VM2023-112			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department for Biochemistry and Cell Biology			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	First year (I)	Semester	First (I)
7.	Course load expressed in ECTS credits	5.5			
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Velimir Stojkovski, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course	For attending: Decision on Study Rules for first and second cycle integrated studies (undergraduate studies) and second cycle studies (postgraduate studies) at FVMS (UG 554, 26.07.2021).			
11.	Objectives of the course program (competencies) and learning outcomes	Program course goals (competencies): Theory classes The aim of the Cell Biology course is for students to gain knowledge of the basic analytical techniques used in cell biology, as well as the structure and functioning of the cell. The main task of the course is for students through the three teaching units (cytology, molecular biology and genetics) to become familiar with the subcellular cellular structures, their functioning and their interconnection in the functioning of the cell and the			

		living organism, the structure and role of DNA, the basic principles of inheritance, the variability of the hereditary material and the mechanisms of cell division. Practicals During practical laboratory work, students gain basic experience in experimental work with biological materials. They become familiar with the principles and methods of microscopy and material analysis with multiple techniques. Cell biology together with biochemistry is a basic subject that provides the basis for upgrading and studying other preclinical and clinical subjects such as microbiology, immunology, pharmacology, pathophysiology, etc.		
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	Content of the subject program: Theory classes Methods and techniques in cell biology, Evolution and organization of the cell, The basic principles of systematics and taxonomy of living organisms, Viruses and bacteriophages, Rikettsia, Procariota, Bacteria, Chemical composition of the cell, Cell membranes, structure, types of transport across the membrane, membrane potential, Subcellular organization, cytoplasmic organelles, Cytoskeleton, intracellular signaling, intercellular communication, DNA structure and genetic code, DNA as a data storage medium, Recombinant DNA and genetic engineering, Basics of inheritance, Variability of the genetic material, Mechanisms of cell division. Practicals Each thematic unit of the theoretical teaching is supplemented with an appropriate practical and laboratory exercise (Introduction to microscopy, Methods in cell biology, Microscopy of prokaryotic and eukaryotic cells, Microscopy of subcellular cellular organization, Cell division. Mitosis, Meiosis, Isolation of DNA, Structure of the DNA molecule, Methods in cytogenetics and karyotype analysis, Basic principles of inheritance).		
13.	Inter-connection with other subjects (courses)	Biochemistry		
14.	Detailed description of teaching and working methods for the subject	Theory classes: Interactive classes (lectures in large groups or mentored classes depending on the number of students, with discussion and active participation of the students,). Practicals: Practicals and other ways of work with smaller groups		
15.	Total available time	137.5 hours Theory classes: 2 hours/per week (30 hours) Practicals: 3 hours/per week (45 hours)		
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	30
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours	45
		16.3.	Practice: total hours	
17.	Other forms of activities	17.1.	Project assignments: hours	
		17.2.		

			Individual tasks: hours	
		17.3.	Self-directed learning	62.5
18.	Conditions for receiving authorization	- The presence of the student at theory and practical classes is a condition for obtaining a signature confirming attendance from the subject professor; - Class attendance will not be counted if the student is absent for more than 30% of the classes; - The student is exempt from the final exam by passing the practical exam, earning a minimum score in each continuous test and achieving a total of at least 60 points across all assessments; The student can take the final exam by obtaining a signature confirming attendance in the theory and practical classes and passing the practical exam.		

19. Assessment methods:

The student is obligated for active participation in all predicted activities for gaining points which are part of the final grading.

Tests (two): written

Test I: Methods and techniques in cell biology, Evolution and organization of the cell, The basic principles of systematics and taxonomy of living organisms, Viruses and bacteriophages, Rikettsia, Procariota, Bacteria, Chemical composition of the cell, Cell membranes, Subcellular organization , cytoplasmic organelles, Cytoskeleton, intracellular signaling, intercellular communication.

Test II: DNA structure and genetic code, DNA as a data storage medium, Recombinant DNA and genetic engineering, Basics of inheritance, Variability of the genetic material, Mechanisms of cell division.

Final exam: oral or written

Type of activity	Points	
	minimum	maximum
Attendance on theory classes	6	10
Attendance on practicals	6	10
Activity	6	10
Practical exam	6	10
Test I	9	15
Test II	9	15
Final exam	18	30
Total:	60	100

19.1.	Tests: points		
19.2.	Written essay/project assignment, oral or wrriten presentation: points		
19.3.	Final exam: points		
20.	Grading criteria (points/grade)	up to 59 points	5 (five) (F)
		60 to 68 points	6 (six) (E)
		69 to 76 points	7 (seven) (D)
		77 to 84 points	8 (eight) (C)
		85 to 92 points	9 (nine) (B)

			93 to 100 points	10 (ten) (A)	
21.	Method of monitoring the quality of teaching process		Report from the Self-evaluation committee and anonymous student survey		
22.	Literature				
	22.1.	Mandatory literature			
		No.	Author	Title	Publisher	Year
		1.	Bolsover R.S. Hyams S.J. Shephard A.E. White A.H.	*Cell Biology: A Short Course, 3rd ed.*	John Wiley & Sons Publication	2011
		2.	Bergtrom, G.	*Basic Cell and Molecular Biology 4e: What We Know and How Found Out*	University of Wisconsin Milwaukee, UWM Digital Commons	2020
		3.				
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year
		1.				
		2.				
		3.				

No: 3

Attachment no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Biophysics**			
2.	Code	VM2023-113			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of natural science and mathematics Ss Cyril and Methodius University in Skopje Department of Physics			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	First (I) year	Semester	First (I)

7.	Course load expressed in ECTS credits	4.0		
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Riste Popeski Dimovski, PhD		
9.	Teaching language	English		
10.	Necessary prerequisites for attending and passing the course	For attending: Decision on Study Rules for first and second cycle integrated studies (undergraduate studies) and second cycle studies (postgraduate studies) at FVMS (UG 554, 26.07.2021).		
11.	Objectives of the course program (competencies) and learning outcomes	Gaining basic knowledge of physical principles in biological processes and techniques for their investigation, also introducing of physical concepts of the modern diagnostical and therapeutic procedures in veterinary medicine		
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	Basics of biomechanics. Mechanical waves. Sound. Ultrasound. Fluid biomechanics. Hemodynamics. Basics of electromagnetism. Electromagnetic waves. Main principles of the geometrical optics. Eye as a optic system and eye malformations. Microscope. Basics of atomic and nuclear physics. X-rays and their application in medical diagnostics. Radiation physics. Natural and artificial radioactivity. Ionization rays, their influence on living organisms and protection. Dosimetry.		
13.	Inter-connection with other subjects (courses)	/		
14.	Detailed description of teaching and working methods for the subject	Theory classes: lectures in large group. Practicals: laboratory work in smaller groups.		
15.	Total available time	100 hours Theory classes: 1 hour/per week (15 hours) Practicals: 2 hours /per week (30 hours)		
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	15
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours	30
		16.3.	Practice: total hours	
17.	Other forms of activities	17.1.	Project assignments: hours	
		17.2.	Individual tasks: hours	
		17.3.	Self-directed learning	55
18.	Conditions for receiving authorization	/		
19.	Assessment methods Student has passed the exam with passing of the two tests (realized during the semester) or with passing the final exam. In both cases student has to gain up to 50% from the maximal number of points for every test, i.e. up to 50% from the maximal number from the final exam.			
	19.1.	Tests: points		
	19.2.	Written essay/project assignment, oral or wrriten presentation: points		

	19.3.	Final exam: points				
20.	Grading criteria (points/grade)			up to 59 points	5 (five) (F)	
				60 to 68 points	6 (six) (E)	
				69 to 76 points	7 (seven) (D)	
				77 to 84 points	8 (eight) (C)	
				85 to 92 points	9 (nine) (B)	
				93 to 100 points	10 (ten) (A)	
21.	Method of monitoring the quality of teaching process			Report from the Self-evaluation committee and anonymous student survey		
22.	Literature					
	22.1.	Mandatory literature				
		No.	Author	Title	Publisher	Year
		1.		*Authorized lectures and exercises by the course professor*		
		2.				
		3.				
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year
		1.	W. Hoope, W. Lohman, H. Markl, H. Ziegler	*Biophycs*	Springer-Verlag	1983
		2.				
		3.				

No: 4

Attachment no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Chemistry**			
2.	Code	VM2023-114			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Chemistry			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	First (I)	Semester	First (I)

7.	Course load expressed in ECTS credits	5.0
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Zehra Hajrulai-Musliu, PhD
9.	Teaching language	English
10.	Necessary prerequisites for attending and passing the course	For attending: Decision on Study Rules for first and second cycle integrated studies (undergraduate studies) and second cycle studies (postgraduate studies) at FVMS (UG 554, 26.07.2021).
11.	Objectives of the course program (competencies) and learning outcomes	Objectives of the subject program (competencies): Introduction to the subject - The objectives of the course are as follows: 1. To teach students about the importance of chemistry in everyday life and its connection with other subjects in the veterinary field. 2. To emphasize the significance of chemistry for the veterinary profession. 3. To clarify the connection between chemistry and other natural sciences and help students understand the subject's interdisciplinary nature. The course will cover general, inorganic, and organic chemistry theoretical knowledge. Interactive teaching methods will familiarize students with the basics of chemistry, including the structure of substances, building units, fundamental laws governing chemical changes, and the vocabulary of primary groups found in inorganic compounds. Students will also gain knowledge of the molecular structure and physical properties of organic compounds and the chemical reactivity of functional groups in organic and bioorganic molecules, emphasizing the basics of organic chemistry. Additionally, practical teaching will equip students with essential chemical calculations and basic laboratory skills for performing qualitative and quantitative chemical analysis, enhancing their understanding of the subject.
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	Content of the subject program We will cover the following topics: - Division of substances, physical and chemical changes - Mixtures of substances and types of mixtures - Structure of the atom and definition of isotopes and isobars - Types of radioactive radiation and the use of radioactive isotopes in medicine - Explanation of the structure of the electronic shell and familiarization with the symbols of the chemical elements - Chemical bonds, including ionic, covalent, hydrogen, and metallic bonds - Relative atomic and molecular mass, Molar mass, and molar volume - Dispersed systems and colloidal chemistry - Acids and bases, pH value, getting salts, hydrolysis, and buffers

		- Redox processes - Importance of studying inorganic chemistry - Periodic table of elements and properties of elements - Biological significance of elements - Introduction to organic chemistry - Qualitative analysis of organic compounds - Determination of organic formula compounds - Hydrocarbons - alkanes, alkenes, alkynes, arenes, physical and chemical properties - Distinguishing functional groups in carbon compounds with oxygen - Alcohols, phenols and ethers, aldehydes and ketones - Carboxylic acids and their derivatives - Esters as well as compounds of carbon with nitrogen-Amines, their physical-chemical properties, obtaining.		
13.	Inter-connection with other subjects (courses)			
14.	Detailed description of teaching and working methods for the subject	Learning methods: Theoretical teaching: interactive (lectures in a large group with discussion and engagement of the students). Practical teaching: exercises and other forms of work in smaller groups. Seminar paper: learning with using professional literature and the Internet, preparing a seminar paper (essay/poster), presentation, and discussion of the seminar paper.		
15.	Total available time	125 hours Theory classes: 2 hours/week (30 hours) Practical: 3 hours/week (45 hours)		
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	30
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours	
		16.3.	Practice: total hours	45
17.	Other forms of activities	17.1.	Project assignments: hours	
		17.2.	Individual tasks: hours	
		17.3.	Self-directed learning	50
18.	Conditions for receiving authorization	The student is responsible for fulfilling all the planned tasks and activities that are scored as part of the final assessment.		
19.	Assessment methods Continuous knowledge checks (three): written First Check: General and Inorganic Chemistry Second Check: Organic Chemistry Third Check: Stoichiometry Final exam: oral or written			

Attendance on theory classes	6	10

		Attendance on practicals	6	10	
		Project assignement	6	10	
		Continuous test (I)	8	10	
		Continuous test (II)	8	15	
		Continuous test (III)	8	15	
		Final exam	18	30	
		Total:	60	100	
	19.1.	Tests: points			
	19.2.	Written essay/project assignment, oral or written presentation: poits			min. 6 max 10
	19.3.	Final exam: points			min. 18 max.30
20.	Grading criteria (points/grade)		up to 59 points		5 (five) (F)
			60 to 68 points		6 (six) (E)
			69 to 76 points		7 (seven) (D)
			77 to 84 points		8 (eight) (C)
			85 to 92 points		9 (nine) (B)
			93 to 100 points		10 (ten) (A)
21.	Method of monitoring the quality of teaching process		Report from the Self-evaluation committee and anonymous student survey		
22.	Literature				
	22.1.	Mandatory literature			
		No.	Author	Title	Publisher	Year
		1.	Theodore Lawrence Brown, Patrick Woodward	*Chemistry*	Pearson, 2018	2018
		2.	Janice Gorzynski Smith	*General, Organic & Biological Chemistry*	McGraw-Hill Science Engineering	2009
		3.	Nivaldo Tro	*Chemistry: Structure and Properties*	Pearson	2017
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year
		1.				
		2.				
		3.				

No: 5

Attachement no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Biostatistics**			
2.	Code	VM2023-115			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Rural economy, Management and Biostatistics			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	First (I)	Semester	First (I)
7.	Course load expressed in ECTS credits	2.5			
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Vasilka Popovska Trenevska, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course	For attending: Decision on Study Rules for first and second cycle integrated studies (undergraduate studies) and second cycle studies (postgraduate studies) at FVMS (UG 554, 26.07.2021).			
11.	Objectives of the course program (competencies) and learning outcomes	This course is introduction of statistical methods that are utilized for studying natural sciences. The objective of the course is to enable the students to analyze the biologic and biomedical problems in quantitative manner and thus to provide them with the basic understanding of the principles that are foundation of the statistic science. The world that we live in and which we try to understand is filled with differences and uncertainities. In the natural sciences not rarely the different experimental and observation studies produce large amount of data. The statistics provides us with methods for data organization, presentation and interpretation based on the information that they contain. The biostatistics deals with implementing these statistical methods in the field of natural sciences.			
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	***Theory classes*** Introduction to biostatistics. Basic concepts, definitions and terms. descriptive statistics. Quantitative variables. Basic rules about probabilities. Probability distributions for discrete random variables. Probability distributions for continuous random variables. Functions of random variables and sampling distributions. Inductive statistics – estimations of parameters; hypothesis testing. Hypothesis testing for proportions. Relationship between quantitative variables. Analysis of data variance. Testing of qualitative data independence. Time series			

<table>
<tr><td></td><td></td><td colspan="3">analysis
Practicals
Solving tasks related with completed parts of the theory classes.</td></tr>
<tr><td>13.</td><td>Inter-connection with other subjects (courses)</td><td colspan="3"></td></tr>
<tr><td>14.</td><td>Detailed description of teaching and working methods for the subject</td><td colspan="3">Theory classes: interactive (lectures in large group with discussion and active participation of the students).
Practicals: practicals and other ways of work with smaller groups
Written assay: learning with use of referent textbooks and internet, preparing written assay; presentation and discussion about the written assay.</td></tr>
<tr><td>15.</td><td>Total available time</td><td colspan="3">62.5 hours
Theory classes: 1 hour/per week (15 hours)
Practicals: 2 hours/per week (30 hours)</td></tr>
<tr><td rowspan="4">16.</td><td rowspan="4">Forms of teaching activities</td><td>16.1.</td><td>Theoretical lectures: hours</td><td>15</td></tr>
<tr><td>16.2.</td><td>Practical lectures (laboratory, auditorial), seminars, team work: hours</td><td>30</td></tr>
<tr><td>16.3.</td><td>Practice: total hours</td><td></td></tr>
<tr><td></td><td></td><td></td></tr>
<tr><td rowspan="3">17.</td><td rowspan="3">Other forms of activities</td><td>17.1.</td><td>Project assignments: hours</td><td></td></tr>
<tr><td>17.2.</td><td>Individual tasks: hours</td><td></td></tr>
<tr><td>17.3.</td><td>Self-directed learning</td><td>17.5</td></tr>
<tr><td>18.</td><td>Conditions for receiving authorization</td><td colspan="3">Besides attendance on theory classes and practicals additional condition for course teacher’s signature at the end of the semester, is passing of tests during the semester with up to 25% points gained per test.
Final exam is not predicted. Student who did not pass one of the tests during the semester goes to one of the tests during the exam sessions.</td></tr>
<tr><td>19.</td><td colspan="4">Assessment methods
The student is obligated for active participation in all predicted activities for gaining points which are part of the final grading.
Tests (two): written
First test: general part
Second test: special part
Final exam: not predicted
Compete final exam: not predicted

<table>
<tr><td rowspan="2">Tupe of activities</td><td colspan="2">Points</td></tr>
<tr><td>minimum</td><td>maximum</td></tr>
<tr><td>Attendance on theory classes</td><td>12</td><td>15</td></tr>
<tr><td>Attendance on practicals</td><td>12</td><td>15</td></tr>
<tr><td>Project assignement</td><td>6</td><td>10</td></tr>
<tr><td>Continious test (2)</td><td>15(x2)=30</td><td>30(x2)=60</td></tr>
<tr><td>Final exam (not predicted)</td><td colspan="2"></td></tr>
<tr><td>Total</td><td>60</td><td>100</td></tr>
</table>
</td></tr>
</table>

	19.1.	Tests: points			
	19.2.	Written essay/project assignment, oral or wrriten presentation: points			
	19.3.	Final exam: points			
20.	Grading criteria (points/grade)		up to 59 points		5 (five) (F)
			60 to 68 points		6 (six) (E)
			69 to 76 points		7 (seven) (D)
			77 to 84 points		8 (eight) (C)
			85 to 92 points		9 (nine) (B)
			93 to 100 points		10 (ten) (A)
21.	Method of monitoring the quality of teaching process		Report from the Self-evaluation committee and anonymous student survey		
22.	Literature				
	22.1.	Mandatory literature			
		No.	Author	Title	Publisher	Year
		1.	Aviva Petrie, Caroline Sabin	*Medical Statistics at a Glance*	Wiley-Blackwell	2019
		2.	B.L. Johnson, K. Wichern	*Applied Multivariate Statistical Analysis*	Pearson	2018
		3.	Wayne W. Daniel, Chad L. Cross	*Biostatistics: A Foundation for Analysis in the Health Sciences*	Wiley	2018
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year
		1.	Ronald N. Forthofer, Eun Sul Lee, Mike Hernandez	*Biostatistics: A Guide to Design, Analysis and Discovery*	Academic Press	2014
		2.	Marcello Pagano, Kimberlee Gauvreau	*Principles of Biostatistics*	CRC Press	2018
		3.	Miroslav Kaps, William Lamberson	*Biostatistics for Animal Science*	CABI	2009

No: 6

Attachment no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Histology and Embryology 1**			
2.	Code	VM2023-116			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of Veterinary Medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Functional Morphology			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	First (I)	Semester	First (I)
7.	Course load expressed in ECTS credits	4.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Florina Popovska Percinic, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course	For attending: Decision on Study Rules for first and second cycle integrated studies (undergraduate studies) and second cycle studies (postgraduate studies) at FVMS (UG 554, 26.07.2021).			
11.	Objectives of the course program (competencies) and learning outcomes	The objectives of this course are to explain the microscopic structure of animal tissues at the level of light and electron microscopy, relating it to their origin, development and function. Based on the acquired knowledge, students will be able to recognize different microscopic tissues and describe their histological structure. Subsequently, they will broaden their knowledge on tissue's microscopic structure, connecting it to the information gained from macroscopic anatomy, cell biology, biophysics and chemistry. The learning outcomes from this course will be a strong base for further studies of different organs and organic systems. Regarding embryology, students will learn about the basic processes and early stages of embryonic development in different vertebrate classes. It will allow a better comprehension of the complex relationships in the animal body, as well as the occurrence of developmental anomalies in animals.			
12.	Detailed course content by chapter and unit with	*Theoretical lectures* Techniques and laboratory methods for preparation and staining of microscopic slides; Histological structure and characteristics of four basic tissues; Different			

	learning outcomes for each chapter	types of epithelial, connective, muscular and nervous tissue; Types of ossification; Blood elements; Histological structure of heart and blood vessels (histology). Induction, determination and differentiation; Gametogenesis and meiotic changes occurring in the gametes; Folliculogenesis; Ovulation; Structure of male and female gametes; Oocyte types; Fertilization, errors during fertilization and the IVF procedure; The principle methods and different types of cleavage, gastrulation and implantation; extraembryonic (foetal) membranes; Placentation and different types of placenta; Tissue development, axillary organs and mesoderm development; Primitive embryonic body (embryology). *Practical lectures* Histological structure of the epithelial, connective, muscle and nerve tissue; Histological structure of the heart and blood vessels (histology); Gametogenesis, meiotic changes during gametogenesis; Folliculogenesis; Fertilization; Cleavage; Gastrulation; Early stages of embryonic development; IVF (oocytes aspiration, maturation and *in vitro* fertilization, *in vitro* cultivation); Different types of placenta (embryology).		
13.	Inter-connection with other subjects (courses)	Animal Anatomy 1 and Cel Biology		
14.	Detailed description of teaching and working methods for the subject	Theoretical teaching: interactive through video presentation material (lectures in a large group with discussion and student engagement). Practical teaching: Laboratory exercises with video presentations, independent, individual microscopical activity and other forms of work in small groups. Self-study: Using the basic and/or additional literature, studying from e-materials prepared by the teacher and the assistant, given on the Teams platform (presentations from lectures and exercises, e materials reading compatible materials from appointed e-links). Project activity: learning using professional literature and the Internet, drafting an essay/poster on previously agreed topics, presentation and discussion		
15.	Total available time	100 hours Theory classes: 2 hour/per week (15 hours) Practicals: 3 hours/per week (30 hours)		
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	30
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours	45
		16.3.	Practice: total hours	
17.	Other forms of activities	17.1.	Project assignments: hours	
		17.2.	Individual tasks: hours	25
		17.3.	Self-directed learning	
18.	Conditions for receiving authorization	The minimum points needed for receiving authorization are: 6 points from the theoretical and 12 points from the practical lectures		
19.	Assessment methods A minimum of 6 points and a maximum of 8 points can be received by attending the theoretical			

	lectures. The attendance will be recorded by student's signature during lecturing. The scoring coefficient for one practical lecture is 0.53 (15 weeks x 0.53 points=8 points). The attendance in practical lectures will be recorded by a student's signature. A successfully completed practical lecture is considered the lecture in which the student demonstrates theoretical knowledge of the topic, makes accurate drawings of the appointed material in the notebook, as well as fulfills the working diary, which is verified by the corresponding assistant/professor. The student has to achieve from 12 to 15 points during the semester. The scoring coefficient for one practical lecture is 1 (1 x 15 weeks=15 points). The students' activity during the practical lecturing will be checked orally or in writing, two times per semester (maximum 0.5 points per check). A maximum number of points gained by this activity is 1. The student is obliged to pass the two tests (to obtain a minimum of 9 points on each test). Those points will be added to the points obtained from the attendance on the theoretical and practical lectures and the student activity. Afterwards, the student takes the final exam.		
	19.1.	Tests: Two tests in writing will be performed First test: General embryology Second test: General histology and cardiovascular system The minimum number of points to successfully pass each test is 9 and the maximum points that can be obtained per test is 18 points	First test: 9-18 points Second test: 9-18 points
	19.2.	Written essay/project assignment, oral or wrriten presentation: It is not mandatory. If the student wants to prepare an essay/project assignment, he/she can obtain a maximum of 3 points, which will be added to the points obtained by all activities. This activity is allowed only after a successful pass of both test	0-3 points
	19.3.	Final exam: Students who obtained a minimum of 6 points from the theoretical and 12 points from the practical lectures and have successfully passed both tests (scored a minimum of 9 points per test) are eligible to take a final exam. The final exam is conducted orally, on microscopic slides. Each student receives 5 slides. The value of one slide is 8 points. Minimum number of slides that a student should recognize and describe the structure is 3. The minumum number of points for successfully passing the final exam is 24 (3 x 8 points). The highest number of points in the final exam is 40 (5 x 8 points)	24 - 40 points
20.	Grading criteria (points/grade)	up to 59 points	5 (five) (F)
		60 to 68 points	6 (six) (E)
		69 to 76 points	7 (seven) (D)
		77 to 84 points	8 (eight) (C)
		85 to 92 points	9 (nine) (B)
		93 to 100 points	10 (ten) (A)

21.	Method of monitoring the quality of the teaching process		Report from the Self-evaluation committee and anonymous student survey			
22.	Literature					
	22.1.	Mandatory literature				
		No.	Author	Title	Publisher	Year
		1.	Don Samuelson	*Textbook of veterinary histology*	Saunders, Elsevier	2007
		2.	McGeady T.A. et al	*Veterinary Embryology 2nd Ed.*	Wiley-Blackwell	2017
		3.				
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year
		1.	Department of functional morphology: course Histology with embryology	*Digital learning materials from the theoretical and practical teaching, given on Teams platform*		
		2.	Jo Ann Eurell& Brian L. Frappier	*Dellman's Textbook of Veterinary Histology (6th Ed.)*	Blackwell Publishing	2006
		3.	Linda M. Bacha, William J. Bacha	*Color Atlas of Veterinary Histology*	Lippincott Williams & Wilkins	2000
		4.	Hans-Georg Liebich	*Veterinary Histology of Domestic Mammals and Birds 5th Edition*	5m Publishing	2019
		5.	Donald B. Mcmillan & Richard J. Harris	*An Atlas of Comparative Vertebrate Histology*	Elsevier Inc	2018
		6.	Elizabeth Aughey, Fredric L. Frye	*A Color Handbook of Comparative Veterinary Histology & Clinical Correlates*	Manson Publishing Ltd	2001
		7.	Compatible digital materials from appointed e-links			

No: 7

Attachement no. 3		**Integrated first and second cycle of studies**
1.	Program course title	**Animal Anatomy 2**

2.	Code	VM2023-121			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Functional Morphology			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	First (I)	Semester	Second (II)
7.	Course load expressed in ECTS credits	9.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Vlatko Ilieski, PhD Prof. Lazo Pendovski, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course	For attending: Decision on Study Rules for first and second cycle integrated studies (undergraduate studies) and second cycle studies (postgraduate studies) at FVMS (UG 554, 26.07.2021) plus listened *Animal Anatomy 1*.			
11.	Objectives of the course program (competencies) and learning outcomes	The theoretical instruction in the course *Animal Anatomy* 2 aims to familiarize students with: – The topographical anatomy of the thoracic cavity, pleura, and mediastinum; the anatomy of the lungs; and an overview of the airways, including the trachea, main bronchi, intrapulmonary bronchi, and bronchioles. – The topographical anatomy of the heart in various mammals, focusing on its anatomical structure and functional anatomy, venous and arterial circulation, drainage of major veins, systemic circulation, pulmonary circulation, and innervation of the heart. – The topographical anatomy of the abdomen (general and comparative), covering body cavities, serous membranes, anatomy of the simple and complex stomach, small and large intestines, and the anatomy and topography of accessory glands of the digestive system (liver, pancreas). – The topographical anatomy of the pelvic cavity, including descriptions of urogenital organs and the topography of the kidneys. – The topographical anatomy of the male reproductive system (testes, accessory sex glands, penis and prepuce, muscles of the male reproductive system). – The topographical anatomy of the female reproductive system (ovaries,			

		oviducts, uterus, vagina, vestibule, and vulva). – The anatomy of terminal branches of the abdominal aorta and the udder. – Students will also learn about: – The organization of the central nervous system, including the cranial cavity, meninges, anatomy, and vascularization of the brain and spinal cord, cranial nerves, cerebrospinal nerves, and ganglia. – The visceral nervous system: sympathetic and parasympathetic nervous systems, and the intramural nervous system. – Sensory organs, skin, and skin derivatives, including the anatomy of the eye, ear (external, middle, and inner ear), skin (general and comparative), skin glands, nails, claws, hooves, and horns. – The anatomy of exotic animals, including fish, green iguana, mouse, snake, turtle, ferret, chicken, ostrich, pigeon, and songbirds. Practical instruction in *Animal Anatomy* 2 involves hands-on dissection to introduce students to: – The topographical anatomy of the head and neck. – The topographical anatomy of the thoracic and abdominal cavities, including the organs, nerves, blood vessels, and lymph nodes. – The topographical anatomy of the pelvic cavity, focusing on the organs, nerves, blood vessels, and lymph nodes. – The topographical anatomy of male and female reproductive organs. – Students will also gain practical knowledge of: – The anatomy of the meninges, anatomy, and vascularization of the brain and spinal cord, cranial nerves, and ganglia. – The eyeball, orbital fasciae, ocular muscles, eyelids, conjunctiva, lacrimal apparatus, vascularization, and innervation of the eye. – The anatomy of exotic animals through practical demonstrations to familiarize students with the general anatomy of fish, green iguana, mouse, snake, turtle, ferret, chicken, ostrich, pigeon, and songbirds
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	– The topographical anatomy of the head and neck – Topographical Anatomy of the Thorax: Detailed study of the structures within the thoracic cavity, including the arrangement of organs, pleura, mediastinum, and vascular and nervous components. – Topographical Anatomy of the Abdomen: Examination of abdominal organs, their spatial relationships, serous membranes, and supporting structures. – Topographical Anatomy of the Pelvis: Exploration of pelvic organs, including the urogenital and reproductive systems, along with associated nerves, blood vessels, and lymph nodes. – Organization of the Central Nervous System: Analysis of the cranial and spinal structures, brain and spinal cord anatomy, meninges, vascularization, and innervation. – Sensory Organs, Skin, and Skin Derivatives: Anatomy of the eye, ear (external, middle, and inner ear), skin layers, glands, and specialized structures like nails, claws, hooves, and horns. – Anatomy of Exotic Animals: General anatomical study of species such

		as fish, green iguana, mouse, snake, turtle, ferret, chicken, ostrich, pigeon, and songbirds, emphasizing comparative anatomy. – Visual-Diagnostic and Clinical Anatomy of the Thorax and Abdomen: Application of anatomical knowledge for diagnostic imaging and clinical assessment of thoracic and abdominal structures.		
13.	Inter-connection with other subjects (courses)	Histology and Embryology 1 and 2 and Animal Physiology 1 and 2		
14.	Detailed description of teaching and working methods for the subject	Theory classes: interactive (lectures in large group with discussion and active participation of the students; video presentations, slide presentations, computer interactive software). Practicals: practicals and other ways of work with smaller groups. Realized by work in dissection room and work on anatomic models (work with native, fixed and plastinated models). Written assay: learning with use of referent textbooks and internet, preparing written assay; presentation and discussion about the written assay.		
15.	Total available time	200 hours Theory classes: 4 hour/per week (15 hours) Practicals: 5 hours/per week (30 hours)		
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	60
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours	75
		16.3.	Practice: total hours	
17.	Other forms of activities	17.1.	Project assignments: hours	30
		17.2.	Individual tasks: hours	15
		17.3.	Self-directed learning	20
18.	Conditions for receiving authorization	Besides attendance on theory classes and practicals additional condition for course teacher's signature at the end of the semester, is passing of tests during the semester Final exam is predicted. Student who did not pass one of the tests during the semester goes to final exam. The student is obligated for active participation in all predicted activities for gaining points which are part of the final grading.		
19.	Assessment methods			
	19.1.	Tests: points		up to 60
	19.2.	Written essay/project assignment, oral or wrriten presentation: points		up to 10
	19.3.	Final exam: points		up to 30
20.	Grading criteria (points/grade)		up to 59 points	5 (five) (F)
			60 to 68 points	6 (six) (E)
			69 to 76 points	7 (seven) (D)
			77 to 84 points	8 (eight) (C)
			85 to 92 points	9 (nine) (B)
			93 to 100 points	10 (ten) (A)
21.	Method of monitoring the quality of teaching process	Report from the Self-evaluation committee and anonymous student survey		
22.	Literature			

	22.1.	Mandatory literature				
		No.	Author	Title	Publisher	Year
		1.	L Konig H.E., Liebich H.-G.	*Veterinary anatomy of domestic animals*	Schattauer (Stuttgart – new York) textbook andColour Atlas	2004
		2.	Sisson S.	*The anatomy of domestic animals*	W.B. Saunders Company. Philadelphia and London,	1941
		3.	Dyce K.M., Sack W.O., Wensing C.J.G.	*Textbook of veterinary anatomy*	W.B. Saunders Company. Philadelphia-London- Toronto-Sydmey_Montreal-Tokyou	1996
		4.	Evans E., de Lahunta A.	*Guide to the dissection of dog*	W.B Saunders Company Philadelphia-London- Toronto.	1971
		5.	Evans E., Christensen G.	*Anatomy of the dog*	W.B Saunders Company Philadelphia-London- Toronto	1979
		6.		*Nomina Anatomica Vetreinaria*	Internationa committee on veterinary Gross anatomical Nomenclature Gent, Belgium	1992
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year
		1.				
		2.				
		3.				

No: 8

Attachment no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Histology and Embryology 2**			
2.	Code	VM2023-122			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of Veterinary Medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Functional Morphology			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	First (I)	Semester	Second (II)
7.	Course load expressed in ECTS credits	5.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Florina Popovska Percinic, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course	For attending: Decision on Study Rules for first and second cycle integrated studies (undergraduate studies) and second cycle studies (postgraduate studies) at FVMS (UG 554, 26.07.2021) as well as listened Histology with Embryology 1 For passing: Histology and Embryology 1			
11.	Objectives of the course program (competencies) and learning outcomes	The objective of this course is to explain the microscopic structure of different animal organs in correlation with their origin, development and function. The students should be able to independently identify different organs under the microscope; be able to recognize and explain the specific combination of tissues within each organ, to be able to compare and distinguish the histological structure of particular organs in different animals, to be able to explain the embryonic origin and development of each organic system in correlation with its histological structure. The knowledge gained from this course allows better comprehension of the knowledge gained from other courses, such as anatomy and physiology. Additionally, considering that knowing the microarchitecture of a healthy organ is a necessary precondition in recognizing its changes, this course gives a solid			

		base for diagnosing the pathological changes that occur in different animal organs during various diseases.		
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	Study of the microscopic structure, embryonic development and structural characteristics of different organs from the immune, respiratory, endocrine, digestive, nervous and urogenital system, visual and auditory organs, as well as the integument and its derivatives in various domestic animals and birds .		
13.	Inter-connection with other subjects (courses)	Histology and Embryology 1, Animal Anatomy 1 and 2 and Animal Physiology 1 and 2		
14.	Detailed description of teaching and working methods for the subject	Theoretical teaching: interactive through video presentation material (lectures in a large group with discussion and student engagement). Practical teaching: Laboratory exercises with video presentations, independent, individual microscopical activity and other forms of work in small groups. Self-study: Using the basic and/or additional literature, studying from e-materials prepared by the teacher and the assistant, given on the Teams platform (presentations from lectures and exercises, e-materials; reading compatible materials from appointed e-links). Project activity: learning using professional literature and the Internet, drafting an essay/poster on previously agreed topics, presentation and discussion.		
15.	Total available time	125 hours Theory classes: 2 hour/per week (15 hours) Practicals: 3 hours/per week (30 hours)		
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	30
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours	45
		16.3.	Practice: total hours	
17.	Other forms of activities	17.1.	Project assignments: hours	
		17.2.	Individual tasks: hours	50
		17.3.	Self-directed learning	
18.	Conditions for receiving authorization	The minimum points needed for receiving authorization are 4 points from the theoretical and 8 points from the practical lectures		
19.	Assessment methods A minimum of 4 points and a maximum of 6 points can be received by attending the theoretical lectures. The attendance will be recorded by the student's signature during lecturing. The scoring coefficient for a two-hour lecture is 0.4 (0.4 x 15 weeks=6 points). The attendance in practical lectures will be recorded by the student's signature. A successfully completed practical lecture is considered the lecture in which the student demonstrates knowledge of the topic, makes accurate drawings of the organs' microscopic structure in the notebook, as well as fulfills the working diary, which is verified by the corresponding assistant/professor. The minimum points that the student has to achieve is 8 points, and the maximum is 10 points. The scoring coefficient for one practical lecture is 0.7 (0.7 x 15 weeks=10 points) The student activity during the practical lecturing will be checked orally or with test, four times during			

	one semester (maximum 0.5 points per check). Maximum points gained by this activity is 2. The student is obliged to pass all tests (to obtain a minimum of 8 points per test). Those points will be added to the points obtained from attendance on the theoretical and practical lectures and the student activity.		
	19.1.	Tests: Three tests in writing will be performed First test: immune, endocrine and respiratory system Second test: digestive and nervous system Third test: urinary and reproductive system, skin and its derivates, and sensory organs The minimum number of points to successfully pass each test is 8 and the maximum number of points that can be obtained is 14 points	First test: 8-14 (min-max) points Second test: 8-14 (min-max) points Third test: 8-14 (min-max) points
	19.2.	Written essay/project assignment, oral or written presentation: It is not mandatory. If the student wants to prepare an essay/project assignment, he/she can obtain a maximum of 3 points, which will be added to the points obtained by all activities. This activity is allowed only after a successful pass of all three test	0-3
	19.3.	Final exam: Students are eligible to take the final exam, after meeting two criteria: to have passed Histology with Embryology 1 and to have successfully passed all three tests (score a minimum of 8 points per test). If the student fails at one or more tests (scores less than 8 points/test), he/she retakes the failed test(s). The final exam is conducted orally, on microscopic slides. Each student receives 5 slides. Each slide is evaluated with 8 points. Minimum number of microscopic slides that a student should recognize and describe its structure is 3 slides. Minimum number of points for successfully passing the final exam is 24 points (3 x 8 points). Maximum number of points which could be obtained in the final exam is 40 points (5 x 8 points)	24 - 40
20.	Grading criteria (points/grade)	up to 59 points	5 (five) (F)
		60 to 68 points	6 (six) (E)
		69 to 76 points	7 (seven) (D)
		77 to 84 points	8 (eight) (C)
		85 to 92 points	9 (nine) (B)
		93 to 100 points	10 (ten) (A)
21.	Method of monitoring the quality of teaching process	Report from the Self-evaluation committee and anonymous student survey	
22.	Literature		
	22.1.	Mandatory literature	

		No.	Author	Title	Publisher	Year
		1.	Don Samuelson	*Textbook of veterinary histology*	Saunders, Elsevier	2007
		2.	McGeady T.A. et al	*Veterinary Embryology 2nd Ed.*	Wiley-Blackwell	2017
		3.				
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year
		1.	Department of functional morphology: course Histology with embryology	*Digital learning materials from the theoretical and practical teaching, given on Teams platform*		
		2.	Jo Ann Eurell& Brian L. Frappier	*Dellman's Textbook of Veterinary Histology (6th Ed.)*	Blackwell Publishing	2006
		3.	Linda M. Bacha, William J. Bacha	*Color Atlas of Veterinary Histology*	Lippincott Williams & Wilkins	2000
		4.	Hans-Georg Liebich	*Veterinary Histology of Domestic Mammals and Birds 5th Edition*	5m Publishing	2019
		5.	Donald b. Mcmillan & Richard J. Harris	*An atlas of comparative vertebrate histology*	Elsevier Inc	2018
		6.	Elizabeth Aughey, Fredric L. Frye	*A Color Handbook of Comparative Veterinary Histology & Clinical Correlates*	Manson Publishing Ltd	2001

		7.	Compatible digital materials from appointed e-links	

No. 9

Attachement no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Biochemistry**			
2.	Code	VM2023-123			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Bichemistry and Cell biology			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	First (I)	Semester	Second (II)
7.	Course load expressed in ECTS credits	5.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Velimir Stojkovski, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course	For attending: Decision on Study Rules for first and second cycle integrated studies (undergraduate studies) and second cycle studies (postgraduate studies) at FVMS (UG 554, 26.07.2021) For passing: passed Chemistry and Cell Biology			
11.	Objectives of the course program (competencies) and learning outcomes	Program course goals (competencies): Theory classes The goal of studying biochemistry is for students to become familiar with the chemical processes in the living organism, their specifics, interactions and significance for the functioning of the cell and the organism. Students get to know the structure and function of biological macromolecules as the basic building substrate of living matter, the interaction of those molecules and the processes of biosynthesis (anabolism) and oxidative degradation (catabolism) and their significance in biochemistry. The regulation and interaction of metabolic processes are also discussed. Biochemistry together with cell biology, molecular biology and genetics provides the basis for studying other preclinical and clinical subjects such as microbiology, immunology, pharmacology, pathophysiology, etc.			

		Practicals During practical laboratory work, students gain basic experience in experimental work with biological materials. Students are introduced to the basic analytical biochemical methods and techniques important in veterinary medicine (titration, kinetic methods, various chromatographic techniques, electrophoresis, spectrophotometry, extraction, enzyme-immunological techniques, ELISA, PCR, etc.) and the instruments used in the laboratory. All thematic units covered in theoretical teaching are followed by appropriate exercises and practical laboratory work.		
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	Theory classes General concepts, methods and techniques of analysis in biochemistry. Water and electrolytes. Acid-base balance. Amino acids and peptides. Proteins. Enzymes. Carbohydrates. Lipids. Metabolic interrelations. Nucleic acids. Hormones. Porphyrins. Metabolism of non-protein nitrogenous compounds. Vitamins, microelements, macroelements and trace elements. Practicals Introduction to laboratory analysis (chromatography, electrophoresis, ELISA / ELFA). Dissolve. Mineral salts. Proteins. Carbohydrates. Lipids. Enzymes. Vitamins. Hormones. Metabolism		
13.	Inter-connection with other subjects (courses)			
14.	Detailed description of teaching and working methods for the subject	Theory classes: Interactive classes (lectures in large groups or mentored classes depending on the number of students, with discussion and active participation of the students,). Practicals: Practicals and other ways of work with smaller groups		
15.	Total available time	200 hours Theory classes: 4 hours/per week (60 hours) Practicals: 4 hours/per week (60 hours)		
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	60
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours	60
		16.3.	Practice: total hours	
17.	Other forms of activities	17.1.	Project assignments: hours	
		17.2.	Individual tasks: hours	
		17.3.	Self-directed learning	80
18.	Conditions for receiving authorization	- The presence of the student at theory and practical classes is a condition for obtaining a signature confirming attendance from the subject professor; - Class attendance will not be counted if the student is absent for more than 30% of the classes; - The student is exempt from the final exam by passing the practical exam, earning a minimum score in each continuous test and achieving a total of at least 60 points across all assessments; - The student can take the final exam by obtaining a signature		

confirming attendance in the theory and practical classes and passing the practical exam;

The student can take the final exam in Biochemistry after passing the exams in *Cell biology and Chemistry*.

19. Assessment methods

The student is obligated for active participation in all predicted activities for gaining points which are part of the final grading.

Tests (three): written

Test I: General concepts, methods and techniques of analysis in biochemistry. Water and electrolytes. Acid-base balance. Amino acids and peptides. Proteins.

Test II: Enzymes. Carbohydrates. Lipids. Metabolic interrelations.

Test III: Nucleic acids. Hormones. Porphyrins. Metabolism of non-protein nitrogenous compounds. Vitamins, microelements, macroelements and trace elements.

Final exam: oral or written

Type of activity	Points	
	minimum	maximum
Attendance on theory classes	6	10
Attendance on practicals	6	10
Activity	6	10
Practical exam	6	10
Test I	6	10
Test II	6	10
Test III	6	10
Final exam	18	30
Total:	60	100

19.1.	Tests: points	
19.2.	Written essay/project assignment, oral or wrriten presentation: points	
19.3.	Final exam: points	

20.	Grading criteria (points/grade)	up to 59 points	5 (five) (F)
		60 to 68 points	6 (six) (E)
		69 to 76 points	7 (seven) (D)
		77 to 84 points	8 (eight) (C)
		85 to 92 points	9 (nine) (B)
		93 to 100 points	10 (ten) (A)
21.	Method of monitoring the quality of teaching process	Report from the Self-evaluation committee and anonymous student survey	
22.	Literature		
	22.1.	Mandatory literature	

		No.	Author	Title	Publisher	Year
		1.	Devlin, T.M.	*Textbook of biochemistry with clinical correlations, 7th ed.*	John Wiley & Sons Inc.	2011
		2.	Lehninger, A.L. Nelson, D.L. and Cox, M.M.	*Principles of Biochemistry, 3rd ed.*	Worth Publishers. New York,	2000
		3.				
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year
		1.				
		2.				
		3.				

No. 10

Attachment no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Nutritious, Medicinal and Poisonous plants**			
2.	Code	VM2023-124			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Animal Nutrition			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	First (I)	Semester	Second (II)
7.	Course load expressed in ECTS credits	3.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Romel Velev, PhD Prof. Radmila Chrcheva Nikolovska, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course	For attending: Decision on Study Rules for first and second cycle integrated studies (undergraduate studies) and second cycle studies (postgraduate studies) at FVMS (UG 554, 26.07.2021)			

11.	Objectives of the course program (competencies) and learning outcomes	The purpose of the subject Nutritive, Medicinal and Poisonous Plants is to introduce students to the role and significance of the plant world for domestic animals. In the subject, the plant life will be studied from a point of view of veterinary science, i.e. for students to familiarize themselves with the most important ones nutritious, medicinal, poisonous and spicy plants. Also aim at this one the object is for the students to get to know the plant world, not the botanical world order and classification, but according to their practical significance for domestics animals.
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	1.INTRODUCTION TO THE SUBJECT NUTRITIONAL, MEDICINAL, POISONOUS AND SPICY PLANTS Plant life, veterinary science and animal husbandry: the connection of the subject Nutritive, medicinal and poisonous plants with the subjects with which the nutrition of domestic animals, pharmacology, toxicology, animal diseases and bee grazing. 2. PLANT WORLD AND ITS SIGNIFICANCE The plant world as the main energy source of food in nature, concept of flora, vegetation, area and taxonomy. 3. SYSTEMATIC OF THE PLANTS Basics of plant phylogeny. 4. MORPHOLOGY AND PHYSIOLOGY OF THE VEGETABLES ORGANS Morphology and physiology of vegetative and the generative plant organs. 5. PLANT WORLD AND ENVIRONMENTAL FACTORS Environmental factors and plant life. 6. GENERAL CHARACTERISTICS OF THE COMPOSITION OF THE PLANTS Chemical composition of food of plant origin. 7. DIVISION I CHARACTERISTICS OF THE PLANTS FOR LIVESTOCK FOOD; PRODUCTION OF LIVESTOCK FOOD Division and general characteristics of plants that are used for animal feed. Livestock production food on meadows, pastures and arable land. 8. BACTERIA, MOLDS, ALGAE Importance of bacteria, molds and algae 9. FAMILY POACEAE –GRASS Grasses (Poaceae). General morphological characteristics. Grass on pastures and meadows. Grasses from arable land: corn, wheat, barley, rye, sorghum, oats, millet, etc. 10. FAMILY FABACEAE–LEGUMINOS Legumes (Fabaceae). General morphological characteristics. The most important genera of: clover, alfalfa, cornflower, soybeans, cattle peas 11. ROOTS, TUBES AND OTHER FEEDS PLANTS Roots, tubers and other nutritious plants: fodder beet, fodder beet, potato, oil beet, etc. 12. HONEY-BEARING PLANTS AND BEE PASHA Honey plants and their importance as bee pasture. The most important honey plants in wild vegetation.

		Nectar, pollen, wax, propolis, honeydew. 13. SPICES Herbs used in the technology of meat and meat products. 14. MEDICINES AND SPICY PLANTS Importance of medicinal plants for veterinary medicine: mint, thyme, chamomile, marshmallow, etc. 15. POISONOUS PLANTS An overview of the most important poisonous plants in nature. Getting to know the active substances (alkaloids, glycosides, saponins and other toxic substances) found in separate plant organs.		
13.	Inter-connection with other subjects (courses)			
14.	Detailed description of teaching and working methods for the subject	Theory classes: interactive (lectures in large group with discussion and active participation of the students). Interactive lectures (in a large group with discussion and student engagement), practicals (in smaller groups) and seminars (learning using professional literature and internet, preparing a seminar paper (essay/poster) and presentation and discussion of the seminar paper).		
15.	Total available time	75 hours Theory classes: 1 hour per week (15 hours) Practicals: 2 hours per week (30 hours)		
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	15
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours	30
		16.3.	Practice: total hours	
17.	Other forms of activities	17.1.	Project assignments: hours	
		17.2.	Individual tasks: hours	5
		17.3.	Self-directed learning	25
18.	Conditions for receiving authorization	To approach tothe final exam the student is required to score a minimum of 50 points from the theoretical, the practical teaching and the three continuous tests. In the case when the student through the continuous inspection of knowledge did not show the result of a check of knowledge, and he won points only for theoretical and practical teaching, approaches a complete final exam.		
19.	Assessment methods			
	19.1.	Tests: points		
	19.2.	Written essay/project assignment, oral or wrriten presentation: points		
	19.3.	Final exam: points		
20.	Grading criteria (points/grade)		up to 59 points	5 (five) (F)
			60 to 68 points	6 (six) (E)
			69 to 76 points	7 (seven) (D)
			77 to 84 points	8 (eight) (C)
			85 to 92 points	9 (nine) (B)
			93 to 100 points	10 (ten) (A)
21.	Method of monitoring the quality of teaching	Report from the Self-evaluation committee and		

	process		anonymous student survey			
22.	Literature					
	22.1.	Mandatory literature				
		No.	Author	Title	Publisher	Year
		1.	Randall C. Moore, Darrell S. Vodopich, W. Dennis Clark, Kingsley R. Stern	*Botany*	McGraw-Hill Higher Education	1995
		2.	Wynn, S.G., Fougere B.J.	*Veterinary herbal medicine*	Mosby Elsevier	2007
		3.				
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year
		1.				
		2.				
		3.				

No. 11

Attachement no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Sport and Health**			
2.	Code	VM2023-125			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	First (I)	Semester	Second (II)
7.	Course load expressed in ECTS credits	2.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Appointed teacher by the Faculty of Physical Education Sport and Health			

		Prof. Sasho Todorovski, PhD		
9.	Teaching language	English		
10.	Necessary prerequisites for attending and passing the course			
11.	Objectives of the course program (competencies) and learning outcomes	Program objectives The aim of the subject Health and sport is for students to gaine, new and improve thire motorical knowledge and skills, to improve motorical, morphological and functional abilities with the aim of improving health, satisfying the needs for movement, enabling the student to rationally, meaningfully and purposefully use their free time, as well as improving the quality of life in youth, adulthood and old age. Acquiring knowledge about the structure, rules and principles of the training process and the specifics of the training activity.		
12.	Detailed course content by chapter and unit with learning outcomes for each chapter			
13.	Inter-connection with other subjects (courses)			
14.	Detailed description of teaching and working methods for the subject	**A. Program – general regular program** - basketball, futsal, volleyball, handball, dance fitness programs (aerobic, step-aerobic, pilates etc.) **B. Program – elective teaching** - mountaineering and camping, sweeming, biking, rolling, skating, skiing, table-tennis **C. Program – program for students with invalidity** - physical activities depending of student's diagnosis **D. Elective programs for students from higher study years** **E. Program – sport competitions**		
15.	Total available time	50 hours		
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	2
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours	26
		16.3.	Practice: total hours	
17.	Other forms of activities	17.1.	Project assignments: hours	
		17.2.	Individual tasks: hours	2
		17.3.	Self-directed learning	20
18.	Conditions for receiving authorization	**The course is not graded**		
19.	Assessment methods			
	19.1.	Tests: points		
	19.2.	Written essay/project assignment, oral or wrriten presentation: points		
	19.3.	Final exam: points		
20.	Grading criteria (points/grade)		up to 59 points	5 (five) (F)

				60 to 68 points		6 (six) (E)
				69 to 76 points		7 (seven) (D)
				77 to 84 points		8 (eight) (C)
				85 to 92 points		9 (nine) (B)
				93 to 100 points		10 (ten) (A)
21.	Method of monitoring the quality of teaching process			Report from the Self-evaluation committee and anonymous student survey		
22.	Literature					
	22.1.	Mandatory literature				
		No.	Author	Title	Publisher	Year
		1.		*List of textbooks is obtained by the course teacher depending of student's choice of kinesiologic activity*		
		2.		*Authorized lectures and exercises by the course professor*		
		3.				
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year
		1.				
		2.				
		3.				

No. 12

Attachment no. 3		**Integrated first and second cycle of studies**
1.	Program course title	**Rural Economics**
2.	Code	VM2023-126
3.	Study program	Veterinary medicine
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Rural Economy, Management and Biostatistics
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies

6.	Academic year / semester	Year	First (I)	Semester	Second (II)
7.	Course load expressed in ECTS credits	2.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Blagica Sekovska, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course	For attending: Decision on Study Rules for first and second cycle integrated studies (undergraduate studies) and second cycle studies (postgraduate studies) at FVMS (UG 554, 26.07.2021).			
11.	Objectives of the course program (competencies) and learning outcomes	Main objective of this subject is general knowledge gaining of the rural economy and agricultural economy. Besides the fact, that veterinary doctors are included in general economy. And because of meaning of CAP (Common agricultural policy), some knowledge of this field is necessary. Students will learn basic economical terminology, and basic economical rules and lows, especially in rural economy. In this program, functioning of the rural enterprises and farm will be topic. In this program students will become aware of their responsibilities like part of national economies and also the role of veterinary in national economy. Practical education: it is organizes like support of teoretical education with additional enphasis on fipherent contentswith dipherent methodes like casa studes, risk analuses, cost-benefit analusis, diskusion on diferent topic which is from special interes for students. Visit of one rural enterprise will be part of practical education too.			
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	Theory: Introduction, Meaning of rural economy, 10 basic principles of economy, Village – social and economic characteristic, Production factors, Agricultural policy, Theory of agricultural production, Agricultural enterprises, Diversification of rural economy, Rural economy in Macedonia, Agricultural market, Rural economy – sustainable development, Rural development Practical: The same topic like theory, but with additional emphasis of special interests of students, visit on rural enterprises, farm management			
13.	Inter-connection with other subjects (courses)	Connected with Management of veterinary practice			
14.	Detailed description of teaching and working methods for the subject	Interactiv teoretical lectures, discussion with student, video presentation			
15.	Total available time	50 hours Theory classes: 1 hour per week (15 hours) Practicals: 1 hour per week (15 hours)			
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours		15
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours		
		16.3.	Practice: total hours		15

17.	Other forms of activities	17.1.	Project assignments: hours	5
		17.2.	Individual tasks: hours	5
		17.3.	Self-directed learning	10
18.	Conditions for receiving authorization			
19.	Assessment methods			
	19.1.	Tests: points		40
	19.2.	Written essay/project assignment, oral or wrriten presentation: points		20
	19.3.	Final exam: points		40
20.	Grading criteria (points/grade)		up to 59 points	5 (five) (F)
			60 to 68 points	6 (six) (E)
			69 to 76 points	7 (seven) (D)
			77 to 84 points	8 (eight) (C)
			85 to 92 points	9 (nine) (B)
			93 to 100 points	10 (ten) (A)
21.	Method of monitoring the quality of teaching process		Report from the Self-evaluation committee and anonymous student survey	

22.	Literature					
	22.1.	Mandatory literature				
		No.	Author	Title	Publisher	Year
		1.	Blagica Sekovska	*Authorized lectures*		2020 till now
		2.	Donald D. Kay and others	*Farm management*		2009
		3.				
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year
		1.				
		2.				
		3.				

No. 13

Attachment no. 3		**Integrated first and second cycle of studies**
1.	Program course title	**Animal Physiology 1**
2.	Code	VM2023-211
3.	Study program	Veterinary medicine
4.	Organizer of the study program (unit, i.e. institute, department,	Faculty of veterinary medicine - Skopje, Ss. Cyril and Methodius University in Skopje

	section)	Department of Functional Morphology – Animal Physiology			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Second (II)	Semester	Third (III)
7.	Course load expressed in ECTS credits	7.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Vladimir Petkov, PhD, DVM Asst. Prof. Martin Nikolovski, PhD, DVM			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course	For attending: Decision on Study Rules for first and second cycle integrated studies (undergraduate studies) and second cycle studies (postgraduate studies) at FVMS (UG 554, 26.07.2021) plus passed final exams in Cell Biology and Chemistry For passing: Minimum points from theoretical and practical lectures, minimum points from the test, and minimum points from the final exam			
11.	Objectives of the course program (competencies) and learning outcomes	The course program covers the fundamental physiological mechanisms involved in maintaining homeostasis in mammals and birds. It includes the study of cellular transport mechanisms, buffer systems, blood physiology, nervous system function, cell membrane potentials and depolarization, synaptic signal transmission, the muscular system, motor and vestibular systems, sensory function and integration, endocrine system function and integration, reproductive physiology, as well as the physiological effects of vitamins, macronutrients, and micronutrients.			
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	1. Body fluids and homeostasis (Cellular transport and water distribution in the body; Cellular transport mechanisms; Intracellular and extracellular distribution of water; Acid-base balance; Buffer systems; Acid-base adaptive mechanisms); 2. Blood (Blood – basic characteristics and properties; Erythrocytes; Leukocytes; Platelets; Hemostasis); 3. Neurophysiology – (Nervous tissue; Electrochemical processes in the nervous tissue; Synaptic neurotransmission; Physiology of vestibular, motor and autonomic nervous system; Physiology of somatic and visceral senses; Physiology of olfaction and gustation; Physiology of the visual system; Physiology of the auditory system); 4. Muscle physiology (Physiology of the skeletal, smooth, and cardiac muscles); 5. Endocrine physiology (Hormones; Hormone receptors; Secondary messengers; Physiology of endocrine glands); 6. Reproductive physiology (Reproductive physiology in males; Reproductive physiology in females; Secretion in the mammary gland; Biological values of milk; Immune system of the mammary gland; Reproductive physiology in birds); 7. Physiology of minerals and vitamins (Distribution and cellular transport of macro- and microelements; Physiological effects of			

		macro- and microelements; Distribution and cellular transport of liposoluble and water-soluble vitamins).		
13.	Inter-connection with other subjects (courses)	Cell Biology; Biochemistry; Histology and Embryology 1 and 2; Animal Anatomy 1 and 2; Pathophysiology 1 and 2; Domestic Animal General Nutrition and Specific Nutrition of Domestic Animals; Clinical Biochemistry; Animal Behavior and Welfare; General and Special Pharmacology; Clinical and Laboratory Diagnostics in Companion Animals and Equines; Clinical and Laboratory Diagnostics in Farm Animals; Reproduction 1 and 2		
14.	Detailed description of teaching and working methods for the subject	Theoretical lectures: interactive (lectures in a large group with discussion and student activity); Practical teaching: working with animals, analyzing biological samples (blood, urine, etc.), working with computer simulations, video animations and other forms of work in small groups (up to 10 students); Self-directed learning: teaching materials (textbooks, manuals for practical teaching, presentations from lectures, questions for self-evaluation); Independent activity: analyzing scientific and professional papers, and writing seminar papers.		
15.	Total available time	175 hours Theory classes: 4 hour per week (60 hours) Practicals: 4 hours per week (60 hours)		
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	60
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours	60
		16.3.	Practice: total hours	/
17.	Other forms of activities	17.1.	Project assignments: hours	/
		17.2.	Individual tasks: hours	/
		17.3.	Self-directed learning	55
18.	Conditions for receiving authorization	Students who have earned at least 12 points from activity and attendance in theoretical lectures, 12 points from activity and attendance in practical lectures, 6 points from practical tasks, 6 points from homework, and 6 points from testing, meet the requirements for authorization.		
19.	Assessment methods			
	19.1.	Tests: points		One test (6-10 points)
	19.2.	Written essay/project assignment, oral or written presentation: points		Written essay + presentation (1 point) Up to 4 essays
	19.3.	Final exam: points		Up to 4 questions (1 question = 1-10 points)
20.	Grading criteria (points/grade)		up to 59 points	5 (five) (F)
			60 to 68 points	6 (six) (E)
			69 to 76 points	7 (seven) (D)
			77 to 84 points	8 (eight) (C)
			85 to 92 points	9 (nine) (B)

			93 to 100 points		10 (ten) (A)
21.	Method of monitoring the quality of teaching process		Report from the Self-evaluation committee and anonymous student survey		
22.	Literature				
	22.1.	Mandatory literature			
		No.	Author	Title	Publisher	Year
		1.	William O. Reece	*13 th edition of Dukes' Physiology of Domestic Animals*	John Wiley & sons, inc.	2015
		2.				
		3.				
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year
		1.	Christopher D. Moyes, Patricia M. Schulte,	*Principles of Animal Physiology – second edition*	Pearson Education Limited	2014
		2.	Cunningham, J. G., and Klein, G. K.	*Cunningham's Textbook of Veterinary Physiology (fifth edition)*	Elsevier	2013
		3.	Lauralee Sherwood, Hillar Klandorf, Paul Y. Yancey	*Animal Physiology – From Genes to Organisms second edition*	Brooks/Cole	2013
		4.	Richard W. Hill, Gordon A. Wise, Margaret Anderson	*Animal Physiology third edition*	Sinauer Associates, Inc. publishers	2012
		5.	F. Brian Eddy, Richard D. Handy	*Ecological and Environmental Physiology of Fishes*	Oxford University Press	2012
		6.	R. J. Collier, J. L. Collier	*Environmental Physiology of Livestock*	Wiley-Blackwell	2012

		7.	J. E. P. W. Bicudo, William A. Buttemer, Mark A. Chappell, James T. Pearson, Claus Bech	*Ecological and Environmental Physiology of Birds*	Oxford University Press	2010
		8.	Frandson, R. D., Lee Wilke, W., Dee Fails, A.	*Anatomy and Physiology of Farm Animals (Seventh Edition)*	Wiley-Blackwell	2009
		9.	Frandson, R. D., Lee Wilke, W., Dee Fails, A.	*Anatomy and Physiology of Farm Animals (Seventh Edition)*	Wiley-Blackwell	2009
		10.	Cunningham, J. G., and Klein, G. K.	*Cunningham's Textbook of Veterinary Physiology (fourth edition)*	Elsevier	2007
		11.	Rastogi, S. C.	*Essentials of Animal Physiology (Fourth Edition)*	New Age International (P) Ltd., Publishers	2007
		12.	Pat Willmer, Graham Stone, Ian Johnston	*Environmental Physiology of Animals – second edition*	Blackwell Science Ltd	2005
		13.	B. O'Malley	*Clinical Anatomy and Physiology of Exotic Species: Structure and Function of mammals, birds, reptiles and amphibians*	Elsevier Saunders	2005
		14.	B. R. Mackenna, R. Callander	*Illustrated Physiology* 6^{th} *edition*	Churchill Livingstone	1997
		15.	David Randall, Warren Burggren, Kathleen French	*Eckert Animal Physiology – Mechanisms and Adaptations*	RR Donnelley & Sons Company	1997

		16.	Knut Schmidt-Nielsen	*Animal Physiology: adaptation and environment second edition*	Cambridge University Press	1975

No. 14

Attachement no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Domestic Animal General Nutrition**			
2.	Code	VM2023-212			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Animal Nutrititon			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Second (II)	Semester	Third (III)
7.	Course load expressed in ECTS credits	5.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Prof.dr. Radmila Chrcheva Nikolovska, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course	For attending: Decision on Study Rules for first and second cycle integrated studies (undergraduate studies) and second cycle studies (postgraduate studies) at FVMS (UG 554, 26.07.2021)			
11.	Objectives of the course program (competencies) and learning outcomes	Objectives of the subject program (competencies): The theoretical teaching of the subject General nutrition of domestic animals aims to introduce students to the general characteristic of plants and other foods used in animal nutrition, their nutritional value, digestibility, and biological value; Study of animal nutritional and biological needs active ingredients, their effect on the processes in maintaining the basic physiological functions and production (production of meat, milk, eggs, wool, for work), as well as the ability to meet needs as simple as possible, rational, or economic way. To achieve these goals, the knowledge of other scientific disciplines is used, such as: chemistry, biochemistry, physics, physiology, microbiology, botany, soil science, pathology, economics, etc. Practical teaching aims to introduce students to: sampling; determination of the chemical food composition; starch equivalent,			

<table>
<tr><td></td><td></td><td colspan="3">units of measurement; getting to know foods; food hygiene assessment; composing a meal for various types and categories of animals; analysis and correction of the meal. Field – visit on a feed mixer.</td></tr>
<tr><td>12.</td><td>Detailed course content by chapter and unit with learning outcomes for each chapter</td><td colspan="3">Content of the subject program
Theoretical teaching
Introduction. Basic nutrients. Food value. Animal feed. Canning of food. Cereals. Byproducts. Animal foods. Mineral foods. Accessories. Fodder mixtures and food preparation. Antinutritional substances. General needs of animals.
Practical teaching
Sampling. Determination of the chemical composition of food. Starch equivalent. Getting to know foods. Hygienic assessment of foods. Compiling a meal for various types and categories of animals.</td></tr>
<tr><td>13.</td><td>Inter-connection with other subjects (courses)</td><td colspan="3"></td></tr>
<tr><td>14.</td><td>Detailed description of teaching and working methods for the subject</td><td colspan="3">Theory classes: interactive (lectures in large group with discussion and active participation of the students).
Practicals: practicals and other ways of work with smaller groups
Written assay: learning with use of referent textbooks and internet, preparing written assay; presentation and discussion about the written assay</td></tr>
<tr><td>15.</td><td>Total available time</td><td colspan="3">125 hours
Theory classes: 2 hours per week (30 hours)
Practicals: 2 hours per week (30 hours)</td></tr>
<tr><td rowspan="4">16.</td><td rowspan="4">Forms of teaching activities</td><td>16.1.</td><td>Theoretical lectures: hours</td><td>30</td></tr>
<tr><td>16.2.</td><td>Practical lectures (laboratory, auditorial), seminars, team work: hours</td><td>30</td></tr>
<tr><td>16.3.</td><td>Practice: total hours</td><td></td></tr>
<tr><td></td><td></td><td></td></tr>
<tr><td rowspan="3">17.</td><td rowspan="3">Other forms of activities</td><td>17.1.</td><td>Project assignments: hours</td><td></td></tr>
<tr><td>17.2.</td><td>Individual tasks: hours</td><td></td></tr>
<tr><td>17.3.</td><td>Self-directed learning</td><td>65</td></tr>
<tr><td>18.</td><td>Conditions for receiving authorization</td><td colspan="3">To approach the final exam the student is required to score a minimum of 50 points from the theoretical,
The practical teaching and continuous tests. In case when the student through the continuous inspection of knowledge did not show the result of a check of knowledge, and didn’t gain points only for theoretical and practical teaching, approaches a complete final exam.</td></tr>
<tr><td>19.</td><td colspan="4">Assessment methods

<table>
<tr><td rowspan="2">Type of activity</td><td colspan="2">Points</td></tr>
<tr><td>minimum</td><td>maximum</td></tr>
<tr><td>Attendance on theory classes</td><td>12</td><td>15</td></tr>
</table>
</td></tr>
</table>

		Attendance and activity on practicals	**12**	**15**	
		Written assay	**6**	**10**	
		Tests	**30**	**60**	
		Final exam			
		Total:	**60**	**100**	
	19.1.	Tests: points			
	19.2.	Written essay/project assignment, oral or wrriten presentation: points			
	19.3.	Final exam: points			
20.	Grading criteria (points/grade)		up to 59 points		5 (five) (F)
			60 to 68 points		6 (six) (E)
			69 to 76 points		7 (seven) (D)
			77 to 84 points		8 (eight) (C)
			85 to 92 points		9 (nine) (B)
			93 to 100 points		10 (ten) (A)
21.	Method of monitoring the quality of teaching process		Report from the Self-evaluation committee and anonymous student survey		
22.	Literature				
	22.1.	Mandatory literature			
		No.	Author	Title	Publisher	Year
		1.	Prof.dr Risto Prodanov	*Nutrition of the domestic ones animals-general section (script material for internal use);*		
		2.	Katerina Blagoevska	*Practicum for exercises material for internal use)*		
		3.	Jovanovic R	*Animal Nutrition*	Novi Sad	2002
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year
		1.	M.Marković, N.Georgevic. G.Grubić Zh.Jokic	*Animal Nutrition*	Beograd-Zemun	2004
		2.	Steven leeson and John D.	*Commercial Poultry Nutrition second edition*	Summers, Ontario	1997
		3.				

No. 15

Attachement no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Animal Husbandry 1**			
2.	Code	VM2023-213			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Animal Breeding			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Second (II)	Semester	Third (III)
7.	Course load expressed in ECTS credits	4.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Nikola Adamov, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course	For attending: Decision on Study Rules for first and second cycle integrated studies (undergraduate studies) and second cycle studies (postgraduate studies) at FVMS (UG 554, 26.07.2021)			
11.	Objectives of the course program (competencies) and learning outcomes	The theory classes of the subject aims to familiarize students with the theoretical basis and the main principles and methods for the improvement of animal husbandry branches: breeding of cattle, sheeps, goats, pigs, breeding, poultry and horses. Within each of these separate animal husbandry branches, students will have the opportunity to become familiar with the origin and evolution of domestic animals, their basic biological and production characteristics, the factors that influence the formation of their morphological and production characteristics, the methods of inheritance and the basics of population genetics applied in animal husbandry, as well as the methods of breeding, selection and improvement of their production capabilities. In this way, future doctors of veterinary medicine will be enabled to become better acquainted with the main factors on which optimal animal husbandry production depends, and which are specific to each branch separately, so that in the future they will be capable of concretely applying the acquired knowledge in practical conditions. The practical teaching of the course aims to familiarize students with: the procedures and methods used to solve specific problems in livestock production, such as assessing the exterior of farm animals, the main			

<table>
<tr><td></td><td></td><td colspan="3">breeds and types of domestic animals, their purpose, the different ways of breeding, as well as measures to improve the production of these animal species. The field teaching, which will include visits to several farms in the country, aims to provide students with a better understanding of the specifics of assessing the constitution and condition of animals, methods of identifying animals, keeping livestock records in livestock farming and determining the age of animals.</td></tr>
<tr><td>12.</td><td>Detailed course content by chapter and unit with learning outcomes for each chapter</td><td colspan="3">Theoretical teaching
Economic importance of farm animals and the purpose of their breeding. Origin and evolution of farm animals. Breed and breed traits. Exterior of the farm animals and its assessment. Basic genetics characteristics. Population genetics in animal husbandry. Measurement of production properties in farm animals and genetic improvement of farm animal populations (selection in animal husbandry). Fundamentals of veterinary genetics. Biotechnology in animal husbandry.
Practical teaching
Handling of domestic animals. Assessment of the exterior of domestic animals. Body measurements in domestic animals. Assessment of the properties of wool and fur.
Assessment of constitution and condition. Exterior and production types. Identification of animals. Determination of the age of domestic animals. Records in animal husbandry (registry bookkeeping). Assessment and licensing of breeding animals.</td></tr>
<tr><td>13.</td><td>Inter-connection with other subjects (courses)</td><td colspan="3"></td></tr>
<tr><td>14.</td><td>Detailed description of teaching and working methods for the subject</td><td colspan="3">Theory classes: interactive (lectures in large group with discussion and active participation of the students).
Practicals: practicals and other ways of work with smaller groups
Written assay: learning with use of referent literature and internet, preparing written assay; presentation and discussion about the written assay.</td></tr>
<tr><td>15.</td><td>Total available time</td><td colspan="3">100 hours
Theory classes: 2 hours per week (30 hours)
Practicals: 2 hours per week (30 hours)</td></tr>
<tr><td rowspan="3">16.</td><td rowspan="3">Forms of teaching activities</td><td>16.1.</td><td>Theoretical lectures: hours</td><td>30</td></tr>
<tr><td>16.2.</td><td>Practical lectures (laboratory, auditorial), seminars, team work: hours</td><td>30</td></tr>
<tr><td>16.3.</td><td>Practice: total hours</td><td></td></tr>
<tr><td rowspan="3">17.</td><td rowspan="3">Other forms of activities</td><td>17.1.</td><td>Project assignments: hours</td><td></td></tr>
<tr><td>17.2.</td><td>Individual tasks: hours</td><td></td></tr>
<tr><td>17.3.</td><td>Self-directed learning</td><td>40</td></tr>
<tr><td>18.</td><td>Conditions for receiving authorization</td><td colspan="3"></td></tr>
<tr><td>19.</td><td colspan="4">Assessment methods
<table><tr><th>Type of activity</th><th>Points</th></tr></table></td></tr>
</table>

			minimum	***maximum***
		Attendance on theory classes	**12**	**15**
		Attendance and activity on practicals	**12**	**15**
		Written assay	**6**	**10**
		First test	**10**	**15**
		Second test	**10**	**15**
		Final exam	**10**	**30**
		Total:	**60**	**100**
	19.1.	Tests: points		
	19.2.	Written essay/project assignment, oral or wrriten presentation: points		
	19.3.	Final exam: points		
20.	Grading criteria (points/grade)		up to 59 points	5 (five) (F)
			60 to 68 points	6 (six) (E)
			69 to 76 points	7 (seven) (D)
			77 to 84 points	8 (eight) (C)
			85 to 92 points	9 (nine) (B)
			93 to 100 points	10 (ten) (A)
21.	Method of monitoring the quality of teaching process		Report from the Self-evaluation committee and anonymous student survey	

22. Literature

22.1. Mandatory literature

No.	Author	Title	Publisher	Year
1.		*Digital learning materials from the theoretical and practical teaching*		
2.				
3.				
4.				
5.				

22.2. Additional literature

No.	Author	Title	Publisher	Year
1.	Dimitrijević V, Savić M, Trailović R, Bečkei Z	*Animal breeding: farm and social animals, Faculty of veterinary medicine*	University of Belgrade, CID, Belgrade	2020

		2.	Lasley, J. F.	*Genetics of Livestosck Improvement*	Prentice-Hall, Inc., New Jersey	1987
		3.				

No 16

Attachement no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Animal Hygiene 1**			
2.	Code	VM2023-214			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Animal Hygiene and Environmental Protection			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Second (II)	Semester	Third (III)
7.	Course load expressed in ECTS credits	4.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Assist. prof. Miroslav Kjosevski, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course	For attending: Decision on Study Rules for first and second cycle integrated studies (undergraduate studies) and second cycle studies (postgraduate studies) at FVMS (UG 554, 26.07.2021) plus passed final exams in Cell Biology, Chemistry and Biophysics.			
11.	Objectives of the course program (competencies) and learning outcomes	The main objectives of teaching the subject Animal Hygiene 1 are: getting familiar with and acquiring knowledge about, the impact the environment has on animal health (environmental medicine), measures and methods to protect the health of the animals (preventive medicine) and the protection of the environment.			

12.	Detailed course content by chapter and unit with learning outcomes for each chapter	**Theoretical lectures** Through the theoretical lectures, students will acquire the following competencies: general knowledge of the subject, tasks, history and methodological approach of animal hygiene; knowledge and identification of significant climatic factors, their characteristics that influence animal breeding and their bioclimatological needs; understanding how environment/microclimate and housing/rearing systems affect animal health; knowledge of the concepts of breeding without injuries and animal comfort, as well as the basis on which the appropriate systems for housing and breeding animals are determined; knowledge of hygiene and the quality of environmental factors (air, soil and water) during animal breeding and their impact on animal health, welfare and production; knowledge of the quality and hygiene of forage and its effects on the animal's body; knowledge of biosecurity and biosecurity programs on farms and animal production systems; knowledge and implementation of disinfection, disinsection and deratization programs; knowledge of the concept of Integrated Pest Management (IPM) and the methods and criteria for its implementation and evaluation; acquiring general knowledge of ecology, ecosystems, global warming and mutual relations/influences between animal husbandry and the environment, as well as potential environmental risks in the practice of veterinary medicine. **Practical lectures** With the practical lectures, the student is expected to acquire knowledge and skills to determine the way in which the external environment affects animals and the ability to recognize this in field conditions; knowledge of measurement, interpretation of results and evaluation of microclimatic conditions (air temperature, air humidity, air pressure, air flow, chemical composition of air, particulate pollutants in air) in facilities for domestic animals; design and assessment of the needs and quality of ventilation systems in animal facilities; knowledge of measurement, interpretation of results and assessment of solar radiation and lighting of facilities, hygiene assessment (physical, chemical and biological properties) and the quality of soil and water intended for animals; practical application of the disinfection of surfaces, stages of disinfection and disinfection methods and means; certification and practical methods for disinfection; more important pests from the families of arthropods, practical disinsection - methods and means for disinsection, assessment of disinsection; systematisation of rodents and more important rodent pests; practical deratization - methods and means for deratization, assessment of deratization; equipment, and labour and worker protection in the implementation of DDD programs; preparation and analysis of environmental reports for environmental control of animal facilities and processing of animal products.
13.	Inter-connection with other subjects (courses)	
14.	Detailed description of teaching and working methods for the subject	**Theoretical lectures** Introduction to Animal Hygiene. Comparation between the environmental needs of livestock. Health ecology - Environment and animal health. Comfort and injuries. Air and surface hygiene. Bioclimatology. Soil hygiene. Water hygiene,

		water supply and waste waters. Food and feed hygiene and animal grazing. Farm biosecurity. Disinfection. Disinsection. Deratization. Deodorization. Integrated Pest Management. Impact of intensive farm production on the environment. **Practical lectures** Determination of the physical properties of air (temperature, humidity, thermal radiation). Determination of the physical properties of air (air flow, pressure, noise). Determination of dust in the air. Determination of microorganisms in the air. Determination of the chemical composition of the air. Determination of solar radiation and lighting of animal facilities. Design of ventilation systems in animal facilities. Determination of ventilation volume in animal facilities. Examining the hygienic quality of soil (sampling, examining the physical properties of the soil). Examination of the hygienic quality of soil (examination of chemical properties of soil, microbiology of soil). Examination of the hygienic quality of water (sampling, examining the physical properties of water). Examination of the hygienic quality of water (examination of chemical properties of water, microbiology of water). Water supply, power supply and waste water testing. Examination of the hygiene of animal feed (physical, chemical, and microbiological properties). On-farm biosecurity assessment. Practical application of disinfection (preparation of disinfectants, determination of concentration of solution, chlorination and residual chlorine in water, attestation of disinfection). Practical application of disinsection (methods, efficiency testing and equipment for carrying out disinsection). Practical applications of deratization (rodent population control methods, rodenticide efficacy and deratization equipment). Equipment and protection during DDD. Environmental reports and measurements for environmental pollution control.lectures: interactive lectures in a large group, with discussion, student presentations and their additional activities Practical lectures: laboratory practice, work in small groups, field visits, homework, and presentations Seminar paper: learning using professional literature and the Internet, preparation of a seminar paper (essay/poster); presentation and discussion of the seminar paper. Project tasks: work on an individual/group project based on research and measurements with presentation of results		
15.	Total available time	100 hours Theorety classes: 2 hours a week (30 hours) Practical 2 hours a week (30 hours)		
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	30
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours	30
		16.3.	Practice: total hours	
17.	Other forms of activities	17.1.	Project assignments: hours	10
		17.2.	Individual tasks: hours	10
		17.3.	Self-directed learning	20

18.	Conditions for receiving authorization	To obtain a signature, the student is obliged to attend at least 70% of the theoretical and practical lectures held. The student is obliged to have acquired the right to sign and to pass the two continuous tests from the practical part (minimum 6 points scored on one continuous test) in order to be able to take the theoretical - final part of the exam.

19. Assessment methods

Type of activity	*Points*	
	minimum	*maximum*
Attendance at theoretical lectures	8	12
Attendance at practical lectures	6	9
Activity at theoretical lectures	0	3
Activity at practical lectures	0	6
Accepted seminar paper or project assignment	6	10
Passed 2 continuous tests practical part	2x6 (12)	2x10 (20)
Passed theoretical part/final exam	21	40
Total points required to pass the exam*	60	100

Activity at the lectures (theoretical and practical) and the seminar paper/project assignment are optional and the student decides independently whether to join the activities and acquire additional points.

**When scoring points with decimal values, if the decimal value is equal to or greater than 5, then it is rounded up to the whole number with a higher value. For example, If the student obtained 65.5 points, then it is considered that the student obtained a total of 66 points for this subject.*

19.1.	Tests: points	Two continuous tests practical part The theoretical part is performed through an oral or written final exam
19.2.	Written essay/project assignment, oral or wrriten presentation: points	Preparation of a seminar paper or project assignment min.6 max.10
19.3.	Final exam: points	min.21max. 40

20.	Grading criteria (points/grade)	up to 59 points	5 (five) (F)
		60 to 68 points	6 (six) (E)
		69 to 76 points	7 (seven) (D)
		77 to 84 points	8 (eight) (C)
		85 to 92 points	9 (nine) (B)
		93 to 100 points	10 (ten) (A)
21.	Method of monitoring the quality of teaching process	Report from the Self-evaluation committee and anonymous student survey	

22.	Literature					
	22.1.	Mandatory literature				
		No.	Author	Title	Publisher	Year
		1	Miljan Erbez, Aleksandar Komadina, Blanka Křivánková	*HANDBOOK FOR DAIRY COWS HOUSING*	GEOtest a.s. Brno, Czech Republic	2023
		2	NA	*DAIRY HOUSING MANAGEMENT VOLUME 1*	VEEPRO HOLLAND Information centre for Dutch cattle	NA
		3	NA	*THE ASSOCIATION OF SHELTER VETERINARIANS' GUIDELINES FOR STANDARDS OF CARE IN ANIMAL SHELTERS Second Edition*	NA	2022
		4	Andres Aland and Thomas Banhazi	*Livestock housing Modern management to ensure optimal health and welfare of farm animals*	Wageningen Academic Publishers, The Netherlands	2013
		5	Geoffrey C. Mrema, Lawrence O. Gumbe, Hakgamalang J. Chepete, Januarius O. Agullo	*Rural structures in the tropics design and development*	FAO Rome	2011
		6	R. J. Collier with J. L. Collier	*Environmental Physiology of Livestock*	John Wiley & Sons	2012
		7	Jeroen Dewulf and Filip Van Immerseel	*Biosecurity in animal production and veterinary medicine from principles to practice*	NA	2019
		8	William G. Bickert, Brian Holmes, Kevin Janni, David Kammel, Richard Stowell, Joe Zulovich	*Dairy Freestall Housing and Equipment*	NA	2000

		9	J. A. Clark, Publisher Butterworth-Heinemann	*Environmental Aspects of Housing for Animal Production*	NA	2013
		10	NA	*Dairy Housing and Manure Management Training Manual and Guide*	NA	2017
		11	Dr. Bivek Ghimire, Dr. Santosh Chhetri	*Basics of Farm Housing and Biosecurity for Diploma in Agriculture (Animal Science)*	Heritage Publishers & Distributors Pvt. Ltd.	2024
		12	Jibachha Shah	*Jibachha's Textbook of Basics Farm Housing & Biosecurity*	Jibachha publishing	2023
	22.2.	Additional literature Excerpts from scientific - professional literature				
		No.	Author	Title	Publisher	Year
		1.				
		2.				
		3.				

No. 17

Attachement no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Microbiology 1** ***(virology and prions)***			
2.	Code	VM2023-215			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Microbiology and Immunology			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Second (II)	Semester	Third (III)
7.	Course load expressed in	6.0			

	ECTS credits	
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Slavcho Mrenoshki, DVM, MSc, PhD Prof. Iskra Cvetkovikj, PhD
9.	Teaching language	English
10.	Necessary prerequisites for attending and passing the course	For attending: Decision on Study Rules for first and second cycle integrated studies (undergraduate studies) and second cycle studies (postgraduate studies) at FVMS (UG 554, 26.07.2021) plus passed final exams in Cell Biology and Chemistry.
11.	Objectives of the course program (competencies) and learning outcomes	Microbiology 1 is a preclinical subject through which students achieve basic knowledge of the viruses and prions, as a foundation for further study of pathology, infectious diseases and other clinical subjects. *Curriculum objectives of the Virology course. and prions:* Introduction to the viruses morphology, replication, viral genetics and genetic engineering in general. Interaction of the virus with the host cell, pathogenicity and virulence. Introduction to the most important animal viruses, the diseases they cause and the methods of their control. Introduction to the prion biology and the most important prion diseases. Introduction to the principles, use, and significance of diagnostic tests in virology, and their interpretation.
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	*Theoretical teaching (lectures)* Introduction to Virology. A brief history of virology. Structure and composition of viruses. Classification and nomenclature. Replication of viruses. Genetics and evolution of viruses. Genetic engineering. Virus-cell interaction. Mechanisms of infection and spread of viruses in the body. Determinants of viral virulence and the resistance/susceptibility of the host organism. Pathogenesis of viral diseases. Viral oncogenesis (brief overview of the most important oncogenic viruses). Prevention and control of viral diseases, vaccines and antiviral drugs. Poxviridae. Adenoviridae. Herpesviridae. Papillomaviridae. Hepadnaviridae. Parvoviridae. Circoviridae. Reoviridae. Birnaviridae. Retroviridae. Paramyxoviridae. Bornaviridae. Bunyaviridae. Arenaviridae. Orthomyxoviridae. Coronaviridae. Arteriviridae. Picornaviridae. Caliciviridae. Flaviviridae. Astroviridae. Togaviridae. Viruses in bees. Prions. Spongiform encephalopathies. *Practical teaching (exercises)* Introduction to the laboratory diagnostics of the viruses. Precautions and safety in the laboratory. Collection, packaging and transport of samples for virological tests. Samples reception in the laboratory. Direct identification of viruses. Direct identification of viral antigens. Direct identification of viral nucleic acids. Isolation of viruses. Quantification of the viruses. Detection of antibodies against viruses. Interpretation of virological laboratory results. Examples of viral diagnostics animal diseases and interpretation of the results.
13.	Inter-connection with other subjects (courses)	Microbiology 2 and Veterinary Immunology.
14.	Detailed description of teaching and working methods for the subject	*Theoretical teaching*: interactive (lectures in a large group with discussion and engagement of students). *Practical teaching*: exercises in small groups

15.	Total available time	150 hours Theory classes: 2 hours per week (3015 hours) Practicals: 2 hours per week (30 hours)		
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	30
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours	30
		16.3.	Practice: total hours	
17.	Other forms of activities	17.1.	Project assignments: hours	
		17.2.	Individual tasks: hours	30
		17.3.	Self-directed learning	60
18.	Conditions for receiving authorization			
19.	Assessment methods			
	19.1.	Tests: points		Four tests in the semester - 2 for the lectures material and 2 for the exercises material (15 questions x 1 points per question = 15 points per test; in total possibility to achieve 60 points)
	19.2.	Written essay/project assignment, oral or wrriten presentation: points		
	19.3.	Final exam: points		25 points
20.	Grading criteria (points/grade)		up to 59 points	5 (five) (F)
			60 to 68 points	6 (six) (E)
			69 to 76 points	7 (seven) (D)
			77 to 84 points	8 (eight) (C)
			85 to 92 points	9 (nine) (B)
			93 to 100 points	10 (ten) (A)
21.	Method of monitoring the quality of teaching process		Report from the Self-evaluation committee and anonymous student survey	
22.	Literature			
	22.1.	Mandatory literature		
		No.	Author	Title	Publisher	Year
		1.	Department teachers	*Lectures in the form of a Power Point presentation (in electronic and/or printed form)*		
		2.	Department teachers	*Manuals/scripts for exercises*		
		3.				
	22.2.	Additional literature				

		No.	Author	Title	Publisher	Year
		1.	Frederick Murphy, E. Gibbs, Marian Horzinek, Michael Studdert	*Veterinary Virology, 3rd Edition*	Elsevier	1999
		2.	MacLachlan J.N. and Dubovy J. E.	*Fenner's Veterinary Virology (5th Ed.).*	Elsevier.	2017
		3.	Dwight C. Hirsh, MacLachlan N.J., Walker L.R	*Veterinary microbiology (authorized translation in Macedonian)*	Ars Lamina	2004

No. 18

Attachment no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Animal Physiology 2**			
2.	Code	VM2023-221			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine - Skopje, Ss. Cyril and Methodius University in Skopje Department of Functional Morphology – Animal Physiology			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Second (II)	Semester	Fourth (IV)
7.	Course load expressed in ECTS credits	7.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Vladimir Petkov, PhD, DVM Asst. Prof. Martin Nikolovski, PhD, DVM			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course	For attending: Decision on Study Rules for first and second cycle integrated studies (undergraduate studies) and second cycle studies (postgraduate studies) at FVMS (UG 554, 26.07.2021) plus passed final exams in Animal Anatomy 1, Histology and Embryology 2. <u>For passing:</u> passed Animal physiology 1 and Biochemistry and minimum points from theoretical and practical lectures, minimum points from the test, and minimum points from the final exam			
11.	Objectives of the course program	The course covers the specific physiological mechanisms of the			

	(competencies) and learning outcomes	cardiovascular, respiratory, digestive, and urinary systems, as well as energy metabolism and the adaptive mechanisms for thermoregulation during physical activity. It integrates the fundamental physiological principles studied in Animal Physiology 1. By completing the curriculum, students will be able to apply this knowledge in clinical and comparative physiology.		
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	1. Cardiovascular physiology (Blood distribution and hemodynamics; Electrophysiology of the heart; Electrocardiography; Mechanical activity of the heart; Regulation of the heart activity; Control mechanisms in the cardiovascular system; Microcirculation; Lymph; Regional circulation in organic systems; Adaptive changes in the cardiovascular system during physical activity); 2. Respiratory physiology (Functional morphology of the respiratory system; Mechanics of breathing; Pulmonary ventilation and gas transport; Regulation of breathing); 3. Physiology of the digestive system (Gastrointestinal motility; Gastrointestinal secretion; Digestion and absorption; Digestive physiology in ruminants; Digestive physiology in Birds); 4. Renal physiology (Physiology of the urinary system in mammals; Physiology of the urinary system in birds). 5. Energy metabolism (absorptive and postabsorptive metabolism of carbohydrates, proteins, and fats). 6. Physiological mechanisms during increased physical activity and thermoregulation		
13.	Inter-connection with other subjects (courses)	Cell Biology; Biochemistry; Histology and Embryology 1 and 2 Animal Anatomy 1 and 2; Pathophysiology 1 and 2; Domestic Animal General Nutrition and Specific Nutrition of Domestic Animals; Clinical Biochemistry; Animal Behavior and Welfare; General and Special Pharmacology; Clinical and Laboratory Diagnostics in Companion Animals and Equines; Clinical and Laboratory Diagnostics in Farm Animals; Reproduction 1 and 2		
14.	Detailed description of teaching and working methods for the subject	Theoretical lectures: interactive (lectures in a large group with discussion and student activity); Practical teaching: working with animals, analyzing biological samples (blood, urine, etc.), working with computer simulations, video animations and other forms of work in small groups (up to 10 students); Self-directed learning: teaching materials (textbooks, manuals for practical teaching, presentations from lectures, questions for self-evaluation); Independent activity: analyzing scientific and professional papers, and writing seminar papers.		
15.	Total available time	175 hours Theory classes: 4 hours per week (60 hours) Practicals: 4 hours per week (60 hours)		
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	60
		16.2.	Practical lectures (laboratory,	60

			auditorial), seminars, team work: hours	
		16.3.	Practice: total hours	/
17.	Other forms of activities	17.1.	Project assignments: hours	/
		17.2.	Individual tasks: hours	/
		17.3.	Self-directed learning	55
18.	Conditions for receiving authorization	Students who have at least 12 points from activity and attendance in theoretical lectures, 12 points from activity and attendance in practical lectures, 6 points from practical tasks, 6 points from homework, and 6 points from testing, meet the requirements for authorization.		

19.	Assessment methods		
	19.1.	Tests: points	One test (6-10 points)
	19.2.	Written essay/project assignment, oral or written presentation: points	Written essay + presentation (1 point) Up to 4 essays
	19.3.	Final exam: points	Up to 4 questions (1 question = 1-10 points)

20.	Grading criteria (points/grade)	up to 59 points	5 (five) (F)
		60 to 68 points	6 (six) (E)
		69 to 76 points	7 (seven) (D)
		77 to 84 points	8 (eight) (C)
		85 to 92 points	9 (nine) (B)
		93 to 100 points	10 (ten) (A)
21.	Method of monitoring the quality of teaching process	Report from the Self-evaluation committee and anonymous student survey	

22.	Literature					
	22.1.	Mandatory literature				
		No.	Author	Title	Publisher	Year
		1.	William O. Reece	*13 th edition of Dukes' Physiology of Domestic Animals*	John Wiley & sons, inc.	2015
		2.				
		3.				
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year
		1.	Christopher D. Moyes, Patricia M. Schulte,	*Principles of Animal Physiology – second edition*	Pearson Education Limited	2014

		2.	Cunningham, J. G., and Klein, G. K.	*Cunningham's Textbook of Veterinary Physiology (fifth edition)*	Elsevier	2013
		3.	Lauralee Sherwood, Hillar Klandorf, Paul Y. Yancey	*Animal Physiology – From Genes to Organisms second edition*	Brooks/Cole	2013
		4.	Richard W. Hill, Gordon A. Wise, Margaret Anderson	*Animal Physiology third edition*	Sinauer Associates, Inc. publishers	2012
		5.	F. Brian Eddy, Richard D. Handy	*Ecological and Environmental Physiology of Fishes*	Oxford University Press	2012
		6.	R. J. Collier, J. L. Collier	*Environmental Physiology of Livestock*	Wiley-Blackwell	2012
		7.	J. E. P. W. Bicudo, William A. Buttemer, Mark A. Chappell, James T. Pearson, Claus Bech	*Ecological and Environmental Physiology of Birds*	Oxford University Press	2010
		8.	Frandson, R. D., Lee Wilke, W., Dee Fails, A.	*Anatomy and Physiology of Farm Animals (Seventh Edition)*	Wiley-Blackwell	2009
		9.	Frandson, R. D., Lee Wilke, W., Dee Fails, A.	*Anatomy and Physiology of Farm Animals (Seventh Edition)*	Wiley-Blackwell	2009
		10.	Cunningham, J. G., and Klein, G. K.	*Cunningham's Textbook of Veterinary Physiology (fourth edition)*	Elsevier	2007
		11.	Rastogi, S. C.	*Essentials of Animal Physiology (Fourth Edition)*	New Age International (P) Ltd., Publishers	2007

		12.	Pat Willmer, Graham Stone, Ian Johnston	*Environmental Physiology of Animals – second edition*	Blackwell Science Ltd	2005
		13.	B. O'Malley	*Clinical Anatomy and Physiology of Exotic Species: Structure and Function of mammals, birds, reptiles and amphibians*	Elsevier Saunders	2005
		14.	B. R. Mackenna, R. Callander	*Illustrated Physiology 6th edition*	Churchill Livingstone	1997
		15.	David Randall, Warren Burggren, Kathleen French	*Eckert Animal Physiology – Mechanisms and Adaptations*	RR Donnelley & Sons Company	1997
		16.	Knut Schmidt-Nielsen	*Animal Physiology: adaptation and environment second edition*	Cambridge University Press	1975

No. 19

Attachement no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Specific Nutrition of Domestic Animals**			
2.	Code	VM2023-222			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Animal Nutrititon			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Second (II)	Semester	Fourth (IV)
7.	Course load expressed in ECTS credits	4.0			
8.	Teacher (leading teacher, in case	Prof. Radmila Chrcheva Nikolovska, PhD			

	of multiple teacher)			
9.	Teaching language	English		
10.	Necessary prerequisites for attending and passing the course	For attending: Decision on Study Rules for first and second cycle integrated studies (undergraduate studies) and second cycle studies (postgraduate studies) at FVMS (UG 554, 26.07.2021) plus listned General Nutrition in Domestic Animals		
11.	Objectives of the course program (competencies) and learning outcomes	Objectives of the subject program (competencies): The theoretical teaching of the subject Specific Nutrition of Domestic Animals aims to introduce students to the general characteristic of plants and other foods used in animal nutrition, their nutritional value, digestibility, and biological value; Study of animal nutritional and biological needs active ingredients, their effect on the processes in maintaining the basic physiological functions and production (production of meat, milk, eggs, wool, for work), as well as the ability to meet needs as simple as possible, rational, or economic way. To achieve these goals, the knowledge of other scientific disciplines is used, such as: chemistry, biochemistry, physics, physiology, microbiology, botany, soil science, pathology, economics, etc. Practical teaching aims to introduce students to: sampling; determination of the chemical food composition; starch equivalent, units of measurement; getting to know foods; food hygiene assessment; composing a meal for various types and categories of animals; analysis and correction of the meal. Field – visit on a feed mixer.		
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	Content of the subject program Theoretical teaching Cattle nutrition. Nutrition of sheep and goats. Nutrition of pigs. Nutrition of horses. Nutrition of poultry. Nutrition of carnivores. Nutrition of laboratory animals. Fish nutrition. Practical teaching Analysis and correction of the meal. Visit to a mixer for the production of animal feed and visit to facilities with practical demonstration of cattle, pig and poultry nutrition		
13.	Inter-connection with other subjects (courses)			
14.	Detailed description of teaching and working methods for the subject			
15.	Total available time	100 hours Theory classes: 2 hours per week (30 hours) Practicals: 3 hours per week (45 hours)		
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	30
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours	45
		16.3.	Practice: total hours	

17.	Other forms of activities	17.1.	Project assignments: hours	
		17.2.	Individual tasks: hours	
		17.3.	Self-directed learning	25
18.	Conditions for receiving authorization	To approach the final exam the student is required to score a minimum of 50 points from the theoretical, the practical teaching and continuous tests. In the case when the student through the continuous inspection of knowledge did not show the result of a check of knowledge, and didn't gain points only for theoretical and practical teaching, approaches a complete final exam.		
19.	Assessment methods –			

Type of activity	***Points***	
	minimum	***maximum***
Attendance on theory classes	**12**	**15**
Attendance and activity on practicals	**12**	**15**
Written assay	**6**	**10**
Tests	**30**	**60**
Final exam		
Total:	**60**	**100**

19.1.	Tests: points	
19.2.	Written essay/project assignment, oral or wrriten presentation: points	
19.3.	Final exam: points	

20.	Grading criteria (points/grade)	up to 59 points	5 (five) (F)
		60 to 68 points	6 (six) (E)
		69 to 76 points	7 (seven) (D)
		77 to 84 points	8 (eight) (C)
		85 to 92 points	9 (nine) (B)
		93 to 100 points	10 (ten) (A)
21.	Method of monitoring the quality of teaching process	Report from the Self-evaluation committee and anonymous student survey	

22.	Literature					
	22.1.	Mandatory literature				
		No.	Author	Title	Publisher	Year
		1.	Prof.dr Risto Prodanov	*Nutrition of the domestic ones animals-general section (script material for internal use)*		
		2.	Katerina Blagoevska	*Practicum for exercises material for internal use)*		

		3.	Jovanovic R	*Animal Nutrition*	Novi Sad	2002
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year
		1.	M.Marković, N.Georgevic. G.Grubić Zh.Jokic	*Animal Nutrition*	Beograd-Zemun	2004
		2.	Steven leeson and John D.	*Commercial Poultry Nutrition second edition*	Summers, Ontario	1997
		3.				

No. 20

Attachement no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Animal Husbandry 2**			
2.	Code	VM2023-223			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Animal Breeding			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Second (II)	Semester	Fourth (IV)
7.	Course load expressed in ECTS credits	4.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Nikola Adamov, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course	For attending: Decision on Study Rules for first and second cycle integrated studies (undergraduate studies) and second cycle studies (postgraduate studies) at FVMS (UG 554, 26.07.2021) plus listned Animal husbandry 1			
11.	Objectives of the course program (competencies) and learning outcomes	The theoretical part is designed to provide students with a comprehensive understanding of the foundational principles and methodologies essential for enhancing various branches of animal husbandry. These branches include cattle, sheep, goat, pig, poultry, and horse breeding. The curriculum will equip students with the knowledge necessary to: Understand the biological and production characteristics			

		of different species and breeds of domestic animals; Learn the breeding technologies specific to each type of animal; Gain insight into the main products produced by these animals, such as milk, meat, wool, eggs, and others; Master the practical improvement procedures for each species, focusing on genetic selection, nutrition, and management practices. By studying these aspects, students will deepen their understanding of the factors influencing optimal animal husbandry production. This specialized knowledge will prepare them to apply their expertise in real-world scenarios, enhancing animal productivity and welfare in each specific branch of animal husbandry. In the future, this expertise will allow them to make informed decisions that ensure efficient and sustainable practices in the care and management of livestock. The practical teaching focuses on providing students with hands-on experience and applied knowledge in solving specific challenges encountered in animal husbandry. Through this practical component, students will be introduced to: Procedures and methods used to address common issues in animal husbandry, including management practices, disease control, and production optimization; Main breeds and types of domestic animals, emphasizing their specific purposes (e.g., dairy, meat, wool, eggs, etc.), physical characteristics, and breed standards; Exterior appearance and genetic constitution of various animal breeds, enabling students to recognize and assess animals based on their traits and genetic potential for improved production; Different methods of breeding, such as selective breeding, crossbreeding, and modern biotechnological approaches aimed at improving the productivity, health, and sustainability of animal populations; Measures to improve production in each species, focusing on practices that enhance yield, quality, and efficiency, including nutrition management, breeding strategies, and overall care. This practical training allows students to apply theoretical knowledge in real-world contexts, helping them become proficient in making informed decisions about animal husbandry practices that can optimize production and improve the welfare of the animals involved. As part of this training, several field trips to different animal farms are included with the purpose of enabling students to better understand the technological solutions for housing and raising various farm animal species.
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	**Theory** Cattle farming: Economic significance and origin of the cattle. Bovidae species relatives of true cattle. Breeds and genotypes of cattle. Cattle reproduction and calf rearing technology. Milk and meat production. Possibilities for cattle genetic improvement. Cattle breeding methods. Sheep farming: Economic significance and origin of the sheep. Breeds of sheep. Sheep reproduction. Sheep selection and genetic improvement. Breeding methods. Sheep milk, meat and wool production. Goat farming: Economic importance and origin of the goat. Goat breeds. Goat reproduction. Goat selection and breeding. Breeding methods. Pig farming: Economic importance and origin of

		the domestic pig. Breeds and types of pigs. Pig reproduction. Selection in pig production. Pig breeding methods. Technological solutions in farm pig production. Poultry farming: Economic importance and origin of poultry. Chicken breeds and hybrids. Turkey breeds and hybrids. Breeds of domesticated guinea fowl, geese and ducks. Chicken egg and broiler meat production. Selection in poultry production. Equine farming and management: Origin and evolution of the horse. Breeds of horses. Equine species. Exterior scoring. Horse breeding methods. Horse utilization and housing **Practicals** Approach, handeling and fixation of domestic animals. Exterior assesment of the domestic animals. Instruments for exterior evaluation and body measures. Assesment of the quality of the wool and the hide. Assesment of the body condition and it's scoring. Exterior and production types od domestic animals. Animal identification. Assesment of the age of domestic animals. Herd book recording in animal production. Scoring and licensing of breeding animals. Economic importance and origin of the cattle. True cattle and their closely related species. Breeds of cattle. Cattle reproduction and rearing newborn calves. Cattle milk and meat production. Possibilities for genetic improvement of dairy cattle. Cattle breeding methods. Economic importance and origin of the sheep. Breeds of sheep. Sheep reproduction. Sheep selection and breeding. Sheep breeding methods. Sheep milk, meat and wool production. Economic importance and origin of goats. Goat breeds. Goat reproduction. Selection methods in goat production. Goat breeding strategies. Economic importance and origin of the domestic pig. Breeds of pigs. Pig reproduction and artificial insemination. Selection of breeding boars and gilts. Pig breeding methods. Technological phases in intensive pig production system. Economic importance and origin of the poultry. Chicken breeds and hybrids. Domestic turkey breeds and hybrids. Domesticated guinea fowl, geese and ducks. Chicken egg and broiler meat production. Selection in poultry production. Origin and evolutive stages of the domestic horse. Breeds of horses. Equine species relatives of the domestic horse. Horse exterior scoring. Horse breeding methods. Facilities and equipment for rearing horses. Horse utilization and housing
13.	Inter-connection with other subjects (courses)	
14.	Detailed description of teaching and working methods for the subject	Theory classes: interactive (lectures in large group with discussion and active participation of the students). Practicals: practicals and other ways of work with smaller groups Written assay: learning with use of referent literature and internet, preparing written assay; presentation and discussion about the written assay
15.	Total available time	100 hours Theory classes: 2 hours/per week (30 hours) Practicals: 2 hours/per week (30 hours)

16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	30
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours	30
		16.3.	Practice: total hours	
17.	Other forms of activities	17.1.	Project assignments: hours	
		17.2.	Individual tasks: hours	
		17.3.	Self-directed learning	40
18.	Conditions for receiving authorization			

19. Assessment methods

Type of activity	*Points*	
	minimum	*maximum*
Attendance on theory classes	12	15
Attendance and activity on practicals	12	15
Written assay	6	10
First continuous wrriten exam	10	15
Second continuous wrriten exam	10	15
Final exam	10	30
Total:	60	100

19.1.	Tests: points	
19.2.	Written essay/project assignment, oral or wrriten presentation: points	
19.3.	Final exam: points	

20.	Grading criteria (points/grade)	up to 59 points	5 (five) (F)
		60 to 68 points	6 (six) (E)
		69 to 76 points	7 (seven) (D)
		77 to 84 points	8 (eight) (C)
		85 to 92 points	9 (nine) (B)
		93 to 100 points	10 (ten) (A)
21.	Method of monitoring the quality of teaching process	Report from the Self-evaluation committee and anonymous student survey	

22. Literature

Mandatory literature

No.	Author	Title	Publisher	Year
22.1. 1.		*Digital learning materials from the theoretical and practical teaching*		
2.				

		3.				
		4.				
		5.				
		6.				
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year
		1.	C.J.C. Phillips	*Principles of Cattle Production*	CABI Publishing	2001
		2.	D.L. Hartl and A.G. Clark	*Principles of Population Genetics (third edition)*	Sinauer Associates Inc.	1997
		3.	S. Leeson and J.D. Summers	*Broiler Breeder Production*	Nottingham University Press	2009

No. 21

Attachement no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Anymal Hygiene 2**			
2.	Code	VM2023-224			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Animal Hygiene and Environmental Protection			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Second (II)	Semester	Fourth (IV)
7.	Course load expressed in ECTS credits				
8.	Teacher (leading teacher, in case of multiple teacher)	Assist. Prof. Miroslav Kjosevski, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course	For attending: Decision on Study Rules for first and second cycle integrated studies (undergraduate studies) and second cycle studies (postgraduate studies) at FVMS (UG 554, 26.07.2021) plus listned Animal Hygiene 1 For passing: passed subjects: Cell biology, Chemistry, Biophysics and			

		Animal Hygiene 1
11.	Objectives of the course program (competencies) and learning outcomes	The main objectives of teaching the subject Animal Hygiene 2 are: getting familiar with and acquiring knowledge about hygiene during the accommodation and breeding of individual species and categories of animals, as well as getting to know the hygienic aspects when performing the most significant management practices in animal breeding, while studying the effects of hygiene on the health, welfare, and production of animals. **Theoretical lectures** Through the theoretical lectures of this subject, students will acquire the following competencies: selection of a suitable location for animal facilities, optimization of space and significant structures and materials for the construction of animal facilities with their impact on the management and health of animals; hygienic practices during milking of animals, their transport, maintenance of body hygiene (skin and hooves); maintaining hygiene and health of animals used for work and sport; management of fertilization and use of waste in animal husbandry; techniques for non-harmful disposal of carcasses; as well as competences for hygiene practices when housing individual species and categories of animals. **Practical lectures** With the practical lectures, it is envisaged that the student will acquire knowledge and skills for choosing an appropriate location and properties of construction materials for facilities for housing animals; determining the heat balance of animal facilities; practical hygiene during milking and maintenance of animal body hygiene; determination of capacities and needs of animal farms in relation to the production of waste and carcasses, as well as techniques for their management; production, design and determination of technological standards of facilities for accommodation of different types and categories of animals.
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	**Theoretical lectures** Location, hygiene, structures, and materials of animal facilities. Mammary gland hygiene and milking. Hygiene of newborn and young animals. Hygiene during animal transport. Animal body hygiene. Hygiene of working animals and animals used for sport. Removal and utilization of waste in intensive farm production. Safe disposal of carcasses. Hygiene during the housing poultry - chickens, turkeys, ducks, geese, ostriches, pigeons. Hygiene during the housing of pigs. Hygiene during the housing of dairy cows. Hygiene during the housing of beef cattle. Hygiene during the housing of sheep and goats. Hygiene during the housing of horses. Hygiene during the housing of fur and exotic animals. Hygiene during the housing of dogs and cats. **Practical lectures** Selection of location and materials for animal facilities. Calculation of heat balance of facilities for domestic animals. Practical hygiene aspects in dairy animals. Practical aspects for maintaining animal body hygiene. Capacity planning of waste production and waste management facilities. Capacity planning of facilities for dead animals and animal waste and handling methods. Design and technological-technical norms of facilities

		for housing poultry. Design and technological-technical norms of facilities for accommodation of pigs. Design and technological-technical norms of facilities for accommodation of dairy cows. Design and technological-technical standards of facilities for housing fattened cattle. Design and technological-technical norms of facilities for housing sheep and goats. Design and technological-technical norms of facilities for accommodation of horses. Housing design for fur and exotic animal. Design and placement of dogs in shelters and kennels. Practical aspects of keeping dogs and cats as pets. Theoretical lectures: interactive lectures in a large group, with discussion, student presentations and their additional activities Practical lectures: laboratory practice, work in small groups, field visits, homework, and presentations Seminar paper: learning using professional literature and the Internet, preparation of a seminar paper (essay/poster); presentation and discussion of the seminar paper. Project tasks: work on an individual/group project based on research and measurements with presentation of results		
13.	Inter-connection with other subjects (courses)			
14.	Detailed description of teaching and working methods for the subject	Theoretical lectures: interactive lectures in a large group, with discussion, student presentations and their additional activities Practical lectures: laboratory practice, work in small groups, field visits, homework, and presentations Seminar paper: learning using professional literature and the Internet, preparation of a seminar paper (essay/poster); presentation and discussion of the seminar paper. Project tasks: work on an individual/group project based on research and measurements with presentation of results		
15.	Total available time	100 hours Theoretical lectures: 2 hours a week (30 hours) Practical lectures: 2 hours a week (30 hours)		
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	30
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours	30
		16.3.	Practice: total hours	
17.	Other forms of activities	17.1.	Project assignments: hours	10
		17.2.	Individual tasks: hours	10
		17.3.	Self-directed learning	20
18.	Conditions for receiving authorization	To obtain a signature, the student is obliged to attend at least 70% of the theoretical and practical lectures held. The student is obliged to have acquired the right to sign and to pass the two continuous tests from the practical part (minimum 6 points scored on one continuous test) in order to be able to take the theoretical - final part of the exam.		

19. Assessment methods

Type of activity	Points	
	minimum	maximum
Attendance at theoretical lectures	8	12
Attendance at practical lectures	6	9
Activity at theoretical lectures	0	3
Activity at practical lectures	0	6
Accepted seminar paper or project assignment	6	10
Passed 2 continuous tests practical part	2x6 (12)	2x10 (20)
Passed theoretical part/final exam	21	40
Total points required to pass the exam*	60	100

Activity at the lectures (theoretical and practical) and the seminar paper/project assignment are optional and the student decides independently whether to join the activities and acquire additional points.

**When scoring points with decimal values, if the decimal value is equal to or greater than 5, then it is rounded up to the whole number with a higher value. For example, If the student obtained 65.5 points, then it is considered that the student obtained a total of 66 points for this subject.*

19.1.	Tests: points	
19.2.	Written essay/project assignment, oral or wrriten presentation: points	
19.3.	Final exam: points	

20.	Grading criteria (points/grade)	up to 59 points	5 (five) (F)
		60 to 68 points	6 (six) (E)
		69 to 76 points	7 (seven) (D)
		77 to 84 points	8 (eight) (C)
		85 to 92 points	9 (nine) (B)
		93 to 100 points	10 (ten) (A)
21.	Method of monitoring the quality of teaching process	Report from the Self-evaluation committee and anonymous student survey	

22. Literature

Mandatory literature

No.	Author	Title	Publisher	Year
22.1. 1.	Miljan Erbez, Aleksandar Komadina, Blanka Křivánková	*HANDBOOK FOR DAIRY COWS HOUSING*	GEOtest a.s. Brno, Czech Republic	2023

		2.	NA	*DAIRY HOUSING MANAGEMENT VOLUME 1*	VEEPRO HOLLAND Information centre for Dutch cattle	NA
		3.	NA	*THE ASSOCIATION OF SHELTER VETERINARIANS' GUIDELINES FOR STANDARDS OF CARE IN ANIMAL SHELTERS Second Edition*	NA	2022
		4.	Andres Aland and Thomas Banhazi	*Livestock housing Modern management to ensure optimal health and welfare of farm animals*	Wageningen Academic Publishers, The Netherlands	2013
		5.	Geoffrey C. Mrema, Lawrence O. Gumbe, Hakgamalang J. Chepete, Januarius O. Agullo	*Rural structures in the tropics design and development*	FAO Rome	2011
		6.	R. J. Collier with J. L. Collier	*Environmental Physiology of Livestock*	John Wiley & Sons	2012
		7.	Jeroen Dewulf and Filip Van Immerseel	*Biosecurity in animal production and veterinary medicine from principles to practice*	NA	2019
		8.	William G. Bickert, Brian Holmes, Kevin Janni, David Kammel, Richard Stowell, Joe Zulovich	*Dairy Freestall Housing and Equipment*	NA	2000
		9.	J. A. Clark, Publisher Butterworth-Heinemann	*Environmental Aspects of Housing for Animal Production*	NA	2013

		10.	NA	*Dairy Housing and Manure Management Training Manual and Guide*	NA	2017
		11.	Dr. Bivek Ghimire, Dr. Santosh Chhetri	*Basics of Farm Housing and Biosecurity for Diploma in Agriculture (Animal Science)*	Heritage Publishers & Distributors Pvt. Ltd.	2024
		12.	Jibachha Shah	*Jibachha's Textbook of Basics Farm Housing & Biosecurity*	Jibachha publishing	2023
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year
			SNV Dairy Training Center	Dairy Housing and Manure Management Training Manual and Guide	SNV EDGET Project	2017

No.22

Attachement no. 3		**Integrated first and second cycle of studies**
1.	Program course title	**Microbiology 2** *(bacteriology and mycology)*
2.	Code	VM2023-225
3.	Study program	Veterinary medicine
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Microbiology and Immunology
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies

6.	Academic year / semester	Year	Second (II)	Semester	Fourth (IV)
7.	Course load expressed in ECTS credits	4.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Slavcho Mrenoshki, PhD Prof. Iskra Cvetkovikj, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course	For attending: Decision on Study Rules for first and second cycle integrated studies (undergraduate studies) and second cycle studies (postgraduate studies) at FVMS (UG 554, 26.07.2021) plus listened Microbiology 1 For passing: passed Microbiology 1			
11.	Objectives of the course program (competencies) and learning outcomes	Microbiology 2 is a preclinical subject through which students achieve basic knowledge of the bacteria and fungi, as a foundation for further study of pathology, infectious diseases and other clinical subjects. The objectives of the curriculum are: (i) introduction to the structure of bacteria, their multiplication, nutrition and metabolism; (ii) acquaintance with the most important bacterial genera/species from a veterinary and zoonotic point of view, including the diseases they cause; (iii) introduction to the general characteristics of the fungi along with the most important diseases for veterinary medicine they cause, and (iv) introduction to the principles, use, interpretation and significance of diagnostic tests in bacteriology and mycology.			
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	*Theoretical teaching (lectures)* Introduction to bacteriology. Morphology and classification of the bacteria. Nutrition, growth, ecology and metabolism in bacteria. Sterilization and disinfection. Antimicrobial chemotherapy. Antimicrobial resistance. Microorganism-animal interaction. Genetics in bacteria. Borrelia. Treponema. Brachyspira. Leptospira. Helicobacter. Campylobacter. Lawsonia. Bartonella. Brucella. Neisseria. Bordetella. Taylorella. Dichelobacter. Francisella. Moraxella. Pseudomonas. Burkholderia. Aeromonas. Salmonella. Proteus. Escherichia. Yersinia. Bacteroides. Fusobacterium. Pasteurella. Mannheimia. Haemophilus. Actinobacillus. Riemerella. Staphylococcus. Streptococcus. Micrococcus. Bacillus. Paenibacillus. Clostridium. Lactobacillus. Listeria. Erysipelotrix. Actynomyces. Actinobaculum. Arcanobacterium. Dermatophilus. Rhodococcus. Nocardia. Corynebacterium. Mycobacterium. Mycoplasma. Rickettsialles. Coxiella. Ordo Chlamydiales. General mycology. Candida albicans. Cryptococcus neoformans. Malassezia pachydermatis. Aspergillus. Penicillium. Dermatophytes (Microsporum. Trichopyton). Coccidioides immitis/posadasii. Histoplasma capsulatum. Blastomyces dermatitidis. Sporothrix schenckii. Mycotoxins and mycotoxicosis. *Practical teaching (exercises)* Introduction to the laboratory diagnostics of bacteria and fungi. Precautions and safety in the laboratory. Sampling, packing and samples			

		transportation for bacteriological laboratory testing. Reception of the samples in the laboratory. Practical aspects of sterilization. Microscopic examination of bacteria. Isolation of bacteria. Biochemical examination of bacteria. Use of live (laboratory) animals for diagnosis. Resistotyping. Antibiogram. Practical application of serological and DNA detection methods in the diagnostics of bacterial infections. Mastitis. Diagnosis of fungal infections and mycotoxicosis. Examples of diagnostics of bacterial and fungal diseases in animals and interpretation of results.		
13.	Inter-connection with other subjects (courses)	Microbiology 1 and Veterinary Immunology		
14.	Detailed description of teaching and working methods for the subject	*Theoretical teaching*: interactive (lectures in a large group with discussion and engagement of students). *Practical teaching*: exercises in small groups		
15.	Total available time	100 hours Theory classes: 2 hour per week (30 hours) Practicals: 2 hours per week (30 hours)		
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	30
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours	30
		16.3.	Practice: total hours	
17.	Other forms of activities	17.1.	Project assignments: hours	
		17.2.	Individual tasks: hours	40
		17.3.	Self-directed learning	
18.	Conditions for receiving authorization			
19.	Assessment methods			
	19.1.	Tests: points		Four tests in the semester - 2 for the lectures material and 2 for the exercises material (15 questions x 1 points per question = 15 points per test; in total possibility to achieve 60 points)
	19.2.	Written essay/project assignment, oral or wrriten presentation: points		
	19.3.	Final exam: points		25 points
20.	Grading criteria (points/grade)		up to 59 points	5 (five) (F)
			60 to 68 points	6 (six) (E)
			69 to 76 points	7 (seven) (D)
			77 to 84 points	8 (eight) (C)
			85 to 92 points	9 (nine) (B)
			93 to 100 points	10 (ten) (A)
21.	Method of monitoring the quality of teaching process		Report from the Self-evaluation committee and anonymous student survey	
22.	Literature			
	22.1.	Mandatory literature		

		No.	Author	Title	Publisher	Year
		1.	Department teachers	*Lectures in the form of a Power Point presentation (in electronic and/or printed form)*		
		2.	Department teachers	*Manuals/scripts for exercises prepared by the department*		
		3.	Naglic, T., Hajsig, D., Madic, J. i Pinter, Lj.	*Veterinary microbiology, Special bacteriology and mycology.*	Zagreb University Textbooks	2005
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year
		1.	McVey D.S., Kennedy M., Chengappa M.M., Wilkes R. 2.	*Veterinary microbiology*	Wiley Blackwell	2020
		2.	Quinn P.J., Markey, B.K., Leonard F.C., Fitzpatrick F.C., Fanning S. A	*Concise Review of Veterinary Microbiology.(2nd Ed.)*	John Wiley and Sons Ltd.	2016
		3.	Talaro, K. and Chess B.	*Foundations in Microbiology (10th Ed.)*	McGraw Hill.	2017

No. 24

Attachement no. 3		**Integrated first and second cycle of studies**
1.	Program course title	**Veterinary Immunology**
2.	Code	VM2023-226
3.	Study program	Veterinary medicine
4.	Organizer of the study program (unit, i.e. institute, department,	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Microbiology and Immunology

	section)				
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Second (II)	Semester	Fourth (IV)
7.	Course load expressed in ECTS credits	3.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Slavcho Mrenoshki, DVM, MSc, PhD Prof. Iskra Cvetkovikj, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course	For attending: Decision on Study Rules for first and second cycle integrated studies (undergraduate studies) and second cycle studies (postgraduate studies) at FVMS (UG 554, 26.07.2021) plus listened Microbiology 1			
11.	Objectives of the course program (competencies) and learning outcomes	Veterinary immunology as important preclinical subject provide the introduction of the animal immune system and defense of the organism against foreign agents, and represent the basis for understanding pathological physiology, pathology, and infectious diseases in animals. The objectives of this subject are: (i) introduction to the cells, tissues and organs of the immune system system, participants in the immune reaction, and types of immunity; (ii) introduction to the the general principles and mechanisms of immunopathology (autoimmune diseases, hypersensitivity and immunodeficiencies), tumor and transplantation immunology; (iii) introduction to the principles, use and interpretation of the immunological/serological tests in the diagnosis of infectious diseases in animals.			
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	*Theoretical teaching (lectures)* Introduction to the veterinary immunology. Evolution and characteristics of the immune system in animals. Cells, organs and tissues of the immune system. Cytokines. Antigens. B-lymphocytes and antibodies. T-lymphocytes. Antigen presentation. Major histocompatibility complex. Immunological tolerance. Monitoring the immune response. Immunodiagnostic methods. Innate immunity (phagocytosis, complement, inflammation, interferons). Acquired immunity (colostrum, immunity in young animals, vaccines). Immunologically response to bacterial, viral, fungal and parasitic infections. Tumor immunology. Hypersensitivity (allergies). Transplantation immunology. Autoimmunity. Immunodeficiencies. Immunomodulation and immunotherapy. *Practical teaching (exercises)* Introduction to serological reactions. Monoclonal antibodies. Radioimmunological tests. Immunofluorescence tests. Immunoenzymatic tests. Precipitation. Antibody titration. Agglutination. Viral hemagglutination and its inhibition. Complement fixation. Tests that are performed in a live system (neutralization tests). Tests for the detection of the cellular immune response. Use of fast immunochromatographic tests. Flow cytometry in veterinary immunology. Diagnostic application of immunological tests.			
13.	Inter-connection with other subjects (courses)	Microbiology 1 and Microbiology 2.			

14.	Detailed description of teaching and working methods for the subject	*Theoretical teaching*: interactive (lectures in a large group with discussion and engagement of students). *Practical teaching*: exercises in small groups		
15.	Total available time	75 hours Theory classes: 1 hour/per week (15 hours) Practicals: 2 hours/per week (30 hours)		
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	15
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours	30
		16.3.	Practice: total hours	
17.	Other forms of activities	17.1.	Project assignments: hours	
		17.2.	Individual tasks: hours	
		17.3.	Self-directed learning	30
18.	Conditions for receiving authorization			

19.	Assessment methods			
	19.1.	Tests: points		Four tests in the semester - 2 for the lectures material and 2 for the exercises material (15 questions x 1 points per question = 15 points per test; in total possibility to achieve 60 points)
	19.2.	Written essay/project assignment, oral or wrriten presentation: points		
	19.3.	Final exam: points		25 points
20.	Grading criteria (points/grade)		up to 59 points	5 (five) (F)
			60 to 68 points	6 (six) (E)
			69 to 76 points	7 (seven) (D)
			77 to 84 points	8 (eight) (C)
			85 to 92 points	9 (nine) (B)
			93 to 100 points	10 (ten) (A)
21.	Method of monitoring the quality of teaching process		Report from the Self-evaluation committee and anonymous student survey	

22.	Literature					
	22.1.	Mandatory literature				
		No.	Author	Title	Publisher	Year
		1.	Department teachers	*Lectures in the form of a Power Point presentation (in electronic and/or printed form)*		
		2.	Department teachers	*Manuals/scripts for exercises prepared by the department*		
		3.				
	22.2.	Additional literature				

		No.	Author	Title	Publisher	Year
		1.	Tizard I.	*Veterinary immunology*	Elsevier	2018
		2.	Day J. M. and Schultz D.R.	*Veterinary immunology Principles and practise*	CRC Press	2014
		3.				

No. 25

Attachement no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Pathophysiology 1**			
2.	Code	VM2023-311			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Pathophysiology			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Third (III)	Semester	Fifth (V)
7.	Course load expressed in ECTS credits	4.5			
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Igor Ulchar, PhD Prof. Irena Celeska, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course	For attending: Decision on Study Rules for first and second cycle integrated studies (undergraduate studies) and second cycle studies (postgraduate studies) at FVMS (UG 554, 26.07.2021) For passing the course: All prerequisite courses mentioned in point 13, and propositions described in point 18.			
11.	Objectives of the course program (competences) and learning outcomes	Basic principles of pathological processes, control systems and mechanisms of their failure. Theory classes comprise following competences: basic principles of pathophysiology; pathologic mechanisms in cell; mechanisms of inflammatory reaction including febrile reaction and regeneration process; disorders of immunity; mechanisms of pain; disorders in body fluids; disorders in metabolism of minerals and vitamins; pathogenesis of thumors; pathogenesis of endocrinopathies; mechanism of stress reaction; disorders of thermoregulation mechanisms; oxidative stress; disorders of muscular system; neurological disorders; hereditary diseases in domestic animals. Practical teaching (practicals) comprise following competences: definition and basic concepts of laboratory methods used in veterinary clinical pathology; preparing biological samples in companion and farm animals; laboratory instruments and equipment, handling with samples; analytical stage of biological samples; post-analytical stage and interpretation of results; laboratory tests for detection of acid-base balance; laboratory tests for mineral status; cytological diagnostics of tumors; endocrinological tests; parameters for detection of stress in animals; laboratory tests for detecting oxidative stress; laboratory tests for indicators of myopathy;			

		investigation of cerebrospinal fluid; laboratory tests for diagnostics of genetic diseases.
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	**Theory classes: teaching chapter (learning outcome)** 1. Basic principles of pathophysiology (Definition of terms health and disease) 2. Disorders of cell function (Knowledge of pathological mechanisms of cell injury) 3. Stress reaction (Knowledge of mechanism of stress reaction) 4. Oxidative stress (Knowledge of basic principles of oxidative stress and its significance in pathological process) 5.-8. Inflammation and healing process (Knowledge of mechanisms of inflammatory reaction, biological mediators in pathologic process, and mechanisms of healing process) 9.-10. Disorders of immunity (Knowledge of pathogenesis of immune-induced diseases) 11.-12. Pathophysiology of pain (Knowledge of mechanism of pain sensation) 13.-14. Pathophysiology of body fluids (Knowledge of abnormalities in blood plasma and other body fluids in pathological process) 15.-20. Disorders in metabolism of minerals and vitamins (Knowledge of mechanisms of disorders of mineral and vitamin metabolism) 21.-22. Pathophysiology of tumors (Knowledge of pathogenesis of neoplastic transformation) 23.-24. Disorders of endocrine system (Knowledge of pathogenesis of endocrinopathies) 25. Disorders of thermoregulation (Knowledge of disorders of thermoregulation mechanisms) 26. Disorders of muscular system (Knowledge of pathogenesis of myopathies) 27.-28. Neurological disorders (Knowledge of disorders in function of nervous system) 29.-30. Hereditary disorders in domestic animals (Knowledge of pathogenesis of some common genetic diseases in domestic animals) **Practical teaching: teaching chapter (learning outcome)** 1-3. Definition and basic concepts of laboratory methods used in veterinary clinical pathology (Knowledge of main laboratory analytical procedures in veterinary laboratory diagnostics) 4.-6. Preparing biological samples in companion animals (Knowledge of procedures for preparation of biological samples, handling, storing and identification, and types of biological samples in ambulatory conditions) 7.-9. Preparing biological samples in farm animals (Knowledge of procedures for preparation of biological samples, handling, storing and identification, and types of biological samples in field conditions) 10.-12. Laboratory instruments and equipment, handling with samples (Knowledge of basic laboratory procedures, analytical instruments and sample storing during analytical procedure) 13.-15. Analytical stage of biological samples (Knowledge of basic principles and types of analytical methods, their accuracy, precision and reliability) 16.-18. Post-analytical stage and interpretation of results (Knowledge of specifics of common tested analytes and their interpretation according referent values) 19.-21. Laboratory tests for detection of acid-base balance (Knowledge of basic parameters in disorders of acid-base balance in

		common domestic animals) 22.-24. Laboratory tests for mineral status (Knowledge of significance of mineral balance in common domestic animals and analytical methods used for its testing) 25.-27. Cytological diagnostics of tumors (Knowledge of basic principles and methods of taking cytological samples and criteria for their diagnostics) 28.-30. Endocrinological tests (Knowledge of parameters for indication of endocrinopathies, analytical methods for their identification) 31-33. Parameters for detection of stress in animals (Knowledge of metabolic parameters for detection and evaluation of stress intensity and duration) 34.-36. Laboratory tests for detecting oxidative stress (Knowledge of laboratory tests and parameters for indication of oxidative stress and its disorders in certain conditions) 37.-39. Laboratory tests for indicators of myopathy (Knowledge of laboratory tests for detection of muscular disorders in various animal species) 40-42. Examination of cerebrospinal fluid (Knowledge of methods for sampling cerebrospinal fluid, biochemical analysis and cellular evaluation) 43.-45. Laboratory tests for diagnostics of genetic diseases (Knowledge of use of genetic tests for detection of genetic diseases)
13.	Inter-connection with other subjects (courses)	Prerequisite: Animal Anatomy 1 and 2; Histology and Embyology 1and 2; Cell biology; Biochemistry; Animal Physiology 1 and 2; Immunology Complementary: Basic Pathology; Special Veterinary Pathology Post requisite: Internal Diseases in Companion Animals and Equines 1-2; Internal Diseases in Farm Animals 1and 2
14.	Detailed description of teaching and working methods for the subject	**Theoretical teaching – lectures** Cabinet teaching with all students who reached the course. Teaching may be with or without the use of teaching aids or specimens. The essential characteristic is that there is no hands-on involvement of the students in the material discussed, but they are included in teaching process as active participants (interactive teaching). **Practical teaching (practical exercises) – laboratory and desk-based work** Teaching sessions where students themselves actively perform laboratory experiments, and use microscopes for the examination of specimens. It also includes work on documents and idea-formulation without the handling of animals, organs, objects or products. It is realised interactive with small groups of students. **Project assignments – supervised group work** Teaching sessions directed towards a smaller group of students during which they work as a team, on part of the theoretical aspects, prepared from manuscript notes, photocopied documents, articles and bibliographic references. Information is illustrated and knowledge extended by the oral presentation of audio-visual material, with opportunity for discussion with other students. **Individual tasks – supervised individual work** Teaching sessions directed towards a individual students during which they work on their own, on part of the theoretical aspects, prepared from manuscript notes, photocopied documents, articles and bibliographic references. Information is illustrated and knowledge extended by the oral presentation of audio-visual material, with

<table>
<tr><td></td><td></td><td colspan="3">opportunity for discussion with other students.
Self-directed learning – supervised self-learning
Sessions of individual students making use of defined teaching material provided by the Faculty or by course teacher(s). Gained knowledge is presented with written assay, which is matter of assessment by the course teacher.
Supervised group or individual work (project assignments, individual tasks and self-directed learning) is mandatory additional student activity, as optional opportunity for extending student’s knowledge about predicted learning outcomes. The type of this additional activity is chosen by students by their own, with consultation with course teacher(s), also the topic which would be concerned within this work. One student could realise various types of additional activities, but the total score of points gained with these activities could not be higher than maximal point score predicted for such activities in course programme. For realising additional activities, students have to use various digital teaching aids (e-learning) provided by the course teacher(s), or available on Faculty’s digital platform and from referent on-line databases, with access provided by the Faculty.
With additional activity student not expands his/her knowledge in certain learning outcome(s), but also improves his/her skills concerning information literacy and data management.
All types of teaching (theory classes, practicals, additional activity) are in general organised with physical presence, but if necessary, they could be organised on-line or hybrid (physical presence + on-line).</td></tr>
<tr><td>15.</td><td>Total available time</td><td colspan="3">125 hours
Theory classes: 2 hours/per week (30 hours)
Praticals: 3 hours/per week (45 hours)</td></tr>
<tr><td rowspan="3">16.</td><td rowspan="3">Forms of teaching activities</td><td>16.1.</td><td>Theoretical lectures: hours</td><td>30</td></tr>
<tr><td>16.2.</td><td>Practical lectures (laboratory, auditorial), seminars, team work: hours</td><td></td></tr>
<tr><td>16.3.</td><td>Practice: total hours</td><td>45</td></tr>
<tr><td rowspan="3">17.</td><td rowspan="3">Other forms of activities</td><td>17.1.</td><td>Project assignments: hours</td><td rowspan="3">37.5</td></tr>
<tr><td>17.2.</td><td>Individual tasks: hours</td></tr>
<tr><td>17.3.</td><td>Self-directed learning</td></tr>
<tr><td>18.</td><td>Conditions for receiving authorization</td><td colspan="3">For 15 weeks of attendance at lectures, i.e. practical exercises, a maximum of 2 points are awarded for lectures (0.13 points per week), i.e. a maximum of 3 points from exercises (0.2 points per week). For demonstrated activity in 15 weeks of lectures, i.e. practical exercises, an additional maximum of 2 points for lectures (0.13 points per week), i.e. a maximum of 3 points from exercises (0.2 points per week).
The minimum allowed number of unearned points due to justified absences according to Article 8 of the Decision on Study Rules for first and second cycle integrated studies (undergraduate studies) and second cycle studies (postgraduate studies) at FVMS (UG 554, 26.07.2021) is 0.6 points from lectures and 0.6 points from exercises. These points can be earned by the student in agreement with the course teachers through a colloquium or by completing a homework assignment given by the course teachers.
The theoretical part of the final exam carries a maximum of 40 points, and consists of 4 questions, each of which carries a maximum of 10 points. The practical part of the final exam carries a maximum of 40 points, and consists of 4 questions, each of which carries a maximum of 10 points.</td></tr>
</table>

19.	Assessment methods				
	19.1.	Attendance and activity on theory classes and practical exercises: points			Attendance on lectures: 2 points Activity on lectures: 2 points Attendance on exercises: 3 points Activity on exercises: 3 points
	19.2.	Tests: points			2 continuous assessments: 2x2.5 points = total 5 points; Each continuous assessment consists of 10 questions from the theoretical part and 10 questions from the practical part; The continuous assessment is considered passed if 6 questions from the theoretical part and 6 questions from the practical part are correct
	19.3.	Written essay/project assignment, oral or writen presentation: points			Project assignments / Individual tasks / Self-directed learning: 5 points
	19.4.	Final exam: points			Oral (or written, on student's request): from the theoretical part up to 40 points + from the practical part up to 40 points = total up to 80 points.
20.	Grading criteria (points/grade)			up to 59 points	5 (five) (F)
				60 to 68 points	6 (six) (E)
				69 to 76 points	7 (seven) (D)
				77 to 84 points	8 (eight) (C)
				85 to 92 points	9 (nine) (B)
				93 to 100 points	10 (ten) (A)
21.	Method of monitoring the quality of teaching process			Report from the Self-evaluation committee and anonymous student survey	

22.	Literature					
	22.1.	Mandatory literature				
		No.	Author	Title	Publisher	Year
		1.	RH Dunlop, C-H Malbert (eds.)	*Veterinary Pathophysiology*	Blackwell Publishing	2004
		2.	JF Zachary	*Pathologic Basis Of Veterinary Disease (6th Ed.)*	Elsevier	2017
		3.		*Teaching aids in textual form prepared by the course teachers*		
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year
		1.	I Tizard	*Veterinary Immunology (9th Ed.)*	Elsevier Saunders	2013

		2.	EC Feldman, RW Nelson, C Reusch, JC Scott-Moncrieff, E Behrend	*Canine & Feline Endocrinology (4th Ed.)*	Elsevier	2015
		3.	SP DiBartola	*Fluid, Electrolyte, and Acid-Base Disorders in Small Animal Practice (4th Ed.)*	Saunders Elsevier	2012

No. 26

Attachement no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**General Pharmacology**			
2.	Code	VM2023-312			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Pharmacology and Toxicology			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Third (III)	Semester	Fifth (V)
7.	Course load expressed in ECTS credits	4.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Romel Velev, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course	For attending: Decision on Study Rules for first and second cycle integrated studies (undergraduate studies) and second cycle studies (postgraduate studies) at FVMS (UG 554, 26.07.2021). For passing: passed Cell Biology, Biochemistry, Animal Anatomy 2, Hystology and Embriology 2, Animal Physiology 2 , Nutritious, Medicinal and Poisonous plants, Microbiology 2, Veterinary Immunology			
11.	Objectives of the course program (competencies) and learning outcomes	The *theoretical classes* aims to provide students with **a** comprehensive understanding of the following key concepts**:** Origin and nature of drugs**;**Types and forms of drugs**;** Preparation, dispensing, and storage of drugs**:** Application and dosage methods**;** Pharmacokinetics; Pharmacodynamics**;** Interactions and adverse reactions**.** The *practical teaching* focuses on the application of this knowledge in			

		real-world veterinary practice. It includes:Types and forms of drugs; Calculating and determining drug dosages; Methods of drug application**;** Prescribing, dispensing, storing, and disposing of drugs;Veterinary medicinal regulations; Sources of data on licensed medicines**.** This comprehensive approach ensures that students are not only familiar with the theory of pharmacology but are also equipped with the practical skills necessary for safe and effective drug use in veterinary medicine.		
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	**Theory classes:** 1-2 Introduction; 3-4 Pharmacology subject of study; 5-6 Origin of drugs; 7-8 Modern drug discovery and testing; 9-10 Pharmacotherapy; 11-12 Pharamceutical form of drugs; 13-14 Methods of drugs administration; 15-16 Doses and dosage of drugs; 17-22 Pharmacokinetics; 23-26 Pharmacodinamics; 27-28 Drug interactions; 29-30 Drugs side effects. **Practical classes**: 1-2 Intoduction: Method of conducting practical classes and review of available literature.History of veterinary medicine and animal treatment. 3-4 Division of drugs: Pharmaceutical and pharmacological division of drugs. 5-6 Names and designation (nomenclature) of drugs. Nomenclature of drugs, active substances, medicinal preparations and finished drugs.7-8 Valid legal regulations for veterinary drugs in the Republic of Macedonia 9-10 Control, circulation, records, issuance, storage method, expiration date, withdrawal of drugs, harmless disposal of drugs. Sources of information about drugs. 11-12 ATCvet-classification of drugs. 13-14 Methods of drug administration. Application of drugs in laboratory animals p/o, s/c, i/m, i/v, i/perit.15-16 Dosage of drugs. Measures in pharmaceutical practice. International System of Units (SI). Mass and volume. 17-18 Expression of doses when prescribing a prescription. Approximate measures.19-20 Taking blood from laboratory animals and determining drug concentrations in biological material. 21-22 Prescription of drugs I: What is a prescription? Components of a prescription: inscriptio, invocatio, ordinatio, subscriptio (order for preparation and order for dispensing), signature, nomen medici, nomen aegroti. 23-24 Prescription of drugs II: Prescription of magistral medicines; 25-26 Prescription of drugs III: Prescription of officinal medicines. General notes regarding the writing of the prescription (formulae officinales and formulae magistrales). 27-28 Prescription of drugs IV: Prescription of ready-made medicines. 29-30 Prescription of drugs V: Prescription of narcotic drugs and psychotropic substances.		
13.	Inter-connection with other subjects (courses)			
14.	Detailed description of teaching and working methods for the subject	Theory classes and seminars: interactive (lectures in group with discussion and active participation of the students). Practicals: auditory practicals, laboratory practicals and other ways of work.		
15.	Total available time	100 hours Theory classes: 2 hours/per week (30 hours) Practicals: 2 hours/per week (30 hours)		
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	30

		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours	30
		16.3.	Practice: total hours	
17.	Other forms of activities	17.1.	Project assignments: hours	
		17.2.	Individual tasks: hours	
		17.3.	Self-directed learning	40
18.	Conditions for receiving authorization	The condition for obtaining a signature from the subject teacher at the end of the semester includes several requirements: Students must meet the required attendance for both theoretical and practical classes throughout the semester; Students must pass the continuous knowledge test conducted during the semester. To qualify for the signature, students must earn at least **25%** of the total possible points on this test; If a student does not achieve at least **50% success** on the continuous knowledge test during the semester, they will be required to take a **remedial knowledge test** during the subsequent exam sessions. These conditions ensure that students actively engage with the subject matter and demonstrate a certain level of proficiency before being allowed to progress to the final exam. To take the final exam, the student must earn a minimum of points from attending theoretical and practical classes and a minimum of points from the continuous assessment (colloquium). Students who have earned more than 60 points from attending theoretical, practical classes and continuous assessment must also take the final exam.		

19. Assessment methods

Attendance at theoretical classes*:
min. 12 points – max. 15 points

Attendance and activity (knowledge) at exercises*:
min. 12 points – max. 15 points

*Attendance at classes: 60 - 70% 12 points
71 - 80% 13 points
81 - 90% 14 points
91 - 100% 15 points

Type of activity		*Points*	
		minimum	*maximum*
Attendance on theory classes		12	15
Attendance and activity on practicals		12	15
Continious wrriten exam		20	40
Final exam	Wrriten	10	20
	Oral	6	10
Total:		60	100

19.1.	Tests: points	
19.2.	Written essay/project assignment, oral or wrriten presentation: points	
19.3.	Final exam: points	

20.	Grading criteria (points/grade)	up to 59 points	5 (five) (F)
		60 to 68 points	6 (six) (E)

				69 to 76 points	7 (seven) (D)	
				77 to 84 points	8 (eight) (C)	
				85 to 92 points	9 (nine) (B)	
				93 to 100 points	10 (ten) (A)	
21.	Method of monitoring the quality of teaching process			Report from the Self-evaluation committee and anonymous student survey		
22.	Literature					
	22.1.	Mandatory literature				
		No.	Author	Title	Publisher	Year
		1.	Riviere, J., M. Papich	*Veterinary Pharmacology and Therapeutics, 10th ed.*	Wiley Blackwell	2018
		2.	Papich, M.G.	*Saunders Handbook of Veterinary Drugs. 3rd Ed.*	Elsevier Saunders	2011
		3.				
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year

No. 27

Attachement no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Basic Pathology**			
2.	Code	VM2023-313			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Pathology and forensic medicine			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Third (III)	Semester	Fifth (V)

7.	Course load expressed in ECTS credits	5.5		
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Dr. Trpe Ristoski, PhD Assoc. Prof. Ivica Gjurovski, PhD		
9.	Teaching language	English		
10.	Necessary prerequisites for attending and passing the course	For attending: Decision on Study Rules for first and second cycle integrated studies (undergraduate studies) and second cycle studies (postgraduate studies) at FVMS (UG 554, 26.07.2021) and passes Animal Anatomy 1, Animal Physiology 1, Microbiology 1		
11.	Objectives of the course program (competencies) and learning outcomes	Basic pathology is studied in the 5th semester and also introduces students to pathological processes and pathological conditions in the organism, with the goal to better understand the pathogenesis of diseases.		
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	Theoretical lectures: Introduction and history of pathology. Etiology. Degeneration and necrosis. Disorders in the circulatory system. Inflammation. Regeneration. Tumors, malformations and death. Immunopathology Practical course: Preparation and staining of the pathohistological preparations. Microscopic diagnostics of pathohistological preparations.		
13.	Inter-connection with other subjects (courses)			
14.	Detailed description of teaching and working methods for the subject	Theoretical teaching: interactive (lectures in a large group with discussion and engagement of students) Practical course: exercises (pathohistology) Seminar paper: studying by using professional literature and the Internet, preparing a seminar paper; presentationand discussion of the term paper		
15.	Total available time	137,5 hours Theory classes: 2 hours/per week (30 hours) Practicals: 3 hours/per week (45 hours)		
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	30
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours	45
		16.3.	Practice: total hours	
17.	Other forms of activities	17.1.	Project assignments: hours	
		17.2.	Individual tasks: hours	
		17.3.	Self-directed learning	62.5
18.	Conditions for receiving authorization	The student is responsible for actively following all the planned activities with which he earns points as part of the final assessment. The two continuous knowledge tests are written: First test: Introduction and history of pathology; Etiology; Degeneration; Necrosis; Disorders in the circulatory system. Second test: Inflammation; Regeneration; Tumors; Malformations and Death; Immunopathology. Complete oral and practical exam completed		
19.	Assessment methods			
	19.1.	Tests: points		One test- Minimum 10 maximum 20 points

				Total- Minimum 20 Maximum 40 points
	19.2.	Written essay/project assignment, oral or wrriten presentation: points		Minimum 5, Maximum 10 points
	19.3.	Final exam: points		Minimum 35 Maximum 50 points
20.	Grading criteria (points/grade)		up to 59 points	5 (five) (F)
			60 to 68 points	6 (six) (E)
			69 to 76 points	7 (seven) (D)
			77 to 84 points	8 (eight) (C)
			85 to 92 points	9 (nine) (B)
			93 to 100 points	10 (ten) (A)
21.	Method of monitoring the quality of teaching process		Report from the Self-evaluation committee and anonymous student survey	

22. Literature

22.1. Mandatory literature

No.	Author	Title	Publisher	Year
1.	C. Micevski and T. Ristosky	*Histopathological practicum*	Faculty of Veterinary Medicine, Skopje	2003
2.	Micevski C	*Necropsy of the domestic animals*	Vet. fac. Skopje	1998
3.	C. Micevski and T. Ristoski	*Canine distemper virus*	Vet. Fac., Skopje	2003
4.	Norman Chevile	*Ultrastructural pathology*		1994
5	Kumar, Cotran, Robbins	*Basic Pathology, 7th edition*		2003
6	Milijana Knezevikj and Milijan Jovanovikj	*Basic pathology*	Makarije	1999
7	Culjak K. and sur	*Basic veterinary pathology*	Horzetsky, Zagreb	1993
8	Sofrenovikj Gj	*Basic pathology*	Science book, Beograd	1990
9	Jubb K., Kennedy P., Plummer N	*Pathology of domestic animals*		1992
10	Chuljak K, Dudarikj F	*General Pathology of domestic animals*	Zag-Sar.	1990

22.2. Additional literature

No.	Author	Title	Publisher	Year

		1.				
		2.				
		3.				

No. 28

Attachment no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Parasitology and Parasitic Diseases 1**			
2.	Code	VM2023-314			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss. Cyril and Methodius University in Skopje Department of Parasitology and Parasitic Diseases			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Third (III)	Semester	Fifth (V)
7.	Course load expressed in ECTS credits	4.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Jovana Stefanovska, PhD Prof. Aleksandar Cvetkovikj, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course	For attending: Decision on Study Rules for first and second cycle integrated studies (undergraduate studies) and second cycle studies (postgraduate studies) at FVMS (UG 554, 26.07.2021) and passed Animal Anatomy 1, Animal Physiology 1 and Microbiology 1. For passing: See point 19.			
11.	Objectives of the course program (competencies) and learning outcomes	The study of the course Parasitology and parasitic diseases 1 consists of a theoretical and a practical part. The theoretical part studies the general insights of veterinary parasitology, morphology, biological characteristics, life cycles, pathogenesis and immunity, clinical signs, diagnostics, treatment and prophylaxis of the most important parasites from the groups Protozoa, Trematoda and Cestoda given in a taxonomical order. In the practical part, special emphasis is given to the morphology of adults and the morphology of the developmental forms of Protozoa, Trematoda and Cestoda, life cycles and diagnostic methods. The practical part is performed in a laboratory with microscopic and macroscopic parasitological preparations, micrometry, familiarization with the methods of determination of Protozoa, Trematoda and Cestoda and the methods for diagnosis of diseases caused by them. Objective: The objective of this course is to educate students about Protozoa, Trematoda and Cestoda and the diseases caused by them, which have a special significance in veterinary and public health. With the knowledge that the students will acquire from this course, they will be able to independently determine the parasitic Protozoa, Trematoda and Cestoda and diagnose, treat and prevent diseases in domestic animals caused by them, including parasitic zoonoses and anthropozoonoses. Learning outcomes: to prepare students to effectively manage parasitic			

		diseases caused by Protozoa, Trematoda and Cestoda in veterinary practice, contribute to public health efforts, and understand the broader implications of parasitology in animal and human health.
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	Theoretical classes: 1. Subject of parasitology, content of veterinary parasitology. Parasites and parasitism. Types and division of parasites. Evolution of parasites. Morphology, anatomy and physiology of parasites. Hosts of parasites (outcomes: understand the fundamentals of parasitology; define parasitism, distinguish between different types of parasites; explain the evolutionary processes that have shaped parasitic organisms; acquire detailed knowledge of the structural and functional aspects of parasites, explore the relationships between parasites and their hosts). 2. Infection/infestation with parasites. Epidemiology of parasitic diseases. Pathogenic effect of parasites on the host. Pathogenesis of parasitic diseases. Susceptibility and non- susceptibility of parasites. Immunity in parasitic diseases. Conditions for the emergence and spread of parasitic diseases. Diagnostics of parasitic diseases. The basis of the fight against parasitic diseases. Economic and health significance of parasitic diseases. Division of parasitic diseases. Treatment of animals infected/infested with parasites (outcomes: understand the epidemiology and pathogenesis of parasitic diseases; gain comprehensive knowledge about how parasitic infections spread within animal populations and the mechanisms by which parasites cause disease in their hosts; learn various techniques and approaches to accurately diagnose parasitic infections in animals; understand the fundamental principles of parasite control and prevention; recognize the potential public health implications of zoonotic parasitic diseases; classify parasitic diseases based on various criteria; learn about various antiparasitic drugs). 3. General characteristics and systematics of Protozoa. Phylum Euglenozoa, Class Kinetoplasta, Order Trypanosomatida, Family Trypanosomatidae, Genus *Trypanosoma*, Genus *Leishmania* (outcomes: describe the general characteristics of Protozoa, including their structure, life cycle, veterinary and public health importance; classify protozoans according to the current systematic hierarchy; differentiate the above genera and describe their life cycles; understand the aetiology, transmission, pathogenesis, clinical signs, and diagnosis of the diseases they cause; learn about prevention and control strategies of these diseases; discuss their public health significance). 4. Phylum Metamonada, Class Trepomonadea, Order Diplomonadidae, Family Hexamitidae, Genus *Hexamita* (*Spironucleus*). Order Giardiida, Family Giardiidae, Genus *Giardia* (outcomes: differentiate the above genera and describe their life cycles; understand the aetiology, transmission, pathogenesis, clinical signs, and diagnosis of the diseases they cause; learn about prevention and control strategies of these diseases; discuss their public health significance). 5. Phylum Parabasalia, Class Trichomonadea, Order Trichomonadida, Family Trichomonadidae, Genus *Trichomonas*, Genus *Tritrichomonas*, Genus *Tetratrichomonas*, Genus *Pentatrichomonas*, Genus *Trichomitus*. Family Dientamoebidae, Genus *Histomonas*. Phylum Amoebozoa, Class Archamoeba,

		Order Amoebida, Family Entamoebidae, Genus *Entamoeba* (outcomes: differentiate the above genera and describe their life cycles; understand the aetiology, transmission, pathogenesis, clinical signs, and diagnosis of the diseases they cause; learn about prevention and control strategies of these diseases; discuss their public health significance). 6. Phylum Apicomplexa, Class Conoidasida, Order Eucoccidiorida, Family Eimeriidae, Genus *Eimeria*, Genus *Cystoisospora (Isospora)* (outcomes: differentiate the above genera and describe their life cycles; understand the aetiology, transmission, pathogenesis, clinical signs, and diagnosis of the diseases they cause; learn about prevention and control strategies of these diseases; discuss their public health significance). 7. Family Cryptosporidiidae, Genus *Cryptosporidium*. Family Hepatozoidae, Genus *Hepatozoon*. Family Sarcocystiidae, Genus *Sarcocystis* (outcomes: differentiate the above genera and describe their life cycles; understand the aetiology, transmission, pathogenesis, clinical signs, and diagnosis of the diseases they cause; learn about prevention and control strategies of these diseases; discuss their public health significance). 8. Family Sarcocystiidae, Genus *Toxoplasma*, Genus *Neospora*, Genus *Hammondia*, Genus *Besnoitia* (outcomes: differentiate the above genera and describe their life cycles; understand the aetiology, transmission, pathogenesis, clinical signs, and diagnosis of the diseases they cause; learn about prevention and control strategies of these diseases; discuss their public health significance). 9. Order Piroplasmorida, Family Babesiidae, Genus *Babesia*. Family Theileridae, Genus *Theileria*, Genus *Cytauxzoon*. (outcomes: differentiate the above genera and describe their life cycles; understand the aetiology, transmission, pathogenesis, clinical signs, and diagnosis of the diseases they cause; learn about prevention and control strategies of these diseases; discuss their public health significance). 10. Phylum Ciliophora, Class Litostomatea, Order Trichostomatorida, Family Balantidiidae, Genus *Balantioides*. Family Pycnotrichidae, Genus *Buxtonella*. Kingdom SAR, Phylum Stramenopiles, Class Bigyra, Order Opalinata, Family Blastocystidae, Genus *Blastocystis*. Kingdom Bacteria, Family Anaplasmataceae, Genus *Anaplasma*. Family Ehrlichiaceae, Genus *Ehrlichia* (outcomes: differentiate the above genera and describe their life cycles; understand the aetiology, transmission, pathogenesis, clinical signs, and diagnosis of the diseases they cause; learn about prevention and control strategies of these diseases; discuss their public health significance). 11. General characteristics and systematics of flatworms (Trematoda and Cestoda). Order Echinostomatida, Family Fasciolidae, Genus *Fasciola*. Family Paramphistomidae, Genus *Paramphistomum*. Family: Echinostomatidae, Genus *Echinostoma* (outcomes: describe the general characteristics of flatworms, including their body structure, life cycle, veterinary and public health importance; classify flatworms according to the current systematic hierarchy; differentiate the above genera and describe their life cycles; understand the aetiology, transmission, pathogenesis, clinical signs, and diagnosis of the diseases they cause; learn about prevention and control strategies of these

		diseases; discuss their public health significance). 12. Order Plagiorchida, Family Dicrocoelidae, Genus *Dicrocoelium*. Family Prostogonomidae, Genus *Prostogonimus*. Order Opisthorchida, Family Opistorchiidae, Genus *Opisthorchis*. Order Strigeidida, Family Diplostomatidae, Genus *Alaria* (outcomes: differentiate the above genera and describe their life cycles; understand the aetiology, transmission, pathogenesis, clinical signs, and diagnosis of the diseases they cause; learn about prevention and control strategies of these diseases; discuss their public health significance). 13. Order Cyclophyllidea, Family Taenidae, Genus *Taenia*, Genus *Echinococcus* (outcomes: differentiate the above genera and describe their life cycles; understand the aetiology, transmission, pathogenesis, clinical signs, and diagnosis of the diseases they cause; learn about prevention and control strategies of these diseases; discuss their public health significance). 14. Family Dilepididae, Genus *Dipylidium*. Family Anoplocephalidae, Genus *Anoplocephala*, Genus *Moniezia*. Order Pseudophyllidea, Family Diphyllobothridae, Genus *Diphyllobothrium* (outcomes: differentiate the above genera and describe their life cycles; understand the aetiology, transmission, pathogenesis, clinical signs, and diagnosis of the diseases they cause; learn about prevention and control strategies of these diseases; discuss their public health significance). 15. Antiprotozoals and anthelmintics (trematocides and cestocides). Methods of control of protozoan, trematode and cestode infections (outcomes: learn about the most frequently used antiparasitic treatments for controlling the infections with protozoans, trematodes and cestodes; explain the principles of integrated parasite management in different animal species; discuss strategies for preventing and controlling parasitic infections in companion animals and livestock). Practicals: 1. Introduction to parasitological diagnostics. Collecting and sending material for parasitological analysis. Laboratory methods of diagnostics. Equipment and reagents in a parasitological laboratory. Microscopy and micrometry of parasites and pseudoparasites. Rules of classification of parasites (outcomes: understand the parasitological diagnostic techniques and their importance in veterinary medicine; learn proper procedures for collecting, handling, preserving, and transporting various types of samples for parasitological examination; learn the common laboratory techniques used in parasitological diagnosis; identify the essential equipment and reagents in a parasitology laboratory; develop skills in using microscopes to identify parasites and distinguish them from pseudoparasites; learn how to measure parasites using micrometry techniques; understand the principles of parasite taxonomy and classification). 2. Coprological, hematological, immunological, molecular, urological and dermatological methods in parasitological diagnostics (outcomes: understand the different methods used in a parasitology laboratory to detect parasites and parasitic elements). 3. Phylum Euglenozoa, Class Kinetoplasta, Order Trypanosomatida, Family Trypanosomatidae, Genus

		Trypanosoma, Genus *Leishmania* (outcomes: identify the key morphological features of the above genera and describe their life cycles; learn and distinguish their parasitic elements by microscopy; perform different diagnostic methods to diagnose the infection). 4. Phylum Metamonada, Class Trepomonadea, Order Diplomonadidae, Family Hexamitidae, Genus *Hexamita* (*Spironucleus*). Order Giardiida, Family Giardiidae, Genus *Giardia* (outcomes: identify the key morphological features of the above genera and describe their life cycles; learn and distinguish their parasitic elements by microscopy; perform different diagnostic methods to diagnose the infection). 5. Phylum Parabasalia, Class Trichomonadea, Order Trichomonadida, Family Trichomonadidae, Genus *Trichomonas*, Genus *Tritrichomonas*, Genus *Tetratrichomonas*, Genus *Pentatrichomonas,* Genus *Trichomitus*. Family Dientamoebidae, Genus *Histomonas*. Phylum Amoebozoa, Class Archamoeba, Order Amoebida, Family Entamoebidae, Genus *Entamoeba* (outcomes: identify the key morphological features of the above genera and describe their life cycles; learn and distinguish their parasitic elements by microscopy; perform different diagnostic methods to diagnose the infection). 6. Phylum Apicomplexa, Class Conoidasida, Order Eucoccidiorida, Family Eimeriidae, Genus *Eimeria*, Genus *Cystoisospora (Isospora)* (outcomes: identify the key morphological features of the above genera and describe their life cycles; learn and distinguish their parasitic elements by microscopy; perform different diagnostic methods to diagnose the infection). 7. Family Cryptosporidiidae, Genus *Cryptosporidium*. Family Hepatozoidae, Genus *Hepatozoon*. Family Sarcocystiidae, Genus *Sarcocystis* (outcomes: identify the key morphological features of the above genera and describe their life cycles; learn and distinguish their parasitic elements by microscopy; perform different diagnostic methods to diagnose the infection). 8. Family Sarcocystiidae, Genus *Toxoplasma*, Genus *Neospora*, Genus *Hammondia*, Genus *Besnoitia* (outcomes: identify the key morphological features of the above genera and describe their life cycles; learn and distinguish their parasitic elements by microscopy; perform different diagnostic methods to diagnose the infection). 9. Order Piroplasmorida, Family Babesiidae, Genus *Babesia*. Family Theileridae, Genus *Theileria*, Genus *Cytauxzoon*. (outcomes: identify the key morphological features of the above genera and describe their life cycles; learn and distinguish their parasitic elements by microscopy; perform different diagnostic methods to diagnose the infection). 10. Phylum Ciliophora, Class Litostomatea, Order Trichostomatorida, Family Balantidiidae, Genus *Balantioides*. Family Pycnotrichidae, Genus *Buxtonella*. Kingdom SAR, Phylum Stramenopiles, Class Bigyra, Order Opalinata, Family Blastocystidae, Genus *Blastocystis*. Kingdom Bacteria, Family Anaplasmataceae, Genus *Anaplasma*. Family Ehrlichiaceae, Genus *Ehrlichia* (outcomes: identify the key morphological features of the above genera and describe their life cycles; learn and distinguish their parasitic elements by microscopy; perform different diagnostic methods to diagnose the infection).

		11. Order Echinostomatida, Family Fasciolidae, Genus *Fasciola*. Family Paramphistomidae, Genus *Paramphistomum*. Family: Echinostomatidae, Genus *Echinostoma* (outcomes: identify the key morphological features of the above genera and describe their life cycles; learn and distinguish their parasitic elements by microscopy; perform different diagnostic methods to diagnose the infection). 12. Order Plagiorchida, Family Dicrocoelidae, Genus *Dicrocoelium*. Family Prostogonomidae, Genus *Prostogonimus*. Order Opisthorchida, Family Opistorchiidae, Genus *Opisthorchis*. Order Strigeidida, Family Diplostomatidae, Genus *Alaria* (outcomes: identify the key morphological features of the above genera and describe their life cycles; learn and distinguish their parasitic elements by microscopy; perform different diagnostic methods to diagnose the infection). 13. Order Cyclophyllidea, Family Taenidae, Genus *Taenia*, Genus *Echinococcus* (outcomes: identify the key morphological features of the above genera and describe their life cycles; learn and distinguish their parasitic elements by microscopy; perform different diagnostic methods to diagnose the infection). 14. Family Dilepididae, Genus *Dipylidium*. Family Anoplocephalidae, Genus *Anoplocephala*, Genus *Moniezia*. Order Pseudophyllidea, Family Diphyllobothridae, Genus *Diphyllobothrium* (outcomes: identify the key morphological features of the above genera and describe their life cycles; learn and distinguish their parasitic elements by microscopy; perform different diagnostic methods to diagnose the infection). 15. Practical application of antiparasitic treatments for controlling the infections with Protozoa, Trematoda and Cestoda (outcomes: learn how to apply specific medications against these infections).		
13.	Inter-connection with other subjects (courses)	Cell Biology, Animal Anatomy 1 and 2, Animal Physiology 1 and 2, Microbiology 1 and 2.		
14.	Detailed description of teaching and working methods for the subject	Theoretical classes: interactive (lectures in large group with discussion and active participation of the students). Practicals: practical work with small groups of students.		
15.	Total available time	100 hours Theory classes: 2 hours/per week (30 hours) Practicals: 2 hours/per week (30 hours)		
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	30
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours	30
		16.3.	Practice: total hours	
17.	Other forms of activities	17.1.	Project assignments: hours	
		17.2.	Individual tasks: hours	
		17.3.	Self-directed learning	40
18.	Conditions for receiving authorization			
19.	Assessment methods			
	19.1.	Tests: points	Presence: 12-15 points 2 Tests, 1-2.5points each Practical exam: 16-30 points	
	19.2.	Written essay/project assignment, oral or written presentation: points		

	19.3.	Final exam: points		30-50
20.	Grading criteria (points/grade)		up to 59 points	5 (five) (F)
			60 to 68 points	6 (six) (E)
			69 to 76 points	7 (seven) (D)
			77 to 84 points	8 (eight) (C)
			85 to 92 points	9 (nine) (B)
			93 to 100 points	10 (ten) (A)
21.	Method of monitoring the quality of teaching process		Report from the Self-evaluation committee and anonymous student survey	

22.	Literature					
	22.1.	Mandatory literature				
		No.	Author	Title	Publisher	Year
		1.	Domenico Otranto, Richard Wall	*Veterinary Parasitology, 5th Edition*	Wiley Blackwell	2024
		2.	Anne M. Zajac, Gary A. Conboy, Susan E. Little, Mason V. Reichard	*Veterinary clinical parasitology, 9th Edition*	Wiley Blackwell	2021
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year
		1.	Dwight D. Bowman.	*Georgis' Parasitology for Veterinarians, 11th Edition*	Elsevier Inc.	2021

No. 29

Attachement no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Animal Clinical Anatomy**			
2.	Code	VM2023-315			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Functional Morphology			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Third (III)	Semester	Fifth (V)
7.	Course load expressed in ECTS credits	3.0			
8.	Teacher (leading teacher, in case	Prof. Vlatko Ilieski, PhD			

	of multiple teacher)	Prof. Lazo Pendovski, PhD		
9.	Teaching language	English		
10.	Necessary prerequisites for attending and passing the course	For attending: Decision on Study Rules for first and second cycle integrated studies (undergraduate studies) and second cycle studies (postgraduate studies) at FVMS (UG 554, 26.07.2021) and passed Animal Anatomy 1, Animal Physiology 1, Microbiology 1 For passing: passed Animal Anatomy 2		
11.	Objectives of the course program (competencies) and learning outcomes	The theoretical and practical teaching of the subject Clinical Animal Anatomy aims to familiarize students with details of animal anatomy important for mastering clinical subjects: clinical anatomy of the head and neck, clinical anatomy of the forelimb and hindlimb, clinical anatomy of the thoracic cage, abdomen, and pelvic cavity. Students will learn to identify bones and external bony protrusions on a living animal, recognize the attachment sites of each muscle, the surgical approach to the cavities of the head, structures of the neck, organs and other anatomical structures in the thoracic and abdominal cavities, extremities, knowledge of the names and positions of openings associated with the nerves of the head, identification of the direction of movement and distribution of superficial nerves and blood vessels of the head, neck, body, and extremities.		
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	– Clinical Anatomy of the Head – Clinical Anatomy of the Neck. – Clinical Anatomy of the Forelimb – Clinical Anatomy of the Thoracic Cavity – Clinical Anatomy of the Abdominal Cavity – Clinical Anatomy of the Pelvic Cavity		
13.	Inter-connection with other subjects (courses)	Cell Biology, Animal Anatomy 1 and 2, Animal Physiology 1 and 2.		
14.	Detailed description of teaching and working methods for the subject	Theory classes: interactive (lectures in large group with discussion and active participation of the students; video presentations, slide presentations, computer interactive software). Practicals: practicals and other ways of work with smaller groups. Realized by work in dissectionvroom and work on anatomic models (work with native, fixed and plastinated models). Written assay: learning with use of referent textbooks and internet, preparing written assay; presentation and discussion about the written assay.		
15.	Total available time	75 hours Theory classes: 0 hours/per week (0 hours) Practicals: 3 hours/per week (45 hours)		
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	/
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours	45
		16.3.	Practice: total hours	
17.	Other forms of activities	17.1.	Project assignments: hours	10
		17.2.	Individual tasks: hours	10
		17.3.	Self-directed learning	10
18.	Conditions for receiving authorization	The student is obligated for active participation in all predicted activities for gaining points which are part of the final grading.		

<table>
<tr><td rowspan="4">19.</td><td colspan="5">Assessment methods</td></tr>
<tr><td>19.1.</td><td colspan="3">Tests: points</td><td>up to 60</td></tr>
<tr><td>19.2.</td><td colspan="3">Written essay/project assignment, oral or wrriten presentation: points</td><td>up to 10</td></tr>
<tr><td>19.3.</td><td colspan="3">Final exam: points</td><td>up to 30</td></tr>
<tr><td rowspan="6">20.</td><td colspan="2" rowspan="6">Grading criteria (points/grade)</td><td>up to 59 points</td><td>5 (five) (F)</td></tr>
<tr><td>60 to 68 points</td><td>6 (six) (E)</td></tr>
<tr><td>69 to 76 points</td><td>7 (seven) (D)</td></tr>
<tr><td>77 to 84 points</td><td>8 (eight) (C)</td></tr>
<tr><td>85 to 92 points</td><td>9 (nine) (B)</td></tr>
<tr><td>93 to 100 points</td><td>10 (ten) (A)</td></tr>
<tr><td>21.</td><td colspan="2">Method of monitoring the quality of teaching process</td><td colspan="2">Report from the Self-evaluation committee and anonymous student survey</td></tr>
<tr><td rowspan="11">22.</td><td colspan="5">Literature</td></tr>
<tr><td rowspan="2">22.1.</td><td colspan="4">Mandatory literature</td></tr>
<tr><td>No.</td><td>Author</td><td>Title</td><td>Publisher</td><td>Year</td></tr>
<tr><td colspan="5">1. L Konig H.E., Liebich H.-G. Veterinary anatomy of domestic animals. Schattauer(Stuttgart – new York) textbook and Colour Atlas, 2004
2. Sisson S., The anatomy of domestic animals. W.B. Saunders Company. Philadelphia and London, 1941
3. Dyce K.M., Sack W.O., Wensing C.J.G. Textbook of veterinary naatomy. W.B. Saunders Company. Philadelphia- London-Toronto-Sydmey_Montreal-Tokyou.1996
4. Evans E., de Lahunta A. Guide to the dissection of dog. W.B Saunders Company Philadelphia-London- Toronto. 1971
5. Evans E., Christensen G. Anatomy of the dog. W.B Saunders Company Philadelphia-London-Toronto. 1979
6. Nomina Anatomica Vetreinaria. Internationa committee on veterinary Gross anatomical Nomenclature, Gent, Belgium,1992
7. Jack S. Boyd and Callum Paterson. Colour Atlas of Clinical Anatomy of the Dog and Cat E-Book, 2nd Edition, ISBN : 9780723435907
8. Hilary Mary Clayton, Peter F. Flood, Diana S. Rosenstein , David Mandeville. Clinical anatomy of the horse . VI, 122 pp. ISBN: 9780723433026, 072343302X</td></tr>
<tr><td rowspan="5">22.2.</td><td colspan="4">Additional literature</td></tr>
<tr><td>No.</td><td>Author</td><td>Title</td><td>Publisher</td><td>Year</td></tr>
<tr><td>1.</td><td></td><td></td><td></td><td></td></tr>
<tr><td>2.</td><td></td><td></td><td></td><td></td></tr>
<tr><td>3.</td><td></td><td></td><td></td><td></td></tr>
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No. 30

Attachement no. 3		**Integrated first and second cycle of studies**
1.	Program course title	**Visual Diagnostic Methods and Physical Therapy**
2.	Code	VM2023-316
3.	Study program	Veterinary medicine

4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department for X ray Diagnostic and Physical Therapy			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Third (III)	Semester	Fifth (V)
7.	Course load expressed in ECTS credits	3.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Dine Mitrov, PhD (course leader) Prof. Lazo Pendovski, PhD Assoc. Prof. Elena Atanaskova Petrov, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course	For attending: Decision on Study Rules for first and second cycle integrated studies (undergraduate studies) and second cycle studies (postgraduate studies) at FVMS (UG 554, 26.07.2021) and passed Animal Anatomy 1 and Animal Physiology 1 For passing: passed Animal Anatomy 2, Animal Physiology 2, Micorbiology 2, Animal Hygiene 2, Basic Pathology and Pathophysiology 1			
11.	Objectives of the course program (competencies) and learning outcomes	Objectives of the course program (**competences**): Opportunity for students to gain knowledge about the importance of radiography, computed tomography and ultrasound diagnostics in veterinary medicine and their historical development. Also, an opportunity to learn what an X-ray machine, computed tomography scanner and ultrasound device look like with their parts and how they work. Acquiring skills in general and special methods of examining animals for rapid diagnosis as a prerequisite for an appropriate intervention or therapy. After completing the course and passing the exam, students will be able to independently perform X-ray and ultrasound examination methods. They will also be able to independently describe an X-ray, CT and ultrasound image by defining and explaining the changes (deviations from the physiology and topographic anatomy) in the tissues and organs of interest. Based on the above, students will be able to write findings in Macedonian and draw a diagnosis in Latin. Furthermore, they will be able to apply the necessary physical therapy methods to resolve the most common post-traumatic pathological conditions. Students will be prepared to assess the patient's condition after a clinical or surgical intervention and to predict the further course of the treated process.			
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	<u>Theoretical lectures</u> I. General Radiology: Introduction. X-rays. X-ray technique. Elements of radiographic pathology. II. Special Radiology: Digestive system. Respiratory and cardiovascular system. Urogenital system. Skeletal system. Forensic X-ray diagnostics. III. Basics of computed tomography: importance and possibilities of computed tomography, types of computed tomography machines, methods of use, recognition of contrasts in relation to the thickness of tissues, planes. Computed tomography of the head and neck: organization, classification, topography of organs and examination methods (muscles, oral cavity, nasal cavity, sinuses, cranial cavity,			

thyroid gland, esophagus, trachea and local lymph nodes, blood vessels). Computed tomography of the chest: organization, classification, topography of organs and examination methods (muscles, mediastinum, heart, lungs, thymus, diaphragm, local lymph nodes, blood vessels) Computed tomography of the abdomen and pelvis of soft tissues: organization, classification, topography of organs and examination methods (muscles, liver, stomach, spleen, pancreas, intestines, kidneys, ureters, bladder, uterus, accessory sex glands, uterus, lymph nodes, blood vessels). Computed tomography of the skeletal system: organization, classification of bones and joints and examination methods (bones of the head, forelimb, hindlimb, spine)

IV. Physical characteristics of ultrasound, description and characteristics of ultrasound devices. Terminology and interpretation of artifacts on ultrasound imaging. Ultrasound examination of the gastrointestinal and hepatobiliary systems. Ultrasound examination of the urogenital system and spleen. Ultrasound examination of the thorax.

V. Physical therapy: electrotherapy and electrodiagnostics, phototherapy, thermotherapy, hydrotherapy and massotherapy.

Practical classes

I. X-ray device and auxiliary parts. Physical properties of x-rays, projection effects, radiopacity (shadow intensity) of different tissues. Roentgenoscopy and radiography, X-ray technique, X-ray film and cassettes. Special X-ray diagnostics, examination with barium sulfate, transit time and evacuation of the contrast. Diagnostic analysis of radiographs, principles of analysis and determination of symptoms. Specialist examination of foreign bodies in ruminants. Respiratory system. Cardiovascular system. Urinary system. Genital system. Digestive system. Skeletal system. Practice of interpretation of radiographs.

II. Introduction to the computed tomography scanner and its usage (parts of the computer device, starting the system, patient position, patient registration, imaging, components, image reconstruction, tissue absorption values, artifact recognition, pitch factor, 3D reconstructions with additional image processing tools, imaging with and without contrast) Interpretation and comparison of CT scans of the head and neck of soft tissues: examination (muscles, oral cavity, nasal cavity, sinuses, cranial cavity, thyroid gland, esophagus, trachea and local lymph nodes, blood vessels). Interpretation and comparison of CT scans of the chest of soft tissues. (muscles, mediastinum, heart, lungs, thymus, diaphragm, local lymph nodes, blood vessels). Interpretation and comparison of CT scans of the abdomen and pelvis of soft tissues. (muscles, liver, stomach, spleen, pancreas, intestines, kidneys, ureters, bladder, uterus, accessory sex glands, uterus, lymph nodes, blood vessels) Interpretation and comparison of CT scans of the skeletal system (bones of the head, forelimbs, hindlimbs, spine).

III. Introduction to the ultrasound device, components and selection of an appropriate probe for examination. Interpretation of artifacts. Examination of the gastrointestinal and hepatobiliary systems. Examination of the urogenital system and spleen. Examination of the thorax in dogs and cats.

Practical application and demonstration of physical therapy: electrotherapy and electrodiagnostics, phototherapy, thermotherapy,

		hydrotherapy and massotherapy.			
13.	Inter-connection with other subjects (courses)				
14.	Detailed description of teaching and working methods for the subject	Theoretical lectures: interactive (lectures in a large group with discussion and student engagement). Practical classes: practice and other forms of work in smaller groups. Project tasks: learning using professional literature and the Internet, preparing tasks (essay/poster); presentation and discussion			
15.	Total available time	75 hours Theory classes: 2 hour/per week (30 hours) Practicals: 2 hours/per week (30 hours)			
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	30	
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours	30	
		16.3.	Practice: total hours		
17.	Other forms of activities	17.1.	Project assignments: hours	5	
		17.2.	Individual tasks: hours	5	
		17.3.	Self-directed learning	5	
18.	Conditions for receiving authorization				

19.	Assessment methods Method of assessment The student is responsible for actively following all planned activities that earn points as part of the final assessment. Colloquium (four: general radiology, special radiology with physical therapy, computed tomography and ultrasound diagnostics): written and oral Final colloquium: diagnostics of X-ray, CT and ultrasound images Complete final exam: oral ***The grade is entered by the course program leader or a teacher authorized by the leader.**			
	19.1.	Tests: points		
	19.2.	Written essay/project assignment, oral or wrriten presentation: points		
	19.3.	Final exam: points		
20.	Grading criteria (points/grade)		up to 59 points	5 (five) (F)
			60 to 68 points	6 (six) (E)
			69 to 76 points	7 (seven) (D)
			77 to 84 points	8 (eight) (C)
			85 to 92 points	9 (nine) (B)
			93 to 100 points	10 (ten) (A)
21.	Method of monitoring the quality of teaching process		Report from the Self-evaluation committee and anonymous student survey	

22.	Literature					
	22.1.	Mandatory literature				
		No.	Author	Title	Publisher	Year

		1.	Dine Mitrov	*Authorized lectures (presentations)*	Dine Mitrov	2005-2021
		2.	Branislav Petrovic, Anica Jankovic-Zagorcic	*Veterinary radiology*	FVM, Beograd	1985
		3.	Mensur Šehić	*General radiology in veterinary practice*	Janko, Zagreb	1995
		4.	Mensur Šehić	*Clinical Radiology in Veterinary Practice*	Zagreb	2002
		5.	Mensur Šehić, Vladimir Butkovic, Damir Zubnic, Damir Stanin	*Physical Medicine in the Diagnosis and Treatment of Domestic Animal*	Kratis, Zagreb	1997
		6.	Šehić, Mensur, Milan Matka	*Computed Tomography in the Diagnosis of Skull, Brain, and Spinal Pathologies in Veterinary Medicine*	Zagreb	2012
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year
		1.	Millis, D; L. Levine	*Canine Rehabilitation and Physical Therapy. 2nd ed.,*	Saunders Elsevier, Tennesse	2014
		2.	Kealy J. Kevin, Hester McAllister	*Diagnostic Radiology and Ultrasonography of the Dog and Ca*	4th Edition, Philadelphia	2004
		3.	Tobias Schwarz and Jimmy Saunders	*Veterinary computed tomography*	Wiley-Blackwell	2011

		4.	Sehic M., Stanin D., Butkovic V.	*Ultrasonography of thorax and abdomen in dogs*	GIPA, Zagreb	2006

No. 31

Attachement no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Clinical Biochemistry**			
2.	Code	VM2023-327			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Clinical Biochemistry and Cell Biology			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Third (III)	Semester	Sixth (VI)
7.	Course load expressed in ECTS credits	2.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Velimir Stojkovski, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course	For attending: Decision on Study Rules for first and second cycle integrated studies (undergraduate studies) and second cycle studies (postgraduate studies) at FVMS (UG 554, 26.07.2021) and passed Cell biology and Biochemistry			
11.	Objectives of the course program (competencies) and learning outcomes	Theory classes Clinical biochemistry studies the chemical composition of organisms during physiological and pathological processes in the living organism using chemical and physicochemical methods. As a discipline with a complex and complex character, it studies the regularities between physiological and pathological conditions, on the one hand, and the chemical and cellular composition of fluids and tissues, on the other. Also, in clinical biochemistry, methods with high analytical accuracy and precision are being developed for objective investigations of the chemical and cellular composition of biological fluids and tissues and establishing an accurate diagnosis. The main task of the course is for students to become familiar with basic clinical-biochemical diagnostics in veterinary medicine. All theoretical knowledge is checked and determined by students with practical laboratory work and exercises. Practicals During the practical teaching, students gain experience in taking material for analysis, analyzing the material and interpreting the results. Students are introduced to the basic analytical clinical-biochemical			

		methods important in veterinary medicine and the instruments used in the laboratory.		
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	Content of the subject program: Theory classes General concepts, methods and techniques in clinical biochemistry. Taking material for analysis. Errors that occur when the material is taken incorrectly. Basic methods for preparing the material for analysis. Water, electrolytes and trace elements. Acid-base balance. Carbohydrates. Lipids. Proteins. Non-protein nitrogenous compounds. Hemoproteins. Enzymes. Hormones. Vitamins. Liver function tests. The influence of drugs on the results of laboratory tests. Practicals Determination of electrolytes and trace elements. Examination of parameters of acid-base balance. Determination of glucose. Determination of total lipids, triglycerides and cholesterol. Determination of total proteins, albumins and fibrinogen. Determination of urea, uric acid, creatine and creatinine. Determination of hemoproteins in blood. Determination of enzymes (LDH, G-6PDH, SDH, GLDH, AST, ALT, CK, GGT, AP, ACP, CHE, LIPA, AMYL). Determination of hormones and vitamins. Liver function tests.		
13.	Inter-connection with other subjects (courses)			
14.	Detailed description of teaching and working methods for the subject	Theory classes: Interactive classes (lectures in large groups or mentored classes depending on the number of students, with discussion and active participation of the students,). Practicals: Practicals and other ways of work with smaller groups		
15.	Total available time	50 hours Theory classes: 1 hour/per week (15 hours) Practicals: 1 hour/per week (15 hours)		
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	15
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours	15
		16.3.	Practice: total hours	
17.	Other forms of activities	17.1.	Project assignments: hours	
		17.2.	Individual tasks: hours	
		17.3.	Self-directed learning	20
18.	Conditions for receiving authorization	- The presence of the student at theory and practical classes is a condition for obtaining a signature confirming attendance from the subject professor; - Class attendance will not be counted if the student is absent for more than 30% of the classes; - The student is exempt from the final exam by passing the practical exam, earning a minimum score in each continuous test and achieving a total of at least 60 points across all assessments; - The student can take the final exam by obtaining a signature confirming attendance in the theory and practical classes and passing the practical exam; The student can take the final exam in Clinical biochemistry after passing the exam in Biohemistry.		
19.	Assessment methods			

The student is obligated for active participation in all predicted activities for gaining points which are part of the final grading.
Tests (two): written
Test I: General concepts, methods and techniques in clinical biochemistry. Taking material for analysis. Basic methods for preparing the material for analysis. Water, electrolytes and trace elements. Acid-base balance. Carbohydrates. Lipids.
Test II: Proteins. Non-protein nitrogenous compounds. Hemoproteins. Enzymes. Hormones. Vitamins. Liver function tests. The influence of drugs on the results of laboratory tests.
Final exam: oral or written

Type of activity	Points	
	minimum	maximum
Attendance on theory classes	6	10
Attendance on practicals	6	10
Activity	6	10
Practical exam	6	10
Test I	9	15
Test II	9	15
Final exam	18	30
Total:	60	100

19.1.	Tests: points	
19.2.	Written essay/project assignment, oral or wrriten presentation: points	
19.3.	Final exam: points	

20.	Grading criteria (points/grade)	up to 59 points	5 (five) (F)
		60 to 68 points	6 (six) (E)
		69 to 76 points	7 (seven) (D)
		77 to 84 points	8 (eight) (C)
		85 to 92 points	9 (nine) (B)
		93 to 100 points	10 (ten) (A)
21.	Method of monitoring the quality of teaching process	Report from the Self-evaluation committee and anonymous student survey	

22. Literature

22.1. Mandatory literature

No.	Author	Title	Publisher	Year
1.	J. Kaneko, J. Harvey, M. Bruss	*Clinical biochemistry of domestic animals.6th ed.*	Academic press	2008
2.	Thrall, M.A., Weiser, G., Allison, R.W., Campbell, T.W.	*Veterinary Hematology, Clinical Chemistry and Cytology*	Third edition. Wiley Blackwell	2022
3.				

	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year
		1.				
		2.				
		3.				

No. 32

Attachement no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Pathophysiology 2**			
2.	Code				
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Pathophysiology			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Third (III)	Semester	Sixth (VI)
7.	Course load expressed in ECTS credits				
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Igor Ulchar, PhD Prof. Irena Celeska, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course	For attending: Decision on Study Rules for first and second cycle integrated studies (undergraduate studies) and second cycle studies (postgraduate studies) at FVMS (UG 554, 26.07.2021) + received authorization for Pathophysiology 1. For passing the course: All prerequisite courses mentioned in point 13 + Pathophysiology 1, and propositions described in point 18.			
11.	Objectives of the course program (competences) and learning outcomes	Theory classes comprise mechanisms of pathophysiological processes in particular organic systems, i.e. competences (knowledge) of: disorders in function of blood cells: erythrocytes, leucocytes, hemostatic disorders; disorders in function of cardio-vascular system; pathogenesis of collapse; disorders in metabolism of carbohydrates, fats and proteins; disorders in function of liver, biliary system and exocrine pancreas; pathophysiology of digestion; disorders in function of respiratory system; disorders in function of urinary system. Practical teaching (practicals) comprise evaluation of consequences due pathophysiological mechanisms in particular organic systems in various domestic animals. This includes knowledge of: tests for examination of disorders in function of erythrocytes, leucocytes, platelets and main laboratory tests for examination of hemostatic disorders; abnormalities of main parameters of electrocardiogram; test for examination of disorders in metabolism of carbohydrates, fats and proteins; use of laboratory tests for examination of metabolic profile in common			

		domestic animal species; clinical enzymology, liver enzymes and hepatogram; examination of bilirubin metabolism in various animal species; tests for examination of functional status of exocrine pancreas; ues of parameters for evaluation of gastrointestinal disorders and examination of ruminal content; examination of blood saturation parameters and blood gas analysis; examination of urine biochemical parameters; urinalysis (examination of urine sediment).
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	**Theory classes: teaching chapter (learning outcome)** 1.-2. Disorders in function of erythrocytes (Knowledge of disorders in function of blood cells and hematopoietic organs) 3.-4. Disorders in function of leucocytes (Knowledge of disorders in function of blood cells and hematopoietic organs) 5.-6. Hemostatic disorders (Knowledge of disorders in function of blood cells and hematopoietic organs) 7.-10. Disorders in function of cardio-vascular system (Knowledge of disorders in function of cardio-vascular system) 11.-12. Pathophysiology of collapse (Knowledge of pathogenesis of collapse) 13-18. Disorders in metabolism of carbohydrates, fats and proteins (Knowledge of disorders of metabolism of carbohydrates, fats and proteins) 19.-20. Disorders in function of liver and exocrine pancreas (Knowledge of disorders in function of liver, biliary system and exocrine pancreas) 21.-24. Disorders in function of gastrointestinal tract (Knowledge of pathophysiology of digestion) 25-26. Disorders in function of respiratory organs (Knowledge of disorders in function of respiratory system) 27-30. Disorders of urinary system (Knowledge of renal function and urinary tract disorders) **Practical teaching: teaching chapter (learning outcome)** 1.-2. Tests for examination of disorders in erythrocyte function (Knowledge of quantitave and qualitative abnormalities in erythrocytes) 3.-4. Tests for examination of disorders in leucocyte function (Knowledge of quantitative and qualitative abnormalities in leucocytes) 5.-6. Tests for examination of disorders in platelet function and hemostatic disorders (Knowledge of quantitative and functional abnormalities in platelets, and parameters for indication of hemostatic disorders) 7.-10. Abnormalities in electrocardiogram (Knowledge and evaluation of electrocardiogram basic parameters) 11.-12. Tests for examination of disorders of carbohydrate metabolism (Knowledge of main laboratory methods, analysis and interpretation for detecting disorder in carbohydrate metabolism) 13.-14. Tests for examination of disorders of fat metabolism (Knowledge of main laboratory methods, analysis and interpretation for detecting disorder in fat metabolism) 15-16. Tests for examination of disorders of protein metabolism (Knowledge of main laboratory methods, analysis and interpretation for detecting disorder in protein metabolism) 17.-18. Metabolic profile tests (Knowledge and use of tests for evaluation of metabolic profile in common domestic animal species) 19.-20. Clinical enzymology, liver enzymes, hepatogram (Knowledge and evaluation of particular enzymes and their specifics in common domestic animal species) 21. Tests for examination of disorders in bilirubin metabolism

		(Knowledge and evaluation of bilirubin metabolism disorder in common domestic animal species) 22. Tests for examination of disorders of exocrine pancreas (Knowledge and evaluation of exocrine pancreas disorder) 23-24. Tests for examination of gastrointestinal disorders, cytological and biochemical examination of ruminal content (Knowledge and evaluation of parameters indicating gastrointestinal disorder, examination of ruminal content) 25.-26. Examination of blood saturation parameters and blood gas analysis (Knowledge of parameters for evaluation of respiratory failure) 27.-28. Biochemical examination of urine (Knowledge of laboratory procedures for examination of urine biochemical parameters) 29.-30. Urinalysis (urine sediment) (Knowledge of laboratory procedures for preparation and evaluation of urine sediment)
13.	Inter-connection with other subjects (courses)	Prerequisite: Animal Anatomy 1 and 2; Histology and Embryology 1 and 2; Cell biology; Biochemistry; Animal Physiology 1 and 2; Veterinary Immunology Complementary: Basic Pathology; Special Veterinary Pathology Post requisite: Internal Diseases in Companion Animals and Equines 1 and 2; Internal Diseases in Farm Animals 1 and 2
14.	Detailed description of teaching and working methods for the subject	**Theoretical teaching – lectures** Cabinet teaching with all students who reached the course. Teaching may be with or without the use of teaching aids or specimens. The essential characteristic is that there is no hands-on involvement of the students in the material discussed, but they are included in teaching process as active participants (interactive teaching). **Practical teaching (practical exercises) – laboratory and desk-based work** Teaching sessions where students themselves actively perform laboratory experiments, and use microscopes for the examination of specimens. It also includes work on documents and idea-formulation without the handling of animals, organs, objects or products. It is realised interactive with small groups of students. **Project assignments – supervised group work** Teaching sessions directed towards a smaller group of students during which they work as a team, on part of the theoretical aspects, prepared from manuscript notes, photocopied documents, articles and bibliographic references. Information is illustrated and knowledge extended by the oral presentation of audio-visual material, with opportunity for discussion with other students. **Individual tasks – supervised individual work** Teaching sessions directed towards a individual students during which they work on their own, on part of the theoretical aspects, prepared from manuscript notes, photocopied documents, articles and bibliographic references. Information is illustrated and knowledge extended by the oral presentation of audio-visual material, with opportunity for discussion with other students. **Self-directed learning – supervised self-learning** Sessions of individual students making use of defined teaching material provided by the Faculty or by course teacher(s). Gained knowledge is presented with written assay, which is matter of assessment by the course teacher. Supervised group or individual work (project assignments, individual tasks and self-directed learning) is mandatory additional student activity, as optional opportunity for extending student's knowledge about predicted learning outcomes. The type of this additional activity

		is chosen by students by their own, with consultation with course teacher(s), also the topic which would be concerned within this work. One student could realise various types of additional activities, but the total score of points gained with these activities could not be higher than maximal point score predicted for such activities in course programme. For realising additional activities, students have to use various digital teaching aids (e-learning) provided by the course teacher(s), or available on Faculty's digital platform and from referent on-line databases, with access provided by the Faculty. With additional activity student not expands his/her knowledge in certain learning outcome(s), but also improves his/her skills concerning information literacy and data management. All types of teaching (theory classes, practicals, additional activity) are in general organised with physical presence, but if necessary, they could be organised on-line or hybrid (physical presence + on-line).		
15.	Total available time	100 hours Theory classes: 2 hours/per week (30 hours) Practicals: 2 hours/per week (30 hours)		
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	30
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours	
		16.3.	Practice: total hours	30
17.	Other forms of activities	17.1.	Project assignments: hours	40
		17.2.	Individual tasks: hours	
		17.3.	Self-directed learning	
18.	Conditions for receiving authorization	For 15 weeks of attendance at lectures, i.e. practical exercises, a maximum of 2 points are awarded for lectures (0.13 points per week), i.e. a maximum of 2 points from exercises (0.13 points per week). For demonstrated activity in 15 weeks of lectures, i.e. practical exercises, an additional maximum of 2 points for lectures (0.13 points per week), i.e. a maximum of 2 points from exercises (0.13 points per week). The minimum allowed number of unearned points due to justified absences according to Article 8 of the Decision on Study Rules for first and second cycle integrated studies (undergraduate studies) and second cycle studies (postgraduate studies) at FVMS (UG 554, 26.07.2021) is 0.6 points from lectures and 0.6 points from exercises. These points can be earned by the student in agreement with the course teachers through a colloquium or by completing a homework assignment given by the course teachers. The theoretical part of the final exam carries a maximum of 40 points, and consists of 4 questions, each of which carries a maximum of 10 points. The practical part of the final exam carries a maximum of 40 points, and consists of 4 questions, each of which carries a maximum of 10 points.		
19.	Assessment methods			
	19.1.	Attendance and activity on theory classes and practical exercises: points	Attendance on lectures: 2 points Activity on lectures: 2 points Attendance on exercises: 2 points Activity on exercises: 2 points	
	19.2.	Tests: points	2 continuous assessments: 2x2.5 points = total 5 points; Each continuous assessment consists of 10 questions from the theoretical part and 10 questions from the	

				practical part; The continuous assessment is considered passed if 6 questions from the theoretical part and 6 questions from the practical part are correct.	
	19.3.	Written essay/project assignment, oral or writen presentation: points		Project assignments / Individual tasks / Self-directed learning: 7 points	
	19.4.	Final exam: points		Oral (or written, on student's request): from the theoretical part up to 40 points + from the practical part up to 40 points = total up to 80 points.	
20.	Grading criteria (points/grade)		up to 59 points	5 (five) (F)	
			60 to 68 points	6 (six) (E)	
			69 to 76 points	7 (seven) (D)	
			77 to 84 points	8 (eight) (C)	
			85 to 92 points	9 (nine) (B)	
			93 to 100 points	10 (ten) (A)	
21.	Method of monitoring the quality of teaching process		Report from the Self-evaluation committee and anonymous student survey		
22.	Literature				
	22.1.	Mandatory literature			
		No.	Author	Title	Publisher	Year
		1.	RH Dunlop, C-H Malbert (eds.)	*Veterinary Pathophysiology*	Blackwell Publishing	2004
		2.	JF Zachary	*Pathologic Basis Of Veterinary Disease (6th Ed.)*	Elsevier	2017
		3.		*Teaching aids in textual form prepared by the course teachers*		
	22.2.	Additional literature			
		No.	Author	Title	Publisher	Year
		1.	DJ Weiss, KJ Wardrop (eds.)	*Schalm's Veterinary Hematology (6th Ed.)*	Wiley-Blackwell	2000
		2.	RS Chauhan, DK Agarwal	*Textbook of Veterinary Clinical and Laboratory Diagnosis (2nd Ed)*	JAYPEE	2008
		3.	DJ Chew, SP DiBartola	*Interpretation of Canine and Feline Urinalysis*	The Gloyd Group, Inc.	1998

No. 33

Attachement no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Special Pharmacology**			
2.	Code	VM2023-322			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Pharmacology and Toxicology			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Third (III)	Semester	Sixth (VI)
\7.	Course load expressed in ECTS credits	5.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Romel Velev, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course	For attending: Decision on Study Rules for first and second cycle integrated studies (undergraduate studies) and second cycle studies (postgraduate studies) at FVMS (UG 554, 26.07.2021) and received authorization for General pharmacology For passing: passed all subjects form the I and II semester and General pharmacology			
11.	Objectives of the course program (competencies) and learning outcomes	The Special Pharmacology course aims to provide veterinary students with comprehensive knowledge and practical skills related to the use of veterinary drugs. The theoretical part focuses on structure, mechanism of action, and pharmacokinetics of different drug groups. It emphasizes understanding the scientific foundation for their safe and effective application, while considering ethical, environmental, and human health impacts. Students will learn how to recognize the need for medical intervention, select the appropriate medication, apply drugs at optimal doses, and recognize adverse effects. Additionally, they will acquire skills in preventive veterinary medicine and in promoting animal health and productivity. In the practical teaching students will become familiar with different pharmaceutical forms of drugs, their specific characteristics, and the processes of prescribing, dispensing, storing, and safely disposing of them. They will also learn how to access data on licensed drugs and how to use laboratory experiments to illustrate theoretical concepts. This practical approach will help students develop the necessary skills for real-world application in clinical veterinary medicine.			
12.	Detailed course content by chapter and unit with	Theoretical classes *Special pharmacology*: 1-9 Pharmacology of CNS (CNS depressors and			

	learning outcomes for each chapter	stimulators, psychotropic drugs). Pharmacology of PNS. Pharmacology of ANS.. 10-12 Pharmacology of the cardiovascular system and blood. 13-15 Pharmacology of the genital and urinary system. Pharmacology of the respiratory system 16-18 Pharmacology of the digestive tract. 19-21 Pharmacology of vitamins and minerals. Pharmacology of hormones. Pharmacology of skin and mucoses. 22-2 *Chemotherapy of the microbial diseases (antimicrobial drugs)*: Introduction. Beta lactamic antibiotics (penam penicillins, cephalosporins). Aminoglicozydes and aminocyclitols. Tetracyclines. Amphenicols. Macrolydes, azilydes, lincozamides, pleuromutilins. Peptide antibiotics. Other antibiotics. Synthetic antimicrobial substances. 31-33 Antimycotic drugs. Antiviral drugs. Antiseptics and desinfitients. 34-36 *Chemotherapy of malignancies (antineoplastic drugs)*: Antineoplastic drugs. Immunopharmacology. *37-45 Chemotherapy of parasitic diseases (antiparasitic drugs)*: Ectoantiparasitics. Endoantiparasitics. Practical classes 1-2 Solid forms of drugs I: Pulveres. Pulveres non divisi et pulveres divisi. 3-4 Solid forms of drugs II: Capsulae medicinales. Prescription of officinal and ready-made capsules. 5-6 Solid forms of drugs III: Tablettae. Variations of tablets, prescription of ready-made officinal tablets.7-8 Solid forms of drugs IV: Solublettae. Vaginalettae. Suppositoria. Boli.9-10 Semi-solid forms of drugs I: Unguenta. Ointment bases. Water-insoluble bases. Water-soluble bases. 11-12 Semi-solid forms of drugs II: Use of ointments (application to the skin and mucous membranes). Prescription of ready-made, officinal and magistral ointments.13-14 Semi-solid forms of drugs III: Oculenta. Pastae. Prescription of ready-made, officinal and magistral pastes. Electuaria. 15-16 Liquid forms of drugs I: Solutiones medicinales. Prescription of ready-made of official and magistral solutions for internal and external use. Mixturae.17-18 Liquid forms of drugs II: Suspensiones medicinales. Prescription of ready-made suspensions, magistral prescription of suspensions. 19-20 Liquid forms of drugs III: Emulsiones medicinales. Prescription of emulsions. Liquid forms of drugs IV: Injectiones. Prescription of injections. 21-22 Liquid forms of drugs V: Guttae. Oculoguttae. Otoguttae. Rhinoguttae. 23-24 Liquid forms of drugs VI: Infundibilia. Inhalationes. Klysmata. Mucilagines.25-26 Liquid forms of drugs 27-28 VII: Macerata. Infuza. Decocta. Extracta. Tinctura. Mixtura. 29-30 Prescription of recipes		
13.	Inter-connection with other subjects (courses)			
14.	Detailed description of teaching and working methods for the subject	Theory classes and seminars: interactive (lectures in group with discussion and active participation of the students). Practicals: auditory practicals and other ways of work (in smaller groups) and seminars (learning using professional literature and the internet, preparing a seminar paper (essay/poster) and presentation and discussion of the seminar paper).		
15.	Total available time	125 hours Theory classes: 3 hours/per week (45 hours) Practicals: 2 hours/per week (30 hours)		
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	45
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours	30
		16.3.	Practice: total hours	

17.	Other forms of activities	17.1.	Project assignments: hours	
		17.2.	Individual tasks: hours	
		17.3.	Self-directed learning	50
18.	Conditions for receiving authorization	The condition for obtaining a signature from the subject teacher at the end of the semester, in addition to the minimum attendance of theoretical and practical classes during the semester, is also the student's passing the continuous knowledge tests during the semester and a minimum of 25% of points earned on the tests. A student who has not shown a minimum of 50% success in the continuous knowledge tests during the semester is required to take the remedial knowledge tests in the exam sessions that follow. Those students who have earned more than 60 points by attending theoretical, practical classes and continuous tests should also take the final exam. In order to take the final exam, the student should have previously passed the following subjects: General Pharmacology and Parasitology and Parasitic Diseases 1.		

19. Assessment methods

Attendance at theoretical classes*:
min. 12 points – max. 15 points

Attendance and activity (knowledge) at exercises*:
min. 12 points – max. 15 points

*Attendance at classes: 60 - 70% 12 points
71 - 80% 13 points
81 - 90% 14 points
91 - 100% 15 points

Type of activity		*Points*	
		minimum	*maximum*
Attendance on theory classes		12	15
Attendance and activity on practicals		12	15
Continious wrriten exam (2)		20	40
Final exam	Wrriten	10	20
	Oral	6	10
Total:		60	100

19.1.	Tests: scores	Fiirst test “Pharmacology of organ systems”:min 10 points – max. 20 points Second test “Chemotherapeutics”: min. 10 points – max. 20 points
19.2.	Written essay/project assignment, oral or wrriten presentation: points	Written part “Prescribing prescriptions” (5 exam rescriptions): min. 10 points – max. 20 points Oral part (3 questions based on which the integrative knowledge of special pharmacology is assessed, which is important for understanding the whole subject): min. 6 points – max. 10 points
19.3.	Final exam: points	

20.	Grading criteria (points/grade)			up to 59 points	5 (five) (F)
				60 to 68 points	6 (six) (E)
				69 to 76 points	7 (seven) (D)
				77 to 84 points	8 (eight) (C)
				85 to 92 points	9 (nine) (B)
				93 to 100 points	10 (ten) (A)
21.	Method of monitoring the quality of teaching process			Report from the Self-evaluation committee and anonymous student survey	
22.	Literature				
	22.1.	Mandatory literature			
		No.	Author	Title	Publisher	Year
		1.	Riviere, J., M. Papich	*Veterinary Pharmacology and Therapeutics, 10th ed.*	Wiley Blackwell	2018
		2.	Papich, M.G.	*Saunders Handbook of Veterinary Drugs. 3rd Ed.*	Elsevier Saunders	2011
		3.				
	22.2.	Additional literature			
		No.	Author	Title	Publisher	Year
		1.	Adams H. R.	*Veterinary Pharmacology andTherapeutics (8-th edition).*	Iowa State University Press. Ames	2001
		2.	Brander G. C. and Pugh D. M.	*Veterinary Applied Pharmacology and Therapeutics (5-th edition)*	Bailliere Tindall. London	1991
		3.				

No. 34

Attachement no. 3		**Integrated first and second cycle of studies**
1.	Program course title	**Special Veterinary Pathology**
2.	Code	VM2023-323
3.	Study program	Veterinary medicine
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Pathology and Forensic Medicine
5.	Degree of education (first,	Integrated first and second cycle of studies

	second, third cycle)				
6.	Academic year / semester	Year	Third (III)	Semester	Sixth (VI)
7.	Course load expressed in ECTS credits	7.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Dr. Trpe Ristoski, PhD Assoc. Prof. Ivica Gjurovski, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course	For attending: Decision on Study Rules for first and second cycle integrated studies (undergraduate studies) and second cycle studies (postgraduate studies) at FVMS (UG 554, 26.07.2021) and received authorization for Basic Pathology For passing: passed Basic Pathology			
11.	Objectives of the course program (competencies) and learning outcomes	The goal of the theoretical lectures in the subject of Special Pathological Morphology is to teach students the pathoanatomical changes of all the organ systems. By correct determination of the pathological anatomical changes it will help the students in setting the final diagnosis for the animal's death. The practical lectures aim to familiarize students with the equipment and the method of performing an necropsy on animals. During classes, each student will be provided with the opportunity to perform necropsy on different animal species (ruminants, non-ruminant animals or poultry) and at the same time to observe the pathological-anatomical changes that have occurred and finally to determining the cause of the animal's death.			
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	Theoretical lectures: Digestive system. Hematopoietic organs. Circulatory system. Respiratory system. Urinary system. Sexes organs. Central nervous system. Endocrine glands. Musculoskeletal system. Organs of sight and hearing. Skin. Practical lectures: Introduction to the necropsy of domestic animals (theoretical). Necropsy of ruminant animals (sheep and goats). Necropsy of non-ruminant animals (dogs, cats, pigs). Necropsy of poultry. Organ pathology. Field necropsy of large animals.			
13.	Inter-connection with other subjects (courses)				
14.	Detailed description of teaching and working methods for the subject	Theoretical teaching: interactive (lectures in a large group with discussion and engagement of students) Practical teaching: animal necropsy Seminar paper: learning by using professional literature and the Internet, preparation of a seminar paper; presentation and discussion of the seminar paper.			
15.	Total available time	175 hours Theory classes: 4 hours/per week (60 hours) Practicals: 4 hours/per week (60 hours)			
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	60	
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours	60	
		16.3.	Practice: total hours		

17.	Other forms of activities	17.1.	Project assignments: hours	
		17.2.	Individual tasks: hours	
		17.3.	Self-directed learning	55
18.	Conditions for receiving authorization	The student is responsible for actively following all the planned activities with which he earns points as part of the final assessment. The two continuous knowledge tests are written: First test: Digestive system; Hematopoietic organs; Circulatory system; Respiratory system. Second test: Urinary system; Sex organs; Central nervous system; Endocrine glands; Skeletal and muscle system; Organs of sight and hearing and Skin.		
19.	Assessment methods			
	19.1.	Tests: points		One test- Minimum 10 Maximum 20 points Total- Minimum 20 Maximum 40 points
	19.2.	Written essay/project assignment, oral or wrriten presentation: points		Minimum 5, Maximum 10 points
	19.3.	Final exam: points		Minimum 35 Maximum 50 points
20.	Grading criteria (points/grade)		up to 59 points	5 (five) (F)
			60 to 68 points	6 (six) (E)
			69 to 76 points	7 (seven) (D)
			77 to 84 points	8 (eight) (C)
			85 to 92 points	9 (nine) (B)
			93 to 100 points	10 (ten) (A)
21.	Method of monitoring the quality of teaching process		Report from the Self-evaluation committee and anonymous student survey	

22. Literature

Mandatory literature

No.	Author	Title	Publisher	Year
1.	C. Micevski and T. Ristosky	*Histopathological practicum*	Faculty of Veterinary Medicine, Skopje	2003
2.	Micevski C	*Necropsy of the domestic animals*	Vet. fac. Skopje	1998
3.	C. Micevski and T. Ristoski	*Canine distemper virus*	Vet. Fac., Skopje	2003
4.	Norman Chevile	*Ultrastructural pathology*		1994
5.	Kumar, Cotran, Robbins	*Basic Pathology, 7th edition*		2003

		6.	Jubb K., Kennedy P., Plummer N	*Pathology of domestic animals*		1992
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year
		1.				
		2.				
		3.				

No. 35

Attachment no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Parasitology and Parasitic Diseases 2**			
2.	Code	VM2023-324			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss. Cyril and Methodius University in Skopje Department of Parasitology and Parasitic Diseases			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Third (III)	Semester	Sixth (VI)
7.	Course load expressed in ECTS credits	4,5			
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Jovana Stefanovska, PhD Prof. Aleksandar Cvetkovikj, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course	For attending: Decision on Study Rules for first and second cycle integrated studies (undergraduate studies) and second cycle studies (postgraduate studies) at FVMS (UG 554, 26.07.2021) and received authorization for Parasitology and Parasitic Diseases 1. For passing: See point 19.			
11.	Objectives of the course program (competencies) and learning outcomes	The study of the course Parasitology and parasitic diseases 2 consists of a theoretical and a practical part. The theoretical part studies the morphology, biological characteristics, life cycles, pathogenesis and immunity, clinical signs, diagnostics, treatment and prophylaxis of the most important parasites from the groups Nematoda, Acanthocephala and Arthropoda given in a taxonomical order. In the practical part, special emphasis is given to the morphology of adults and the morphology of the developmental forms of Nematoda, Acanthocephala and Arthropoda, life cycles and diagnostic methods. The practical part is performed in a laboratory with microscopic and macroscopic parasitological preparations, micrometry, familiarization with the methods of determination of Nematoda, Acanthocephala and Arthropoda and the methods for diagnosis of diseases caused by them. Objective: The objective of this course is to educate students about			

		Nematoda, Acanthocephala and Arthropoda and the diseases caused by them, which have a special significance in veterinary and public health. With the knowledge that the students will acquire from this course, they will be able to independently determine the parasitic Nematoda, Acanthocephala and Arthropoda and diagnose, treat and prevent diseases in domestic animals caused by them, including parasitic zoonoses and anthropozoonoses. Learning outcomes: to prepare students to effectively manage parasitic diseases caused by Nematoda, Acanthocephala and Arthropoda in veterinary practice, contribute to public health efforts, and understand the broader implications of parasitology in animal and human health.
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	Theoretical classes: 1. General characteristics and systematics of Nematoda. Class Secernentea, Order Rhabditida, Family Strongyloididae, Genus *Strongyloides*. Order Strongylida, Family Strongylidae, Genus *Strongylus*, Genus *Chabertia*, Genus *Oesophagostomum*. Subfamily Cyathostominae (outcomes: describe the general characteristics of nematodes, including their body structure, life cycle, veterinary and public health importance; classify nematodes according to the current systematic hierarchy; differentiate the above genera and describe their life cycles; understand the aetiology, transmission, pathogenesis, clinical signs, and diagnosis of the diseases they cause; learn about prevention and control strategies of these diseases; discuss their public health significance). 2. Family Trichostrongylidae, Genus *Trichostrongylus*, Genus *Haemonchus*, Genus *Ostertagia*, Genus *Hyostrongylus*. Family Cooperidae, Genus *Cooperia*, Family Molineidae, Genus *Nematodirus* (outcomes: differentiate the above genera and describe their life cycles; understand the aetiology, transmission, pathogenesis, clinical signs, and diagnosis of the diseases they cause; learn about prevention and control strategies of these diseases; discuss their public health significance). 3. Family Ancylostomatidae, Genus *Globocephalus*, Genus *Bunostomum*, Genus *Ancylostoma*, Genus *Uncinaria* (outcomes: differentiate the above genera and describe their life cycles; understand the aetiology, transmission, pathogenesis, clinical signs, and diagnosis of the diseases they cause; learn about prevention and control strategies of these diseases; discuss their public health significance). 4. Family Amydostomatidae, Genus *Amidostomum*. Family Syngamidae, Genus *Syngamus*, Genus *Cyathostoma* (outcomes: differentiate the above genera and describe their life cycles; understand the aetiology, transmission, pathogenesis, clinical signs, and diagnosis of the diseases they cause; learn about prevention and control strategies of these diseases; discuss their public health significance). 5. Family Dyctiocaulidae, Genus *Dictyocaulus*. Family Protostrongylidae, Genus *Protostrongylus*. Family Metastrongylidae, Genus *Metastrongylus* (outcomes: differentiate the above genera and describe their life cycles; understand the aetiology, transmission, pathogenesis, clinical signs, and diagnosis of the diseases they cause; learn about prevention and control strategies of these diseases; discuss their public health significance). 6. Family Filaroididae, Genus *Filaroides*, Genus *Aelurostrongylus*.

		Family Crenosomatidae, Genus *Troglostrongylus*. Family Filariidae, Genus *Parafilaria*. Family Angiostrongylidae, Genus *Angiostrongylus* (outcomes: differentiate the above genera and describe their life cycles; understand the aetiology, transmission, pathogenesis, clinical signs, and diagnosis of the diseases they cause; learn about prevention and control strategies of these diseases; discuss their public health significance). 7. Order Oxyurida, Family Oxyuridae, Genus *Oxyuris*. Order Ascaridida, Family Ascarididae, Genus *Ascaris*, Genus *Toxocara*, Genus *Toxascaris*, Genus *Parascaris*, Genus *Ascaridia*, Genus *Heterakis* (outcomes: differentiate the above genera and describe their life cycles; understand the aetiology, transmission, pathogenesis, clinical signs, and diagnosis of the diseases they cause; learn about prevention and control strategies of these diseases; discuss their public health significance). 8. Order Spirurida, Family Spirocercidae, Genus *Spirocerca*. Family Habronematidae, Genus *Habronema*. Family Thelazidae, Genus *Thelazia*. Family Onchocercidae, Genus *Dirofilaria*, Genus *Onchocerca* (outcomes: differentiate the above genera and describe their life cycles; understand the aetiology, transmission, pathogenesis, clinical signs, and diagnosis of the diseases they cause; learn about prevention and control strategies of these diseases; discuss their public health significance). 9. Class Adenophorea, Order Enoplida, Family Trichuridae, Genus *Trichuris*. Family Capillaridae, Genus *Capillaria*. Family Trichinellidae, Genus *Trichinella*. General characteristics and systematics of acanthocephalans. Class Archiacanthocephala, Order Oligacanthorhynchida, Family Oligacanthorhynchidae, Genus *Macracanthorhynchus*. (outcomes: differentiate the above genera and describe their life cycles; understand the aetiology, transmission, pathogenesis, clinical signs, and diagnosis of the diseases they cause; learn about prevention and control strategies of these diseases; discuss their public health significance; describe the general characteristics of acanthocephalans, including their body structure, life cycle, veterinary and public health importance; classify acanthocephalans according to the current systematic hierarchy). 10. General characteristics and systematics of arthropods. Class Arachnida. Order Ixodida, Family Ixodidae, Genus *Ixodes*, Genus *Rhipicephalus*, Genus *Dermacentor*, Genus *Hyalomma*, Genus *Haemaphysalis*, tick paralysis. Family Argasidae, Genus *Argas*, Genus *Ornithodoros*, Genus *Otobius*. Order Mesostigamata, Family Dermanyssidae, Genus *Dermanyssus*. Family Varroidae, Genus *Varroa*. Order Prostigmata, Family Demodicidae, Genus *Demodex*. Family Trombiculidae, Genus *Trombicula*. Family Cheyletidae, Genus *Cheyletiella* (outcomes: describe the general characteristics of arthropods, including their body structure, life cycle, veterinary and public health importance; classify arthropods according to the current systematic hierarchy; differentiate between hard ticks, soft ticks and mites; differentiate the above genera and describe their life cycles; describe the clinical signs and diagnosis of their presence; learn how to prevent the infestation and control the population; discuss their public health significance). 11. Family Sarcoptidae, Genus *Sarcoptes*, Genus *Notoedres*. Family Knemidocoptidae, Genus *Knemidocoptes*. Family Psoroptidae,

		Genus *Psoroptes*, Genus *Chorioptes*, Genus *Otodectes* (outcomes: differentiate the above genera and describe their life cycles; describe the clinical signs and diagnosis of their presence; learn how to prevent the infestation and control the population; discuss their public health significance). 12. Class Insecta. Family Tabanidae, Genus *Tabanus*. Family Muscidae, Genus *Musca*, Genus *Haematobia*, Genus *Stomoxys*. Family Glossinidae, Genus *Glossina*. Family Hippoboscidae, Genus *Hippobosca*, Genus *Melophagus*. Family Calliphoridae, Genus *Calliphora*, Genus *Lucilia*. Family Sarcophagidae, Genus *Sarcophaga*, Genus *Wohlfahrtia*. Family Oestridae, Genus *Gasterophilus*, Genus *Hypoderma*, Genus *Oestrus* (outcomes: differentiate the above genera and describe their life cycles; describe the clinical signs and diagnosis of their presence; learn how to prevent the infestation and control the population; discuss their public health significance). 13. Family Culicidae, Genus *Culex*, Genus *Aedes*, Genus *Anopheles*. Family Simuliidae, Genus *Simulium*. Family Psychodidae, Genus *Phlebotomus*. Family Ceratopogonidae, Genus *Culicoides* (outcomes: differentiate the above genera and describe their life cycles; describe the clinical signs and diagnosis of their presence; learn how to prevent the infestation and control the population; discuss their public health significance). 14. Order Siphonaptera, Family Pulicidae, Genus *Pulex*, Genus *Ctenocephalides*. Order Phthiraptera, Family Trichodectidae, Genus *Trichodectes*, Genus *Felicola*. Family Bovicolidae, Genus *Bovicola*. Suborder Anoplura, Family Haematopinidae, Genus *Haematopinus*. Family Linognathidae, Genus *Linognathus*. Class Maxillopoda, Subclass Pentastomida, Family Linguatidae, Genus *Linguatula* (outcomes: differentiate the above genera and describe their life cycles; describe the clinical signs and diagnosis of their presence; learn how to prevent the infestation and control the population; discuss their public health significance). 15. Anthelmintics (nematocides, endectocides), ectoparasiticides (ectocides), repellents and insect growth regulators. Methods of control of nematode and acanthocephalan infections. Methods of control of arthropod infestations (outcomes: learn about the most frequently used antiparasitic treatments for controlling the infections with nematodes and acanthocephalans, and the infestations with arthropods; explain the principles of integrated parasite management in different animal species; discuss strategies for preventing and controlling parasitic infections in companion animals and livestock). Practicals: 16. Class Secernentea, Order Rhabditida, Family Strongyloididae, Genus *Strongyloides*. Order Strongylida, Family Strongylidae, Genus *Strongylus*, Genus *Chabertia*, Genus *Oesophagostomum*. Subfamily Cyathostominae (outcomes: identify the key morphological features of the above genera and describe their life cycles; learn and distinguish their parasitic elements by microscopy; perform different diagnostic methods to diagnose the infection). 17. Family Trichostrongylidae, Genus *Trichostrongylus*, Genus *Haemonchus*, Genus *Ostertagia*, Genus *Hyostrongylus*. Family Cooperidae, Genus *Cooperia*, Family Molineidae, Genus

		Nematodirus (outcomes: identify the key morphological features of the above genera and describe their life cycles; learn and distinguish their parasitic elements by microscopy; perform different diagnostic methods to diagnose the infection). 18. Family Ancylostomatidae, Genus *Globocephalus*, Genus *Bunostomum*, Genus *Ancylostoma*, Genus *Uncinaria* (outcomes: identify the key morphological features of the above genera and describe their life cycles; learn and distinguish their parasitic elements by microscopy; perform different diagnostic methods to diagnose the infection). 19. Family Amydostomatidae, Genus *Amidostomum*. Family Syngamidae, Genus *Syngamus*, Genus *Cyathostoma* (outcomes: identify the key morphological features of the above genera and describe their life cycles; learn and distinguish their parasitic elements by microscopy; perform different diagnostic methods to diagnose the infection). 20. Family Dyctiocaulidae, Genus *Dictyocaulus*. Family Protostrongylidae, Genus *Protostrongylus*. Family Metastrongylidae, Genus *Metastrongylus* (outcomes: identify the key morphological features of the above genera and describe their life cycles; learn and distinguish their parasitic elements by microscopy; perform different diagnostic methods to diagnose the infection). 21. Family Filaroididae, Genus *Filaroides*, Genus *Aelurostrongylus*. Family Crenosomatidae, Genus *Troglostrongylus*. Family Filariidae, Genus *Parafilaria*. Family Angiostrongylidae, Genus *Angiostrongylus* (outcomes: identify the key morphological features of the above genera and describe their life cycles; learn and distinguish their parasitic elements by microscopy; perform different diagnostic methods to diagnose the infection). 22. Order Oxyurida, Family Oxyuridae, Genus *Oxyuris*. Order Ascaridida, Family Ascarididae, Genus *Ascaris*, Genus *Toxocara*, Genus *Toxascaris*, Genus *Parascaris*, Genus *Ascaridia*, Genus *Heterakis* (outcomes: identify the key morphological features of the above genera and describe their life cycles; learn and distinguish their parasitic elements by microscopy; perform different diagnostic methods to diagnose the infection). 23. Order Spirurida, Family Spirocercidae, Genus *Spirocerca*. Family Habronematidae, Genus *Habronema*. Family Thelazidae, Genus *Thelazia*. Family Onchocercidae, Genus *Dirofilaria*, Genus *Onchocerca* (outcomes: identify the key morphological features of the above genera and describe their life cycles; learn and distinguish their parasitic elements by microscopy; perform different diagnostic methods to diagnose the infection). 24. Class Adenophorea, Order Enoplida, Family Trichuridae, Genus *Trichuris*. Family Capillaridae, Genus *Capillaria*. Family Trichinellidae, Genus *Trichinella*. Class Archiacanthocephala, Order Oligacanthorhynchida, Family Oligacanthorhynchidae, Genus *Macracanthorhynchus*. (outcomes: identify the key morphological features of the above genera and describe their life cycles; learn and distinguish their parasitic elements by microscopy; perform different diagnostic methods to diagnose the infection). 25. Class Arachnida. Order Ixodida, Family Ixodidae, Genus *Ixodes*, Genus *Rhipicephalus*, Genus *Dermacentor*, Genus *Hyalomma*, Genus *Haemaphysalis*, Family Argasidae, Genus *Argas*, Genus

		Ornithodoros, Genus *Otobius*. Order Mesostigamata, Family Dermanyssidae, Genus *Dermanyssus*. Family Varroidae, Genus *Varroa*. Order Prostigmata, Family Demodicidae, Genus *Demodex*. Family Trombiculidae, Genus *Trombicula*. Family Cheyletidae, Genus *Cheyletiella* (outcomes: identify the key morphological features of the above genera and describe their life cycles; perform different diagnostic methods to detect their presence). 26. Family Sarcoptidae, Genus *Sarcoptes*, Genus *Notoedres*. Family Knemidocoptidae, Genus *Knemidocoptes*. Family Psoroptidae, Genus *Psoroptes*, Genus *Chorioptes*, Genus *Otodectes* (outcomes: identify the key morphological features of the above genera and describe their life cycles; perform different diagnostic methods to detect their presence). 27. Class Insecta. Family Tabanidae, Genus *Tabanus*. Family Muscidae, Genus *Musca*, Genus *Haematobia*, Genus *Stomoxys*. Family Glossinidae, Genus *Glossina*. Family Hippoboscidae, Genus *Hippobosca*, Genus *Melophagus*. Family Calliphoridae, Genus *Calliphora*, Genus *Lucilia*. Family Sarcophagidae, Genus *Sarcophaga*, Genus *Wohlfahrtia*. Family Oestridae, Genus *Gasterophilus*, Genus *Hypoderma*, Genus *Oestrus* (outcomes: identify the key morphological features of the above genera and describe their life cycles; perform different diagnostic methods to detect their presence). 28. Family Culicidae, Genus *Culex*, Genus *Aedes*, Genus *Anopheles*. Family Simuliidae, Genus *Simulium*. Family Psychodidae, Genus *Phlebotomus*. Family Ceratopogonidae, Genus *Culicoides* (outcomes: identify the key morphological features of the above genera and describe their life cycles; perform different diagnostic methods to detect their presence). 29. Order Siphonaptera, Family Pulicidae, Genus *Pulex*, Genus *Ctenocephalides*. Order Phthiraptera, Family Trichodectidae, Genus *Trichodectes*, Genus *Felicola*. Family Bovicolidae, Genus *Bovicola*. Suborder Anoplura, Family Haematopinidae, Genus *Haematopinus*. Family Linognathidae, Genus *Linognathus*. Class Maxillopoda, Subclass Pentastomida, Family Linguatidae, Genus *Linguatula* (outcomes: identify the key morphological features of the above genera and describe their life cycles; perform different diagnostic methods to detect their presence). 30. Practical application of antiparasitic treatments for controlling the infections with nematodes and acanthocephalans, and the infestations with arthropods (outcomes: learn how to apply specific medications against these infections/infestations).		
13.	Inter-connection with other subjects (courses)	Cell Biology, Anymal Anatomy 1 and 2, Animal Physiology 1 and 2, Microbiology 1 and 2, Parasitology and Parasitic Diseases 1 and 2		
14.	Detailed description of teaching and working methods for the subject	Theoretical classes: interactive (lectures in large group with discussion and active participation of the students). Practicals: practical work with small groups of students.		
15.	Total available time	112.5 hours Theory classes: 2 hours/per week (30 hours) Practicals: 3 hours/per week (45 hours)		
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	30
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours	
		16.3.	Practice: total hours	45

17.	Other forms of activities	17.1.	Project assignments: hours	
		17.2.	Individual tasks: hours	
		17.3.	Self-directed learning	37.5
18.	Conditions for receiving authorization			
19.	Assessment methods			
	19.1.	Tests: points		Presence: 12-15 points 2 Tests, 1-2.5 points each Practical exam: 16-30 points
	19.2.	Written essay/project assignment, oral or written presentation: points		
	19.3.	Final exam: points		30-50
20.	Grading criteria (points/grade)		up to 59 points	5 (five) (F)
			60 to 68 points	6 (six) (E)
			69 to 76 points	7 (seven) (D)
			77 to 84 points	8 (eight) (C)
			85 to 92 points	9 (nine) (B)
			93 to 100 points	10 (ten) (A)
21.	Method of monitoring the quality of teaching process		Report from the Self-evaluation committee and anonymous student survey	

22. Literature

Mandatory literature

No.	Author	Title	Publisher	Year
1.	Domenico Otranto, Richard Wall	*Veterinary Parasitology, 5th Edition*	Wiley Blackwell	2024
2.	Anne M. Zajac, Gary A. Conboy, Susan E. Little, Mason V. Reichard	*Veterinary clinical parasitology, 9th Edition*	Wiley Blackwell	2021

Additional literature

No.	Author	Title	Publisher	Year
1.	Dwight D. Bowman.	*Georgis' Parasitology for Veterinarians, 11th Edition*	Elsevier Inc.	2021

No. 36

Attachement no. 3		**Integrated first and second cycle of studies**
1.	Program course title	**Animal Behaviour and Welfare**
2.	Code	VM2023-325
3.	Study program	Veterinary medicine
4.	Organizer of the study	Faculty of veterinary medicine-Skopje,

	program (unit, i.e. institute, department, section)	Ss Cyril and Methodius University in Skopje			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Third (III)	Semester	Sixth (VI)
7.	Course load expressed in ECTS credits	3.5			
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Vlatko Ilieski, PhD Asst. prof. Miroslav Kjosevski, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course	For attending: Decision on Study Rules for first and second cycle integrated studies (undergraduate studies) and second cycle studies (postgraduate studies) at FVMS (UG 554, 26.07.2021) plus passed Animal Anatomy 2, Animal physiology 2 and Animal Hygiene 1			
11.	Objectives of the course program (competencies) and learning outcomes	The primary objectives of the course Animal Behavior and Welfare are to familiarize students with various concepts of animal welfare and behavior and how they relate to practical applications, the biological basis of welfare and behavior, the application of techniques for objectively assessing animal welfare and behavior, and recognizing high and low levels of welfare. The course also covers ethics, legislation, and standards related to animal welfare, as well as identifying and distinguishing between normal and abnormal animal behavior. This course provides students with a multidisciplinary approach to understanding animal behavior and welfare. The program includes topics such as functional morphology, animal behavior, human-animal interactions, animal husbandry, health and pain in animals, assessment of animal welfare standards, and the economic implications of implementing these standards.			
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	Theoretical lectures Ethics and Core Concepts of Animal Welfare: Physiology of animal behavior; neuroendocrine aspects of stress in animals; environmental challenges; hunger, thirst, and pain; fear and other negative emotions; frustrations and environmental enrichment; health and diseases. Practical strategies for assessing and improving welfare; physical and social conditions linked to animal welfare; human-animal interactions; legislation, standards, and the economic aspects of animal welfare. Fundamentals of animal behavior; behavioral development; decision-making and motivation; social organization. Practical lectures: Standards for animal welfare and their assessment; Behavioral indicators of animal welfare.; Pain assessment in animals; Observation and measurement of animal behavior.; Applied welfare and behavior in clinical practice; Methods for recording animal behavior and welfare; Practical assessment of the behavior and welfare of companion animals; Practical assessment of the behavior and welfare of horses; Practical assessment of the behavior and welfare of farm animals; Practical assessment of welfare during transport; Practical assessment of the behavior and welfare of laboratory animals; Practical assessment of the behavior and welfare of exotic animals; Welfare			

		assessment during slaughter and euthanasia.		
13.	Inter-connection with other subjects (courses)			
14.	Detailed description of teaching and working methods for the subject	Theoretical lectures: interactive lectures in a large group, with discussion, student presentations and their additional activities Practical lectures: laboratory practice, work in small groups, field visits, homework, and presentations Seminar paper: learning using professional literature and the Internet, preparation of a seminar paper (essay/poster); presentation and discussion of the seminar paper. Project tasks: work on an individual/group project based on research and measurements with presentation of results		
15.	Total available time	87.5 hours Theory classes: 2 hours/per week (30 hours) Practical classes: 2 hours/per week (30 hours)		
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	30
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours	30
		16.3.	Practice: total hours	
17.	Other forms of activities	17.1.	Project assignments: hours	20
		17.2.	Individual tasks: hours	0
		17.3.	Self-directed learning	7.5
18.	Conditions for receiving authorization	To obtain a signature and be eligible for the final exam, the student needs to attend at least 70% of the theoretical and practical classes, to pass both practical tests (with a minimum of 6 points in each), and after meeting all the requirements, student can be eligible to take the **theoretical final exam**		

19. Assessment methods

Type of activity	*Points*	
	minimum	*maximum*
Attendance at theoretical lectures	12	15
Attendance at practical lectures	12	15
Accepted seminar paper or project assignment	6	10
Passed 2 continuous tests practical part	2x6 (12)	2x10 (20)
Passed theoretical part/final exam	21	40
Total points required to pass the exam*	60	100

The seminar paper/project assignment is optional and the student independently decides whether to participate in the activities and gain additional points.

** When scoring points with decimal values, if the decimal value is equal to or greater than 5, then it is rounded up to the whole number with a higher value. For example, If the student obtained 65.5 points, then it is considered that the student obtained a total of 66 points for this subject.*

19.1.	Tests: scores	Continuous checks practical part – 2 checks

<table>
<tr><td></td><td>19.2.</td><td colspan="2">Written essay/project assignment, oral or wrriten presentation: points</td><td>Theoretical part is carried out through Final exam oral or written</td></tr>
<tr><td></td><td>19.3.</td><td colspan="2">Final exam: points</td><td></td></tr>
<tr><td rowspan="6">20.</td><td rowspan="6">Grading criteria (points/grade)</td><td>up to 59 points</td><td>5 (five) (F)</td></tr>
<tr><td>60 to 68 points</td><td>6 (six) (E)</td></tr>
<tr><td>69 to 76 points</td><td>7 (seven) (D)</td></tr>
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<tr><td>93 to 100 points</td><td>10 (ten) (A)</td></tr>
<tr><td>21.</td><td colspan="2">Method of monitoring the quality of teaching process</td><td colspan="2">Report from the Self-evaluation committee and anonymous student survey</td></tr>
<tr><td rowspan="4">22.</td><td colspan="4">Literature</td></tr>
<tr><td rowspan="2">22.1.</td><td colspan="4">Mandatory literature</td></tr>
<tr><td>No.</td><td>Author</td><td>Title</td><td>Publisher</td><td>Year</td></tr>
<tr><td colspan="5">1. M. C. Appleby, I. A. S. Olsson, F. Galindo, Animal Welfare, 3rd edition, 2018
2. Aubrey Manning, Stamp Dawkins, An Introduction to Animal Behaviour, 2012
3. BSAVA Manual of Practical Veterinary Welfare, 2021
4. Melissa Bateson, Measuring Behaviour An Introductory Guide, 2021
5. Improving Animal Welfare: A Practical Approach 1st Edition, CAB International, 2010
6. D. M. Broom and K. G. Johnson, Stress and Animal Welfare, Springer International Publishing</td></tr>
<tr><td rowspan="2">22.2.</td><td colspan="4">Additional literature</td></tr>
<tr><td colspan="4">Understanding Animal Welfare: The Science in its Cultural Context (Fraser, D)
Animal Welfare: Understanding Sentient Minds and Why It Matters (Webster, J)
Why Animals Matter: Animal consciousness, animal welfare, and human well-being (StampDawkins, M)
The Sciences of Animal Welfare (Mellor, D, Patterson-Kane, E and Stafford, K)
Animal Behavior for Shelter Veterinarians and Staff (Eds DiGangi, BA, Cussen, VA, Reid,PJ, and Collins, KA.)
Animal Welfare – Springer Book Series, Clive Phillips
Management and Welfare of Farm Animals: The UFAW Farm Handbook (Eds Webster, Jand Margerison, J)
The Slaughter Of Farmed Animals: Practical Ways Of Enhancing Animal Welfare (edsGrandin, T and Cockram, M)
Livestock Handling And Transport (Ed Grandin, T)
Human-Livestock Interactions: The Stockperson And The Productivity And Welfare Of Intensively Farmed Animals (Hemsworth and Coleman)
The Welfare of Animals Used in Research: Practice and Ethics (Hubrecht, R)
Companion Animal Care and Welfare: The UFAW Companion Animal Handbook (EdYeates, J)
Zoo Animal Learning and Training (eds Melfi, VA, Dorey, NR and Ward, SJ) Companion Animal Ethics (Sandoe, P, Corr, S, and Palmer, C)</td></tr>
</table>

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Attachement no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Clinical and Laboratory Diagnostics in Companion Animals and Equines**			
2.	Code	VM2023-326			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Internal Diseases in Small Animals and Equides			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Third (III)	Semester	Sixth (VI)
7.	Course load expressed in ECTS credits	3.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Assoc. Prof. Elena Atanaskova Petrov, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course	For attending: Decision on Study Rules for first and second cycle integrated studies (undergraduate studies) and second cycle studies (postgraduate studies) at FVMS (UG 554, 26.07.2021)			
11.	Objectives of the course program (competencies) and learning outcomes	The course aims to familiarize students with the basic principles of clinical and laboratory diagnostics in pets (dogs and cats) and equines. Clinical diagnostics studies preparation of animals for clinical examination, recognition of symptoms of internal diseases of individual organs or organ systems using inspection, palpation, percussion and auscultation, sense of smell and measurement of changes in body weight. weaknesses and syncope, anorexia and polyphagia, behavioral changes, pain, hyperthermia, hypothermia, cough, dysplea, ascites, peritonitis and other causes of abdominal distension, cardiopulmonary arrest, sneezing and nasal discharge, abnormal heart sounds and murmurs, ECG; changes in pulse quality, edema, liquidothorax, vomiting, regurgitation, dysphagia, diarrhea, constipation, tenesmus, incontinence, melena, hematochezia, ptyalism, bending, tremor, ataxia, paresis, paralysis, stupor, coma, epileptiform seizures, polyuria, polydipsia , incontinence, dysuria, stranguria, urinary tract obstruction, urinalysis, vaginal and foreskin discharge, anemia, cyanosis, jaundice, skin changes, lymphadenopathy, laboratory tests, blood sampling, catheterization, application of drugs subcutaneously, intramuscularly and intravenous as well as determination of fluid therapy.			
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	Content of the subject program: **Theoretical part**: 1. Acquaintance with the subject, definition of terms such as symptoms, diagnosis, prognosis, differences between approaches in different species; 2. Clinical examination plan; prior acquaintance with the patient. 3. General overview of animals. 4. Triassic (temperature, pulse and respiration). 5. Review of mucous membranes, skin and lymph nodes 6. Review of respiratory system 1			

		part. 7. Overview of the respiratory system part 2. 8. Cardiovascular System Overview 9. Digestive System Overview - Part 1 10. Digestive System Overview - Part 2. 11. Review of urinary system 1 part. 12. Overview of the urinary system part 2. 13. Overview of nervous system 1. 14. Overview of nervous system 2. 15. Laboratory diagnostics. **Practical part**: 1. Access and methods of fixation for examination and the necessary equipment and its use. 2. Describing the national and taking an anamnesis from the owner, recording it in the patient's medical file. 3. Getting to know the basic methods of clinical examination (inspection, palpation, percussion, auscultation). 4. Taking trias (temperature, pulse, breathing). 5. Using basic clinical examination techniques when examining skin, mucous membranes and lymph nodes. 6. Review of upper airways with basic methods of clinical examination. 7. Review of lower airways with basic methods of clinical examination. 8. Examination of the heart with the basic methods of clinical examination and basic electrocardiography. 9. Clinical signs, examination of the mouth and oral cavity, examination of the esophagus. 10. Palpation of the abdomen. Rectal examination. 11. Examination of kidneys and bladder. 12. Catheterization and urine analysis. 13. Assessment of muscle mass, examination of the bone system, motility, movement coordination. 14. Assessment of behavior and mental status, examination of cranial nerves, proprioception, spinal reflexes, sensation of pain. 15. Taking samples for laboratory analysis, hematological analyzes and biochemical analysis of serum.		
13.	Inter-connection with other subjects (courses)			
14.	Detailed description of teaching and working methods for the subject	Theory classes: interactive (lectures in large group with discussion and active participation of the students). Practicals: practicals and other ways of work with smaller groups Written assay: learning with use of referent textbooks and internet, preparing written assay; presentation and discussion about the written assay (optional).		
15.	Total available time	75 hours Theory classes: 1 hour/per week (15 hours) Practicals: 2 hours/per week (30 hours)		
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	15
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours	30
		16.3.	Practice: total hours	
17.	Other forms of activities	17.1.	Project assignments: hours	
		17.2.	Individual tasks: hours	15
		17.3.	Self-directed learning	15
18.	Conditions for receiving authorization	The student gets authorisation if he/she has a minimum attendance of 70% of lectures (min 12 hours and 5 points) and practical (minimum 24 hours and minimum of 10 points).		
19.	Assessment methods			
	19.1.	Tests: scores		20-40 points
	19.2.	Written essay/project assignment, oral or wrriten presentation: points		0-5 (optional)
	19.3.	Final exam: points		25-40
20.	Grading criteria (points/grade)		up to 59 points	5 (five) (F)
			60 to 68 points	6 (six) (E)

			69 to 76 points		7 (seven) (D)
			77 to 84 points		8 (eight) (C)
			85 to 92 points		9 (nine) (B)
			93 to 100 points		10 (ten) (A)
21.	Method of monitoring the quality of teaching process		Report from the Self-evaluation committee and anonymous student survey		
22.	Literature				
	22.1. Mandatory literature				
		No.	Author	Title	Publisher	Year
		1.	Radostits, O.M., Mayhew, I.G. and Houston, D.M.	*Veterinary clinical examination and diagnosis*	WB Saunders	2000
		2.	Englar, R.E.	*Performing the Small Animal Physical Examination*	John Wiley & Sons	2017
		3.	Goran Nikolovski	*Script for internal use - Clinical diagnostics in non-ruminant animals*		
	22.2. Additional literature				
		No.	Author	Title	Publisher	Year
		1.	Bexfield, N. and Lee, K.	*BSAVA guide to procedures in small animal practice (No. Ed. 2).*	British Small Animal Veterinary Association	2014.
		2.				
		3.				

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Attachement no. 3		**Integrated first and second cycle of studies**
1.	Program course title	**Clinical and Laboratory Diagnostics in Farm Animals**
2.	Code	VM2023-327
3.	Study program	Veterinary medicine
4.	Organizer of the study program (unit, i.e. institute, department, section	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Internal diseases of Farm animals

5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Third (III)	Semester	Sixth (VI)
7.	Course load expressed in ECTS credits	3.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Dine Mitrov, PhD Prof. Igor Dzadzovski, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course	For attending: Decision on Study Rules for first and second cycle integrated studies (undergraduate studies) and second cycle studies (postgraduate studies) at FVMS (UG 554, 26.07.2021)			
11.	Objectives of the course program (competencies) and learning outcomes	The Clinical Diagnostics course is a crucial part of clinical pathology, focusing on the application of scientific advancements to accurately diagnose diseases in farm animals, specifically ruminants and pigs. This course acts as a bridge between preclinical and clinical education, offering both theoretical and practical training to students. Upon completing the curriculum and passing the exam, students will gain the ability to recognize, collect, organize, and analyze symptoms that indicate diseases in various organ systems. Through the identification of symptoms, students will learn how to form a clinical diagnosis and determine the nature of the disease. The course also equips students with essential skills in conducting clinical examinations of organ systems, enabling them to make accurate and reliable diagnoses.Additionally, students will learn the importance of laboratory diagnostic techniques, such as examining biological samples, which are critical tools for confirming diagnoses and predicting disease outcomes. These skills will be fundamental for future veterinary practitioners in ensuring effective disease management and treatment for farm animals. The general objective of the course is to enhance students' practical abilities by enabling them to apply theoretical knowledge effectively in real-world situations. By mastering these diagnostic techniques and interpretations, students will be better prepared to make informed decisions in clinical veterinary practice, improving their diagnostic accuracy and overall ability to manage animal health.			
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	Theoretical teaching Fundamentals of clinical diagnostics: Introduction. Preliminary acquaintance with a sick animal. General examination of animals. Special examination of animals. Examination of the respiratory organs - upper respiratory tract. Examination of the respiratory organs - lower respiratory tract. Examination of the cardiovascular system. Examination of the digestive organs in ruminants. Examination of the liver in ruminants. Examination of the urinary system. Examination of the nervous system. Laboratory diagnostics: Laboratory and special diagnostic methods. Practical teaching Clinical diagnostics. Introduction, approach to animals, fixation and safe handling. Anamnesis, national, habitus, triage and rumination. Techniques of clinical examination of skin, mucous membranes, lymph nodes and lymphatic vessels. Techniques of clinical examination of the respiratory system. Techniques of clinical examination of the cardiovascular system. Techniques of clinical examination of the digestive system, probing (nasal and oral probe), rectal			

		exploration. Examination of the abdomen in cows. Techniques of clinical examination of the urinary system, catheterization. Techniques of clinical examination of the locomotor system. Techniques of clinical examination of the nervous system. Laboratory diagnostics. Description of the entire procedure for the correct collection of clinical material (blood, serum, plasma, milk, tissues, organs, organ systems or whole carcass) for laboratory analysis. Packaging and conditions for transportation of diagnostic materials to the laboratory. Preparation of materials for laboratory analysis. Interpretation of results.		
13.	Inter-connection with other subjects (courses)			
14.	Detailed description of teaching and working methods for the subject	Theoretical teaching: interactive (lectures in a large group with discussion and student engagement). Practical teaching: exercises and other forms of work in smaller groups. Seminar paper: learning using professional literature and the Internet, preparing a seminar paper (essay/poster); presentation and discussion of the seminar paper.		
15.	Total available time	75 hours Theory classes: 1 hour/per week (15 hours) Practicals: 2 hours/per week (30 hours)		
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	15
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours	30
		16.3.	Practice: total hours	
17.	Other forms of activities	17.1.	Project assignments: hours	
		17.2.	Individual tasks: hours	15
		17.3.	Self-directed learning	15
18.	Conditions for receiving authorization	Attendance at classes is not scored if the student is absent from more than 30% of classes according to the study rules. In order to gain the right to take the final exam, the student must earn a minimum of 40 points on the following bases: theoretical, practical classes and a final practical exam. Continuous tests are an opportunity for the student to be assessed for his knowledge of the subject matter without the obligation to take the final exam. If the student does not earn the required minimum in the first control test, he is not entitled to take the second one. If the student passes the first but does not pass the second continuous test, it is considered that the student has not passed the continuous tests and does not earn points on that basis. Students who do not pass the control tests proceed to take the final exam. If the student is not satisfied with the points gained on the continuous tests, he may cancel them and use the points earned on other bases to take the final exam. Project activity or seminar work is not mandatory. The student may request a topic for project activity/seminar work 30 days before the end of the semester, and must submit it no later than 10 days before the scheduled exam date. The final practical exam is mandatory and is taken on a farm.		
19.	Assessment methods The student is required to actively follow all planned activities with which he/she earns points as part of the final assessment. Continuous tests: written First test: submitted material including the cardiovascular system; Second test: submitted material from the digestive system. Final exam: oral (written).			

Type of activity	*Points*	
	minimum	*maximum*
Attendance at theoretical lectures	12	15
Attendance at practical lectures	17	22
Accepted seminar paper or project assignment (optional)	0	8
Passed 2 continuous tests	2x10 (20)	2x20 (40)
Passed practical exam/on farm	5	5

	19.1.	Tests: scores	20-40 points
	19.2.	Written essay/project assignment, oral or wrriten presentation: points	0-8 (optional)
	19.3.	Final exam: points (optional, if the student didn't pass both continuous tests)	18-50 points

20.	Grading criteria (points/grade)	up to 59 points	5 (five) (F)
		60 to 68 points	6 (six) (E)
		69 to 76 points	7 (seven) (D)
		77 to 84 points	8 (eight) (C)
		85 to 92 points	9 (nine) (B)
		93 to 100 points	10 (ten) (A)
21.	Method of monitoring the quality of teaching process	Report from the Self-evaluation committee and anonymous student survey	

22. Literature

22.1. Mandatory literature

No.	Author	Title	Publisher	Year
1.	Peter Jackson and Peter Cockcroft	*Clinical Examination of Farm Animals*	Blackwell Science	2002
2.	Igor Djadjovski	*Authorized lectures (presentations) Clinical diagnostics in farm animals*	Igor Djadjovski Dine Mitrov	2019-2024
3.				
4.				

22.2. Additional literature

No.	Author	Title	Publisher	Year

		1.	Scott R.R. Haskell	*Small ruminant clinical diagnosis and therapy*	University of MN College of Veterinary Medicine	2001
		2.				
		3.				

No. 38

Attachement no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Internal Diseases of Small Animals and Equids 1**			
2.	Code	VM2023-411			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Internal Diseases in Small Animals and Equides			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Fourth (IV)	Semester	Seven (VII)
7.	Course load expressed in ECTS credits	6.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Assoc. prof. Elena Atanaskova Petrov, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course	For attending: Decision on Study Rules for first and second cycle integrated studies (undergraduate studies) and second cycle studies (postgraduate studies) at FVMS (UG 554, 26.07.2021) received authorization for Clinical and laboratory diagsnostis in companion animals and equines For passing: passed Animal Physiology 2, Basic Pathology, Parasitology and Parasitic Diseases 1, General Pharmacology			
11.	Objectives of the course program (competencies) and learning outcomes	Diagnosis and treatment of diseases of the cardiovascular, respiratory, digestive system, as well as diagnosis and treatment of most often skin diseases. Basics of the most common emergency situations and how to treat them.			
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	Theoretical part: 1. Congenital heart diseases, 2. Inflammatory diseases of the myocardium and pericardium, 3. Pulmonary hypertension and arrhythmias. 4. Cardiomyopathies and heart valve diseases. 5. Upper respiratory tract diseases. 6. Lower respiratory tract disease. 7. Diseases of the digestive system, part 1. 8. Diseases of digestive system part 2. 9. Diseases of the digestive system, part 3. 10. Colic in horses 1 part. 11. Colic in horses 2 part 12. Pancreatic diseases. 13. Most common skin diseases. 14. Anemia, polycythemia, disorders of the bone marrow. 15. Emergencies in dogs and cats Practical part: 1.			

		Recognition and diagnostics of patients with congenital heart diseases. 2. Overview of patients, interpretation of clinical signs, reading of ECG records. 3. Review of patients, interpretation of clinical signs, performance and reading of ECG records. 4. Examination of patients, interpretation of clinical signs, reading ECG records, X-ray recordings.5. Review of patients with respiratory diseases, interpretation of clinical signs, sampling for analysis, interpretation of results.6. Patient Review, interpretation of clinical signs, sampling for analysis, interpretation of results. 7. Review of patients with gastrointestinal diseases, interpretation of clinical signs, taking samples for analysis, interpretation of results. 8. Examination of patients, interpretation of clinical signs, sampling for analysis, interpretation of results. 9. Review of patients with diseases of the small and large intestines, interpretation of clinical signs, sampling for analysis, interpretation of results. 10. Review of patients, interpretation of clinical signs, sampling for analysis, interpretation of results. 11. Approach and examination of patients with colic, taking samples for analysis, interpretation of results. 12. Review of patients with pancreatic diseases, interpretation of clinical signs, sampling for analysis, interpretation of results. 13. Examination of patients with skin diseases, taking samples for analysis,interpretation of results 14. Examination of patients, interpretation of clinical signs, sampling for analysis interpretation of results 15. Approach and protocol for patients with emergency conditions.		
13.	Inter-connection with other subjects (courses)	Animal physiology 1 and 2, Pathophysiology 1 and 2, Clinical and Laboratory Diagnostics in Companion Animals and Equines		
14.	Detailed description of teaching and working methods for the subject	Theoretical teaching: lectures to enrolled students, development of discussion and engagement of students by preparing presentations on specific topics. Practical teaching: exercises in groups of 4-5 students, working with patient cases, preparation of reports. Independent learning-tasks: learning using professional literature and the Internet, preparing a seminar paper; presentation and discussion of the seminar paper (optional).		
15.	Total available time	150 hours Theory classes: 2 hours/per week (30 hours) Practicals: 4 hours/per week (60 hours)		
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	30
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours	60
		16.3.	Practice: total hours	
17.	Other forms of activities	17.1.	Project assignments: hours	60
		17.2.	Individual tasks: hours	
		17.3.	Self-directed learning	
18.	Conditions for receiving authorization	The student gets authorisation if he/she has a minimum attendance of 70% of theoretical lectures and practical lectures.		
19.	Assessment methods			
	19.1.	Tests: points		20-40
	19.2.	Written essay/project assignment, oral or wrriten presentation: points		0-5 (optional)
	19.3.	Final exam: points		25-40

20.	Grading criteria (points/grade)			up to 59 points	5 (five) (F)	
				60 to 68 points	6 (six) (E)	
				69 to 76 points	7 (seven) (D)	
				77 to 84 points	8 (eight) (C)	
				85 to 92 points	9 (nine) (B)	
				93 to 100 points	10 (ten) (A)	
21.	Method of monitoring the quality of teaching process			Report from the Self-evaluation committee and anonymous student survey		
22.	Literature					
	22.1.	Mandatory literature				
		No.	Author	Title	Publisher	Year
		1.	Ettinger, S.J., Feldman, E.C. and Cote, E.	*Textbook of Veterinary Internal Medicine7th edition.*	Elsevier health sciences	2010
		2.	Richard W. Nelson and C. Guillermo Couto	*Small animal internal medicine 5th edition*	Elsevier	2013
		3.	Gross, T.L., Ihrke, P.J., Walder, E.J. and Affolter, V.K.	*Skin diseases of the dog and cat: clinical and histopathologic diagnosis*	John Wiley & Sons	2008
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year
		1.	King, L.G. and Boag, A.	*BSAVA manual of canine and feline emergency and critical care (No. Ed. 3).*	British small animal veterinary association	2018
		2.	Day, M.J., Mackin, A. and Littlewood, J.D.	*BSAVA Manual of Canine and Feline Haematology and Transfusion Medicine*	British Small Animal Veterinary Association.	2000
		3.				

No. 39

Attachement no. 3		**Integrated first and second cycle of studies**
1.	Program course title	**Reproduction 1**
2.	Code	VM2023-412

3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Reproduction			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Fourth (IV)	Semester	Seventh (VII)
7.	Course load expressed in ECTS credits	7.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Toni Dovenski, PhD - leader Prof . Branko Atanasov, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course	For attending: Decision on Study Rules for first and second cycle integrated studies (undergraduate studies) and second cycle studies (postgraduate studies) at FVMS (UG 554, 26.07.2021). For passing: passed Pathophysiology 2, Basic Pathology and Parasitology and Parasitic Diseases 1			
11.	Objectives of the course program (competencies) and learning outcomes	The objective of the course is to introduce the students in the main principles of the reproduction of domestic animals. The entire course covers the physiology of reproduction and includes gynecology, endocrinology, parturition as well as postpartum period.			
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	Theoretical part - Physiology of reproduction Anatomy and Physiology of the female genital organs. Anatomy and Physiology of the male genital organs. Endocrinology of reproduction. Physiology of pregnancy. Physiology of parturition. Physiology of the puerperium. Practical part Anatomy of female and male reproductive tract. Gynecological examination of cows, mares, sheep, goats, pigs, dogs and cats. Ultrasonographic examination of the genital tract in large and small animals. Pregnancy diagnosis in cows and mares with rectal palpation. Ultrasonographic diagnosis of pregnancy in cows, mares, pigs, sheep, goats, dogs and cats. Laboratory methods for pregnancy diagnosis. Examination of the genital tract in large and small animals just prior and during parturition. Examination of the genital tract in large and small animals in the puerperium.			
13.	Inter-connection with other subjects (courses)				
14.	Detailed description of teaching and working methods for the subject	Theoretical teaching: interactive lectures Practical teaching: field and laboratory practice and other forms of work and engagement in smaller groups (5-8 students) Seminar work: learning using professional literature and the Internet, preparation of a seminar work (essay/poster); presentation and discussion of the seminar work			
15.	Total available time	175 hours Theory classes: 3 hours/per week (45 hours)			

		Practicals: 4 hours/per week (60 hours)		
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	45
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours	60
		16.3.	Practice: total hours	
17.	Other forms of activities	17.1.	Project assignments: hours	
		17.2.	Individual tasks: hours	
		17.3.	Self-directed learning	70
18.	Conditions for receiving authorization			

19. Assessment methods

For being able to reach the final exam student has to gain up to 40 points from theory classes and practicals and the tests. If student does not show result on the one of the tests, but has gained points only on theory classes and practicals, he/she has to go on complete final exam.

19.1.	Tests: points	20
19.2.	Written essay/project assignment, oral or wrriten presentation: points	10
19.3.	Final exam: points	70

20.	Grading criteria (points/grade)	up to 59 points	5 (five) (F)
		60 to 68 points	6 (six) (E)
		69 to 76 points	7 (seven) (D)
		77 to 84 points	8 (eight) (C)
		85 to 92 points	9 (nine) (B)
		93 to 100 points	10 (ten) (A)
21.	Method of monitoring the quality of teaching process	Report from the Self-evaluation committee and anonymous student survey	

22. Literature

Mandatory literature

No.	Author	Title	Publisher	Year
1.	David E. Noakes Timothy J Parkinson Gary CW England	*Arturs veterinary reproduction and obstetrics*	Saunders	2001
2.	P.L Senger	*Pathways to Pregnancy& Parturition*	Current Conceptions. INC	2012
3.				
4				

Additional literature

No.	Author	Title	Publisher	Year
1.				
2.				
3.				

No. 40

Attachement no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Anesthesia and Intensive Care**			
2.	Code	VM2023-413			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Surgery, Orthopedics and Ophthtalmology			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Fourth (IV)	Semester	Seventh (VII)
7.	Course load expressed in ECTS credits	3.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Plamen Trojachanec, PhD Prof. Ksenija Ilievska, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course	For attending: Decision on Study Rules for first and second cycle integrated studies (undergraduate studies) and second cycle studies (postgraduate studies) at FVMS (UG 554, 26.07.2021). For passing: passed Pathophysiology 1, Basic Pathology and General Pharmacology			
11.	Objectives of the course program (competencies) and learning outcomes	The course is designed to integrate and apply the knowledge students have gained in clinical anatomy, pathology, pathological physiology, and pharmacology, with a focus on anesthesiology and intensive care for critically ill animals. The goal is to equip students with the skills necessary to apply these foundational subjects when administering anesthesia and providing intensive care, ensuring they are prepared for real-world clinical situations. Students will be trained to work independently in everyday veterinary practice, handling pets and other animal species with confidence. This includes performing pre-anesthetic evaluations, assessing anesthetic risks, monitoring anesthesia, and diagnosing and treating emergency cases. Special emphasis is placed on the practical aspects of anesthesiology and intensive care, ensuring that students gain hands-on experience with these critical procedures. The course is closely aligned with pre-clinical subjects, particularly clinical anatomy, animal physiology, clinical and laboratory diagnostics, and Basic Pathology. These subjects provide the necessary foundation for understanding the complexities of anesthesia and intensive care, enabling students to make informed decisions in the care of both pets and farm animals.			
12.	Detailed course content by chapter and unit with	Theoretical Teaching: The theoretical part of the course covers a wide range of essential topics			

	learning outcomes for each chapter	in anesthesiology, aiming to provide students with a deep understanding of the principles and practices involved in anesthesia for veterinary patients: **Introduction to Anesthesia and General Anesthetic Principles**; Overview of anesthesia types, mechanisms of action, and how anesthesia affects the body; D**rugs in Anesthesiology**: Detailed study of the various drugs used in anesthesia, including anesthetics, analgesics, and adjuvants; **Preparation of the Patient for Anesthesia**: This includes patient evaluation, risk assessment, and establishing an anesthesia protocol; **Monitoring During Anesthesia**: Techniques and tools for observing and maintaining patient stability throughout the procedure; **Premedication and Sedation**: Overview of pre-anesthetic medications and their role in calming and preparing the patient for anesthesia; **General Injection Anesthesia**: Use of injectable anesthetic agents and their applications in clinical practice; **Inhalation Anesthesia**: Study of inhaled anesthetics, devices used, and the systems in place to deliver them effectively; **Types of Anesthetic Devices and Systems for Inhalation Anesthesia**: Detailed understanding of the various devices used in inhalation anesthesia, such as anesthetic machines and delivery systems; **Anesthesia and Analgesia in Patients with Specific Diseases**: Consideration of how anesthesia should be tailored to animals with pre-existing health conditions; **Perioperative Anesthetic Complications**: Awareness of potential complications during and after anesthesia and how to manage them; **Fluid Therapy**: Importance of hydration and electrolyte balance during anesthesia, and strategies for fluid administration; **Resuscitation**: Techniques for reversing or managing complications that arise during or after anesthesia; **Euthanasia**: Ethical and practical considerations in euthanizing animals, and the use of anesthesia during the process. Practical Teaching: The practical part of the course focuses on the hands-on application of anesthesiology techniques, ensuring that students are well-prepared for real-world scenarios: **Preparation of the Patient for Anesthesia**: Hands-on experience in preparing various patients, with a particular focus on pediatric and geriatric patients. Students will also learn how to fill out anesthesia protocols based on individual patient needs; **Calculation of Doses of Anesthetics and Analgesics**: Students will practice calculating appropriate doses for anesthetic and analgesic drugs, and applying them in clinical scenarios; **Endotracheal Intubation**: Practical demonstrations and exercises in performing endotracheal intubation on patients and animal models (using teaching aids) to ensure proper airway management; **Techniques for Maintaining General Inhalation Anesthesia**: Training in how to administer and maintain general anesthesia using inhalation techniques, including the use of anesthetic machines and monitoring devices; **Techniques of Infiltrative and Local Analgesia**: Hands-on practice with local anesthetic techniques for pain management, such as infiltration and regional anesthesia; **Maintaining General Injection and Inhalation Anesthesia**: Practical skills in keeping anesthesia levels stable using both injection and inhalation methods; **Anesthetic Monitoring**: Training in the use of monitoring tools, understanding the advantages and disadvantages of different monitoring systems to ensure patient safety; **Resuscitation**: Practical exercises in emergency resuscitation techniques to respond to anesthesia-related complications.This combination of theoretical and practical teaching will ensure that students are well-equipped to provide safe and effective anesthetic care to animals in clinical settings, and to manage both routine and emergency situations

<table>
<tr><td></td><td></td><td colspan="3">with confidence.
During the course, students are required to work also in the skills' lab.</td></tr>
<tr><td>13.</td><td>Inter-connection with other subjects (courses)</td><td colspan="3"></td></tr>
<tr><td>14.</td><td>Detailed description of teaching and working methods for the subject</td><td colspan="3">Introduction to the basics of veterinary anesthesiology through interactive teaching based on theoretical presentation of the material, discussions that encourage independent work of students individually or in smaller groups.
Practical teaching consists of working in smaller groups to acquire practical knowledge of the basic methods and techniques in anesthesiology.
Seminar paper or project assignement (optional): learning using professional literature and the Internet, preparing a seminar paper (essay/poster).</td></tr>
<tr><td>15.</td><td>Total available time</td><td colspan="3">75 hours
Theory classes: 1 hour/per week (15 hours)
Practicals: 1 hour/per week (15 hours)</td></tr>
<tr><td rowspan="3">16.</td><td rowspan="3">Forms of teaching activities</td><td>16.1.</td><td>Theoretical lectures: hours</td><td>15</td></tr>
<tr><td>16.2.</td><td>Practical lectures (laboratory, auditorial), seminars, team work: hours</td><td>15</td></tr>
<tr><td>16.3.</td><td>Practice: total hours</td><td></td></tr>
<tr><td rowspan="3">17.</td><td rowspan="3">Other forms of activities</td><td>17.1.</td><td>Project assignments: hours</td><td></td></tr>
<tr><td>17.2.</td><td>Individual tasks: hours</td><td></td></tr>
<tr><td>17.3.</td><td>Self-directed learning</td><td>45</td></tr>
<tr><td>18.</td><td>Conditions for receiving authorization</td><td colspan="3"></td></tr>
<tr><td>19.</td><td colspan="4">Assessment methods

The grading system involves multiple components, including tests, practical exams and class attendance. Each part of the exam (test, practical exam, and attendance) is assigned a grade. The grade for each part is then multiplied by the percentage that part contributes to the final grade. After that, the result is multiplied by 10 to determine the points for each part.The final grade is the sum of the points earned from: the test (if applicable), the practical exam and class attendance. If a student does not receive a positive grade on the test or is dissatisfied with their performance, they can take a final exam. In this case, the points from the test are not considered in the final grade calculation. Only the final exam and possibly the practical exam and class attendance will count toward the final grade.</td></tr>
</table>

Type of activity	Points	
	minimum	maximum
Attendance at theoretical lectures	3	5
Attendance at practical lectures	6	10
Test from anesthesiology	36	60
Practical exam	15	25
Project assignament (optional)	0	5
Final exam (optional)		
Total	60	100

	19.1.	Tests: points		The practical exam contributes 25% in the grade. The anesthesiology test contributes 85% in the grade. A test with less than 50% correct answers will not be taken into account for calculation. Before taking the test, the student must take a practical exam, which covers practical skills in relation to the anesthetic mashine, drugs calculation, endotracheal intubation and CPR.
	19.2.	Written essay/project assignment, oral or wrriten presentation: points		
	19.3.	Final exam: points		
20.	Grading criteria (points/grade)		up to 59 points	5 (five) (F)
			60 to 68 points	6 (six) (E)
			69 to 76 points	7 (seven) (D)
			77 to 84 points	8 (eight) (C)
			85 to 92 points	9 (nine) (B)
			93 to 100 points	10 (ten) (A)
21.	Method of monitoring the quality of teaching process		Report from the Self-evaluation committee and anonymous student survey	

22. Literature

22.1. Mandatory literature

No.	Author	Title	Publisher	Year
1.	Prof. Plamen Trojachanec, Prof. Ksenija Ilievska	*Fundamentals of Veterinary Anesthesiology – authorized lectures*		
2.	Prof. Plamen Trojachanec Prof. Ksenija Ilievska	*Anestesiology with intensive care (authorized lectures and practicals) updated every year*		
3.				

22.2. Additional literature

No.	Author	Title	Publisher	Year
1.	Lerche F., Aarne	*Handbook of Small Animal Regional Anesthesia and Analgesia techniques*	Willey Blackwell	2016
2.	Thurmon J.C., Tranquilli W.J., Benson G.J.Lumb & Jones	*Veterinary Anesthesia 3rd edition*	Williams &Wilkins	1996
3.	Johnston S.S.. Tobias K.M.	*Veterinary surgery, 2nd edition*	Elsevier	2017

		3.	Silverstein C.D., Hopper K.	*Small animal critical care medicine*	Saunders, Elsevier	2009
		4.	Fossum Theresa W.	*Small animal surgery, 5th edition*	Elsevier	2017

No. 41

Attachement no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**General Surgery**			
2.	Code	VM2023-414			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Surgery, Orthopedics and Ophthtalmology			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Fourth (IV)	Semester	Seventh (VII)
7.	Course load expressed in ECTS credits	4.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Plamen Trojachanec, PhD Prof. Ksenija Ilievska, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course	For attending: Decision on Study Rules for first and second cycle integrated studies (undergraduate studies) and second cycle studies (postgraduate studies) at FVMS (UG 554, 26.07.2021) For passing: passed Pathophysiology 1, Basic Pathology and General Pharmacology			
11.	Objectives of the course program (competencies) and learning outcomes	The objectives of the course is to encourage students to apply the previous gained knowledge from preclinical subjects, such as clinical anatomy, Basic Pathology, veterinary special pathology, pathophysiology and pharmacology, in order to apply the basic surgical principles and treatment of surgical patients. The student should be able to work independently in everyday practice with companion animals ands other animal species through practical work with patients and animal models and acquire knowledge about the general surgical principles, asepsis, antisepsis, restrain techniques, presurgical examination and preparation for surgery, hemostasis and wound treatment, antimicrobial therapy, surgical prophylaxis, diagnostics of different types of hernias and their surgical treatment. The course builds on knowledge from preclinical subjects like anatomy**,** microbiology**,** Basic Pathology**,** and veterinary special pathology, which are crucial for understanding the underlying conditions affecting surgical patients			

		and for developing appropriate treatment.		
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	Theoretical Teaching: The course described offers a comprehensive approach to teaching both the theoretical and practical aspects of veterinary surgery. 1. Introduction to Surgery and Surgical Nomenclature:; 2. Trauma: Mechanisms and Effects; 3. Local Tissue Response to Trauma or Surgery; 4. Wound and Treatment of Traumatic Injuries; 5. Wound Healing; 6. Basic Operative Techniques; 7. Principles of Aseptic Surgery; 8. Coeliotomy (Abdominal Surgery); 9. Bleeding and Hemostasis; 10. Preoperative Preparation of Surgical Patients and Monitoring; 11. Postoperative Care, Wound Infection, and Antimicrobial Prophylaxis; 12. Nutritional Management of the Patient; 13. Diseases of the Skin, Subcutaneous Tissue, and Ear; 14. Methods for Reconstruction of Skin and Subcutaneous Tissue; 15. Hernias; 16. Peritonitis; 17. Basic Principles of Oncological Surgery Practical teaching emphasis: Physical Restraint of Patients; Basic Clinical techniques; Application of Asepsis and Antisepsis in Surgery; Preoperative Examination and Evaluation of the Patient; Desmiurgy (Surgical Techniques); Wound Treatment and Placement of Dressings and Bandages; Introduction to and Handling of Surgical Instruments; Suture Materials and Stitches; Processing of Surgical Patients. In summary, this course combines a thorough theoretical and practical experience to prepare students for effective and safe surgical practice. Theoretical teaching focuses on understanding the principles and techniques of surgery, while practical teaching emphasizes hands-on skills necessary for real-world clinical work. This combination ensures that students are fully equipped to handle surgical cases independently. During the course, students are required to work also in the skills' lab.		
13.	Inter-connection with other subjects (courses)			
14.	Detailed description of teaching and working methods for the subject	Introduction to the basics of general surgery through interactive teaching based on theoretical presentation, discussions that encourage students for independent work individually or in small groups. **Practical teaching** enables the hands-on experience needed for mastering surgical techniques. The optional **seminar paper** offers a chance for deeper research and independent learning, further enriching the student's understanding of the subject.		
15.	Total available time	100 hours Theory classes: 2 hours/per week (30 hours) Practicals: 2 hours/per week (30 hours)		
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	30
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours	30
		16.3.	Practice: total hours	
17.	Other forms of activities	17.1.	Project assignments: hours	
		17.2.	Individual tasks: hours	
		17.3.	Self-directed learning	40
18.	Conditions for receiving authorization	Students who attend less than 30% of the theoretical classes do not receive attendance points and signature; attendance at 30-70% of the classes carries 3 points, while attendance at more than 70% of the classes carries 5 points. Students who attend less than 30% of the practical classes do not receive attendance points and signature; attendance at 30-70% of the classes carries 6 points, while attendance at more than 70% of the classes carries 10 points		

19. Assessment methods

The grading system involves multiple components, including tests, practical exams and class attendance. Each part of the exam (test, practical exam, and attendance) is assigned a grade. The grade for each part is then multiplied by the percentage that part contributes to the final grade. After that, the result is multiplied by 10 to determine the points for each part.The final grade is the sum of the points earned from: the test (if applicable), the practical exam and class attendance. If a student does not receive a positive grade on the test or is dissatisfied with their performance, they can take a final exam. In this case, the points from the test are not considered in the final grade calculation. Only the final exam and possibly the practical exam and class attendance will count toward the final grade.

Type of activity	Points	
	minimum	maximum
Attendance at theoretical lectures	3	5
Attendance at practical lectures	6	10
Test from general surgery	33	55
Practical exam	18	30
Project assignament (optional)	0	5
Final exam (optional)		
Total	60	100

19.1.	Tests: points	The practical exam contributes 30% to the grade. The general surgery test contributes 55% to the grade. A test with less than 50% correct answers will not be taken into account for calculation.
19.2.	Written essay/project assignment, oral or wrriten presentation: points	
19.3.	Final exam: points	

20.	Grading criteria (points/grade)	up to 59 points	5 (five) (F)
		60 to 68 points	6 (six) (E)
		69 to 76 points	7 (seven) (D)
		77 to 84 points	8 (eight) (C)
		85 to 92 points	9 (nine) (B)
		93 to 100 points	10 (ten) (A)
21.	Method of monitoring the quality of teaching process	Report from the Self-evaluation committee and anonymous student survey	

22. Literature

22.1. Mandatory literature

No.	Author	Title	Publisher	Year
1.	Fossum Theresa W.	*Small animal surgery, 5th edition*	Elsevier	2018

		2.	Prof. Ksenija Ilievska Prof. Plamen Trojachanec	*General surgery (authorized lectures and practicals) updated every year*		
		3.				
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year
		1.	Johnston S.S..Tobias K.M.	*Veterinary surgery,2nd edition*	Elsevier	2017
		2.	Slatter Douglas	*Textbook of small animal surgery 2nd edtition*	Sounders	2002

No. 42

Attachement no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Internal Diseases in Farm Animals 1**			
2.	Code	VM2023-415			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Internal Diseases in Farm Animals			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Fourth (IV)	Semester	Seventh (VII)
7.	Course load expressed in ECTS credits	6.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Dine Mitrov, PhD Prof. Igor Dzadzovski, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course	For attending: Decision on Study Rules for first and second cycle integrated studies (undergraduate studies) and second cycle studies (postgraduate studies) at FVMS (UG 554, 26.07.2021). For passing: passed Animal Physiology 2, Pathophisiology 2, Special Veterinary			

		Pathology, Clinical and Laboratory Diagnostics in Farm Animals		
11.	Objectives of the course program (competencies) and learning outcomes	The objectives of the course is to provide **theoretical** and **practical** knowledge to students necessary for diagnosing and treatmen of disorders in farm animals. Students will learn how to **recognize and identify disorders** in individual organ systems (such as the respiratory, digestive, circulatory, and musculoskeletal systems) in **farm animals**, how to perform clinical examination and to have analytical approach in solving specific problems related to disorders of animal health in conditions of modern livestock production. After completing the course and passing the exam in this subject, students will be able to recognize and define the most important disease in farm animals. Students will be able to explain and apply appropriate diagnostic methods as well as procedures for systematic collection and analysis of data in order to establish an accurate diagnosis. They will also be trained to implement appropriate (etiological, supportive, symptomatic, etc.) therapy based on data analysis when establishing a diagnosis. Students will be able to assess the patient's condition before and after a given therapy, as well as provide a prognosis for the further course and outcome of the disease.		
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	Lectures includes: Introduction, diseases of the mouth, tongue, salivary glands, pharynx, teeth and esophagus. Diseases of the forestomach: Introduction, classification. Simple indigestion. Acid indigestion. Parakeratosis. Alkaline indigestion. Putrefaction of the rumen contents. Traumatic indigestion. Flatulence of the rumen. Paresis of the larynx. Indigestion resulting from damage to the vagus. Other diseases of the forestomach. Diseases of the rennet. Inflammation of the intestines. Winter dysentery. Diarrhea in newborn calves. Alimentary diarrhea in calves. Change in the position of the rennet. Intussusception of the intestine. Incarceration and strangulation of the intestine. Volvulus of the intestine. Dilatation and torsion of the cecum. Peritonitis. Liver diseases. Diseases of the pancreas.		
13.	Inter-connection with other subjects (courses)			
14.	Detailed description of teaching and working methods for the subject	Theoretical teaching: interactive (lectures in a large group with discussion and student engagement). Practical teaching: exercises and other forms of work in smaller groups. Project assignments: learning using professional literature and the Internet, preparing project papers (essay/poster); presentation and discussion of the same.		
15.	Total available time	150 hours Theory classes: 3 hours/per week (45 hours) Practicals: 3 hours/per week (45 hours)		
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	45
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours	45
		16.3.	Practice: total hours	
17.	Other forms of activities	17.1.	Project assignments: hours	
		17.2.	Individual tasks: hours	
		17.3.	Self-directed learning	60
18.	Conditions for receiving authorization			
19.	Assessment methods The student is obligated for active participation in all predicted activities for gaining points which are part of the final gaining. Continuous knowledge assessment: written Final colloquium - mandatory and taken on the farm			

Final exam: oral
Complete final exam: oral

Type of activity	Points	
	minimum	maximum
Attendance at theoretical lectures	12	15
Attendance at practical lectures	17	22
Project assignament /seminar paper (optional)	0	8
Continious knowledge assessment (two)	10 (x2)	20 (x2)
Final exam (on the farm)	5	5
Total		
	Grade / Points Six (6) / 18 Seven (7) / 25 Eight (8) / 32 Nine (9) / 40 Ten (10) / 50	

To get right to reach final exam, the student has to gain minimum 40 points from the attendance of theory classes and practicals and final pratical exam.
If the student does not gain required minimum on the first test, he/she could not attend the second one. Students who did not passed the tests reach directly on complete final exam (if they have right to it).
Continuous tests are an opportunity for the student to be assessed for his knowledge of the subject without the obligation to take a final exam.
The complete final exam has written and oral part, and depending on the grade mark gained, the student gets appropriate points.
Final colocvium is mandatory and it is performed practically on the farm
If the student is not satisfied with the points earned through continuous assessments, they may choose to cancel those points and to take the final exam, without using previous gained points form the wrriten tests. The final practical exam is mandatory and will take place on a farm.
If the student accumulates a minimum of 60 points from all assessment components, they are entitled to receive a grade in the index corresponding to their earned points, without the need to take an additional final exam.
Project activity or seminar paer is optional. The student may request a topic for a project or seminar work 30 days before the end of the semester and must submit it no later than 10 days before the scheduled exam date.

19.1.	Tests: points	
19.2.	Written essay/project assignment, oral or wrriten presentation: points	
19.3.	Final exam: points	

20.	Grading criteria (points/grade)	up to 59 points	5 (five) (F)
		60 to 68 points	6 (six) (E)
		69 to 76 points	7 (seven) (D)
		77 to 84 points	8 (eight) (C)
		85 to 92 points	9 (nine) (B)
		93 to 100 points	10 (ten) (A)
21.	Method of monitoring the quality of	Report from the Self-evaluation committee and	

	teaching process		anonymous student survey			
22.	Literature					
	22.1.	Mandatory literature				
		No.	Author	Title	Publisher	Year
		1.	Otto M. Radostits, Clive C. Gay, Kenneth W. Hinchcliff, Peter D. Constable	*Veterinary Medicine (10th edition)*	Saunders	2006
		2.	Dine Mitrov Igor Djadjovski	*Authorized lectures (presentations) Internal Diseases in Ruminants I*	Dine Mitrov Igor Djadjovski	2019-2024
		3.				
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year
		1.	Bradford P. Smith	*Large Animal Internal Medicine*	Williams & Wilkins	1998
		2.	Thomas J. Divers Simon F. Peek	*Rebhun's Diseases of Dairy Cattle*	Sounders Elsevier	2008
		3.	A.H. Andrews	*Bovine Medicine Diseases and Husbandry of Cattle*	Blackwell Science	2004

No. 43

Attachement no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Communication in Veterinary Practice**			
2.	Code	VM2023-416			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of rural economy, management and biostatistics			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Fourth (IV)	Semester	Seventh (VII)

7.	Course load expressed in ECTS credits	2.0		
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Blagica Sekovska, PhD Prof. Plamen Trojacanec, PhD		
9.	Teaching language	English		
10.	Necessary prerequisites for attending and passing the course	For attending: Decision on Study Rules for first and second cycle integrated studies (undergraduate studies) and second cycle studies (postgraduate studies) at FVMS (UG 554, 26.07.2021).		
11.	Objectives of the course program (competencies) and learning outcomes	According to EAEVE recommendation, soft skills is necessary for successfully veterinary practitioners, especially communication skills. From this reason, the aim of this subject is to improve communicational skills of further veterinary medicine doctors. After finishing the course, student should be able for successfully communication with clients, with basic communicational skills, professional and business communication and especially assertive communication.		
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	What is communication, meaning and role of communication Element in communicatin process Language and speech, verbal communication Another tipes of communication – nonverbal, paralinguistik, facial expresio, spatial expretion etc. Oral and written communication Problems during communication and their solving Active listening Current forms of communication – internet, mobil, e-mail etc. Official and business communication Medical communication Specifics of medico-veterinary communication Strategies for improvement of communicational skills Asertive communication Communicatin with tuff clients		
13.	Inter-connection with other subjects (courses)	Connected with Management of veterinary practice and all clinical subjects		
14.	Detailed description of teaching and working methods for the subject	Interactiv teoretical lectures, dramatization of situations, case study Theory classes: interactive (lectures with discussion and active participation of the students). Practicals: practicals with dramatization of situation, case study, presentation of some teaching units by the students, discussion about topics of interest and other ways of work in smaller groups		
15.	Total available time	50 hours Theory classes: 1 hour/per week (15 hours) Practicals: 1 hour/per week (15 hours)		
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	15
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours	15
		16.3.	Practice: total hours	
17.	Other forms of activities	17.1.	Project assignments: hours	10
		17.2.	Individual tasks: hours	
		17.3.	Self-directed learning	10
18.	Conditions for receiving authorization			

19.	Assessment methods				
	19.1.	Tests: points			40
	19.2.	Written essay/project assignment, oral or wrriten presentation: points			20
	19.3.	Final exam: points			40
20.	Grading criteria (points/grade)		up to 59 points		5 (five) (F)
			60 to 68 points		6 (six) (E)
			69 to 76 points		7 (seven) (D)
			77 to 84 points		8 (eight) (C)
			85 to 92 points		9 (nine) (B)
			93 to 100 points		10 (ten) (A)
21.	Method of monitoring the quality of teaching process		Report from the Self-evaluation committee and anonymous student survey		
22.	Literature				
	22.1.	Mandatory literature			
		No.	Author	Title	Publisher	Year
		1.	Blagica Sekovska	*Authorized lectures*		2020 till now
		2.	Laurel Lagoni, Dana Durance,	*Conecting with clientc*	AAHA Press	2012
		3.				
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year
		1.	Jane R. Shaw, Jason B. Coe	*Developing Communication Skills for Veterinary Practice 1st Edition*	Wiley-Blackwel	2024
		2.				
		3.				

No. 44

Attachement no. 3		**Integrated first and second cycle of studies**
1.	Program course title	**Internal Diseases of Small Animals and Equids 2**
2.	Code	VM2023-421
3.	Study program	Veterinary medicine
4.	Organizer of the study program (unit, i.e. institute, department,	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje

	section)	Department of Internal Diseases in Small Animals and Equides			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Fourth (IV)	Semester	Eight (VIII)
7.	Course load expressed in ECTS credits	6.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Assoc.prof. Elena Atanaskova Petrov, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course	For attending: Decision on Study Rules for first and second cycle integrated studies (undergraduate studies) and second cycle studies (postgraduate studies) at FVMS (UG 554, 26.07.2021) and received authorization for Internal diseases of Small Animals and Equids 1 For passing: passed Animal Physiology 2, Pathophisiology 2, Special Veterinary Pathology, Parasitology and Parasitic Diseases 2, General Pharmacology and Internal Diseases of Small Animals and Equids 1			
11.	Objectives of the course program (competencies) and learning outcomes	Objectives of the subject program (competencies): Diagnosis and treatment of diseases of the hepatobiliary system, diseases of the urinary system, endocrinological diseases, diseases of the nervous system and the most common oncological diseases in dogs and cats.			
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	Content of the subject program: Theoretical part: 1. Liver diseases. 2. Diseases of the biliary tract. 3. Kidney diseases 4. Diseases of the urinary tract, bladder and prostate. 5. Endocrinological diseases 1 part (hypophysis). 6. Endocrinological diseases part 2 (thyroid gland). 7. Endocrinological diseases, part 3 (parathyroid gland) 8. Endocrinological diseases part 4 (adrenal glands. 9. Endocrinological diseases part 5 (d.mellitus). 10. Neurological diseases 1 part. 11. Neurological diseases, part 2. 12. Inflammatory neurological diseases. 13. Diseases of the spinal cord. 14. Convulsions/seizures. 15. Oncological diseases in dogs and cats. Practical part: 1. Examination of patients with liver diseases, taking samples for analysis and interpretation of results. 2. Examination of patients, interpretation of clinical signs, sampling for analysis and interpretation of results. 3. Review of patients with renal failure, interpretation of clinical signs, sampling for analysis and interpretation of results. 4. Review of patients, interpretation of clinical signs, sampling for analysis and interpretation of results, reading of X-rays. 5-9. Review of patients with endocrinological diseases, interpretation of clinical signs, taking of samples for analysis and interpretation of results. 10. Symptomatology and diagnostics of neurological diseases (neurological examination). 11. Examination of patients, interpretation of clinical signs, taking of samples for analysis and interpretation of results. 12. Neurological examination of patients and interpretation of clinical signs. 13. Examination of patients, interpretation of			

		clinical signs, taking samples for analysis and interpretation of results. 14. Review of patients with seizures, interpretation of clinical signs, taking of samples for analysis and interpretation of results. 15. Examination of oncological patients, sampling for analysis and interpretation of results, following chemotherapy protocols.			
13.	Inter-connection with other subjects (courses)	Pathophysiology 1 and 2, Clinical and Laboratory Diagnostics in Companion Animals and Equines			
14.	Detailed description of teaching and working methods for the subject	Learning methods: Theoretical teaching: lectures to enrolled students, development of discussion and engagement of students by preparing presentations on specific topics. Practical teaching: exercises in groups of 4-5 students, working with patient cases, preparation of reports. Independent learning-tasks: learning using professional literature and the Internet, preparing a seminar paper; presentation and discussion of the seminar paper (optional).			
15.	Total available time	125 hours Theory classes: 2 hours/per week (30 hours) Practicals: 4 hours/per week (60 hours)			
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	30	
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours	60	
		16.3.	Practice: total hours		
17.	Other forms of activities	17.1.	Project assignments: hours	35	
		17.2.	Individual tasks: hours		
		17.3.	Self-directed learning		
18.	Conditions for receiving authorization	The student gets authorisation if he/she has a minimum attendance of 70% of theoretical lectures and practical lectures. The student is responsible for actively following all the planned activities with which he earns points. Continuous knowledge check (two). Final exam: written or oral Full final exam: written and oral part			
19.	Assessment methods				
	19.1.	Tests: points		20-40	
	19.2.	Written essay/project assignment, oral or wrriten presentation: points		0-5 (optional)	
	19.3.	Final exam: points		25-40	
20.	Grading criteria (points/grade)		up to 59 points	5 (five) (F)	
			60 to 68 points	6 (six) (E)	
			69 to 76 points	7 (seven) (D)	
			77 to 84 points	8 (eight) (C)	
			85 to 92 points	9 (nine) (B)	
			93 to 100 points	10 (ten) (A)	
21.	Method of monitoring the quality of teaching process	Report from the Self-evaluation committee and anonymous student survey			
22.	Literature				
	22.1.	Mandatory literature			
		No.	Author	Title	Publisher	Year

		1.	Ettinger, S.J., Feldman, E.C. and Cote, E.	*Textbook of Veterinary Internal Medicine7th edition.*	Elsevier health sciences	2010
		2.	Richard W. Nelson and C. Guillermo Couto	*Small animal internal medicine 5th edition*	Elsevier	2013
		3.				
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year
		1.	King, L.G. and Boag, A.	*BSAVA manual of canine and feline emergency and critical care (No. Ed. 3).*	British small animal veterinary association	2018
		2.				
		3.				

No. 45

Attachement no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Reproduction 2**			
2.	Code	VM2023-422			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of reproduction			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Fourth (IV)	Semester	Eight (VIII)
7.	Course load expressed in ECTS credits	7.5			
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Toni Dovenski, PhD Prof. Branko Atanasov, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course	For attending: Decision on Study Rules for first and second cycle integrated studies (undergraduate studies) and second cycle studies (postgraduate studies) at FVMS (UG 554, 26.07.2021) and recived authorization for Reproduction 1 For passing: passed Microbiology 2, Pathophysiology 2, Special			

		Veterinary Pathology, Clinical and Laboratory Diagnostics in Companion Animals and Equines and Clinical Diagnostics in Farm Animals and Reproduction 1.		
11.	Objectives of the course program (competencies) and learning outcomes	The objective of the course is to enable the students to gather knowledge of recognizing the indications for medical intervention of gynecological problems, infertility, pathological condition that occur during gestation; ability to give advice and application of appropriate treatment in the event of infertility; ability to undertake measures and interventions in order to improve the productive and reproductive status of an individual animal, as well as on a herd level. In addition, the students will be introduced with the basic obstetrical methods used during normal parturition as well as during dystocia, with the modern biotechnological technics of assisted reproduction, diseases of the mammary gland and neonatal diseases.		
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	Pathology of pregnancy. Pathology of parturition. Pathology of the puerperium. Obstetrics – examination of the dam before parturition, Preparation of the dam for parturition. Obstetric instruments and preparation of the obstetrician. Assisting during parturition. Reposition of malpositions of the fetus, assistance during dystocia. Methods of assistance, equipment and procedures for reposition of twisted uterus. Examination of the dam after parturition (in the puerperium). Care of the newborn. Basic gynecological operations. Neonatal diseases. Diseases of the mammary gland. Endocrinology and reproductive control - Introduction. Controlling the onset of puberty. Controlled estrus and ovulation. Control of seasonal breeding. Artificial insemination of domestic animals. Control of multiple births and litter size. Pregnancy control. Birth control. Control of the post-partum period. Embryo transfer. In vitro production of embryos. Cloning technology. Obtaining transgenic animals. Suppression of reproductive activity. Stress and reproduction. Lactation. Congenital infertility in cows. Acquired infertility in cows. Extragenital sterility. Infertility in sheep and goats. Infertility in sows. Infertility in mares. Infertility in carnivores. Infertility in the male animals.		
13.	Inter-connection with other subjects (courses)			
14.	Detailed description of teaching and working methods for the subject	Theoretical teaching: interactive lectures Practical teaching: field and laboratory practice and other forms of work and engagement in smaller groups (5-8 students) Seminar work: learning using professional literature and the Internet, preparation of a seminar work (essay/poster); presentation and discussion of the seminar work		
15.	Total available time	187.5 hours Theory classes: 4 hours/per week (60 hours) Practicals: 4 hours/per week (60 hours)		
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	60
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours	60
		16.3.	Practice: total hours	
17.	Other forms of activities	17.1.	Project assignments: hours	
		17.2.		

			Individual tasks: hours	
		17.3.	Self-directed learning	67.5
18.	Conditions for receiving authorization	To be eligible for the final exam in the subject *Reproduction 2*, the student must earn a minimum of 40 points from theoretical and practical classes, as well as continuous assessment, and must pass the practical exam. Additionally, the student must have passed *Reproduction 1*. If the student has not demonstrated sufficient knowledge through continuous assessment but has earned points through theoretical and practical classes, they have the right to repeat the continuous assessment		
19.	Assessment methods			
	19.1.	Tests: points		20
	19.2.	Written essay/project assignment, oral or wrriten presentation: points		10
	19.3.	Final exam: points		70
20.	Grading criteria (points/grade)		up to 59 points	5 (five) (F)
			60 to 68 points	6 (six) (E)
			69 to 76 points	7 (seven) (D)
			77 to 84 points	8 (eight) (C)
			85 to 92 points	9 (nine) (B)
			93 to 100 points	10 (ten) (A)
21.	Method of monitoring the quality of teaching process		Report from the Self-evaluation committee and anonymous student survey	

22. Literature

22.1. Mandatory literature

No.	Author	Title	Publisher	Year
1.	David E. Noakes Timothy J Parkinson Gary CW England	*Arturs veterinary reproduction and obstetrics*	Saunders	2001
2.		*Authorized lectures prepeared by the course teachers*		

22.2. Additional literature

No.	Author	Title	Publisher	Year
1.	Hafez E.S.E.	*Reproduction in Farm Animals, 6th Edition*	Lea & Febiger, Philadelphia	1993
2.				

		3.				

No. 46

Attachement no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Infectious Diseases in Domestic Animals 1**			
2.	Code	VM2023-423			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Infectious diseases and epidemiology			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Fourth (IV)	Semester	Eight (VIII)
7.	Course load expressed in ECTS credits	4.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Kiril Krstevski, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course	For attending: Decision on Study Rules for first and second cycle integrated studies (undergraduate studies) and second cycle studies (postgraduate studies) at FVMS (UG 554, 26.07.2021). For passing: passed Animal Physiology 2, Pathophisiology 2, Special Veterinary Pathology, Clinical and Laboratory Diagnostics in Farm Animals, and Internal Diseases in Farm Animals 1.			
11.	Objectives of the course program (competencies) and learning outcomes	The course program aims to familiarize students with the conditions for the emergence, spread, and control of infectious diseases, along with the procedures used for their diagnosis and prevention, as well as measures for their control and complete eradication. Upon completing this program, students will gain knowledge of the causes and sources of zoonotic diseases, as well as the principles of protection against these diseases during animal handling. Additionally, students will learn and understand the techniques and methods for diagnosing infectious diseases (epidemiological, clinical, and laboratory), and be able to assess their advantages and limitations. The ultimate goal of the course is to equip students with the ability to recognize potential outbreaks of infectious diseases and respond appropriately by taking samples for diagnosis and implementing effective prevention and control measures			

<table>
<tr><td>12.</td><td>Detailed course content by chapter and unit with learning outcomes for each chapter</td><td colspan="3">Theoretical teaching:
Infection and characteristics of microorganisms. Sources of infection and ways of spreading infectious diseases. Prophylaxis. Infectious diseases that occur in several animal species (anthrax, leptospirosis, pasteurellosis, listeriosis, tularemia, salmonellosis, Q fever, brucellosis, tuberculosis, campylobacteriosis, mycoplasmosis, infectious pleuropneumonia, clostridial infections: hissing, malignant edema, bradycardia, enterotoxemia, tetanus, botulism, rabies, Aujeszky's disease, foot-and-mouth disease, vesicular stomatitis, bluetongue disease, influenza, papillomatosis, leukemia).
Infectious diseases of horses (equine infectious anemia, equine plague, Rhodococcus equi infection, foal, malleus, melioidosis, West Nile fever, viral arteritis, American equine encephalomyelitis, Venezuelan equine encephalitis)

Practical teaching:
Auxiliary methods for the diagnosis of infectious diseases (epizootiological examination, clinical examination); serological methods (agglutination, complement fixation reaction, immunoenzyme reactions, precipitation, immunofluorescence); allergic methods (tuberculinization, maleinization); microbiological methods (cell cultures, isolation); biological experiments.</td></tr>
<tr><td>13.</td><td>Inter-connection with other subjects (courses)</td><td colspan="3"></td></tr>
<tr><td>14.</td><td>Detailed description of teaching and working methods for the subject</td><td colspan="3">Theoretical teaching: lectures, use of educational videos and software for interaction and encouraging discussion on subject topics.
Practical teaching: classroom, laboratory and field exercises in groups of up to 10 students.
Independent learning-assignments: preparation of a thematic seminar paper (essay/poster) using professional literature; presentation and discussion of the seminar paper (not mandatory).</td></tr>
<tr><td>15.</td><td>Total available time</td><td colspan="3">100 hours
Theory classes: 2 hours/per week (30 hours)
Practicals: 2 hours/per week (30 hours)</td></tr>
<tr><td rowspan="5">16.</td><td rowspan="5">Forms of teaching activities</td><td>16.1.</td><td>Theoretical lectures: hours</td><td>30</td></tr>
<tr><td>16.2.</td><td>Practical lectures (laboratory, auditorial), seminars, team work: hours</td><td>30</td></tr>
<tr><td>16.3.</td><td>Practice: total hours</td><td></td></tr>
<tr><td rowspan="3">17.</td><td rowspan="3">Other forms of activities</td><td>17.1.</td><td>Project assignments: hours</td><td></td></tr>
<tr><td>17.2.</td><td>Individual tasks: hours</td><td></td></tr>
<tr><td>17.3.</td><td>Self-directed learning</td><td>40</td></tr>
<tr><td>18.</td><td>Conditions for receiving authorization</td><td colspan="3"></td></tr>
<tr><td>19.</td><td colspan="4">Assessment methods
The assessment elements are: 1. Lecture attendance; 2. Practical attendance; 3. Practical activity; 4. Continuous assessment of knowledge and 5. Final exam. The minimum and maximum number of points for each of the assessment elements are given in the table below.

<table>
<tr><th rowspan="2">Type of activity</th><th colspan="2">Points</th></tr>
<tr><th>minimum</th><th>maximum</th></tr>
<tr><td>Attendance at theoretical lectures</td><td>4</td><td>8</td></tr>
<tr><td>Attendance at practical lectures</td><td>10</td><td>12</td></tr>
</table></td></tr>
</table>

		Activity from the practical lectures			4	8
		Wrriten (continuous) test			20	32
		Final exam			22	40
		Total			60	100

The activity of practical classes is monitored by continuous oral monitoring of the readiness for the subject topic during the semester. The oral examination is conducted without notice and questions that, depending on the complexity, carry 4 or 8 points. Students with outstanding activity during practical classes can earn 4 points (which replace one oral examination during practical classes).
Continuous examination and the final exam are realized in writing or orally. During classes, 1 continuous examination with 8 questions is organized, in which the student must earn at least 20 out of the maximum 32 points. Students who do not earn the minimum points have the right to a corrective continuous examination, but no more than 3 times in the year in which they are taking the course.
In order to proceed to take the final exam, the student must earn a minimum of points from each assessment element, or at least 38 points. Regardless of the number of points earned from the previous four assessment elements, the student must demonstrate sufficient knowledge and earn a minimum of 22 points on the final exam.

	19.1.	Tests: points	
	19.2.	Written essay/project assignment, oral or wrriten presentation: points	
	19.3.	Final exam: points	

20.	Grading criteria (points/grade)	up to 59 points	5 (five) (F)
		60 to 68 points	6 (six) (E)
		69 to 76 points	7 (seven) (D)
		77 to 84 points	8 (eight) (C)
		85 to 92 points	9 (nine) (B)
		93 to 100 points	10 (ten) (A)
21.	Method of monitoring the quality of teaching process	Report from the Self-evaluation committee and anonymous student survey	

22. Literature

22.1. Mandatory literature

No.	Author	Title	Publisher	Year

		1.	Constable P., K. W. Hinchcliff, S. Done, W. Gruenberg	*Veterinary Medicine, A Textbook of the Diseases of Cattle, Horses, Sheep, Pigs and Goats, 11th Ed*	W. B. Saunders Ltd	2016
		2.	M.A.S. Moreira, A. Silva Júnior, M. C. Lima, S.L. da Costa	*Chapter 11- Infectious Diseases in Dairy Cattle*	Academic Press	2018
		3.	D. C. Sellon, M. T. Long (Editors)	*Equine Infectious Diseases*	Elsevier Saunders	2014
		4.	Pugh, D. G., N. Baird	*Sheep and Goat Medicine*	Elsevier Saunders	2012
		5.	W.J Smith, D.J. Taylor, R.H.C. Penny	*A Colour Atlas of Diseases and Disorders of the Pig*		
		6.	Greene, C. G.	*Infectious Diseases of the Dog and Cat, 4th Ed*	Elsevier Saunders	2012
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year
		1.	Various authros	*Disease Control Tools,*	*available at https://www.discontools.eu/*	
		2.		*The Center for Food Security and Public Health Iowa (Various authors)*	Available at: Animal Disease Resources - CFSPH	
		3.	Merck (various authors)	*Merck Veterinary Manual,*	*available at* Merck Veterinary Manual	

No. 47

Attachement no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Internal Diseases in Farm Animals 2**			
2.	Code	VM2023-424			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Internal Diseases in Farm Animals			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Fourth (IV)	Semester	Eight (VIII)
7.	Course load expressed in ECTS credits	5.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Dine Mitrov, PhD Prof. Igor Dzadzovski, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course	For attending: Decision on Study Rules for first and second cycle integrated studies (undergraduate studies) and second cycle studies (postgraduate studies) at FVMS (UG 554, 26.07.2021) and recived authorization for Diseases in farm animals 1 For passing: Passed Microbiology 2, Pathophysiology 2, Veterinay Special Pathology, Clinical and Laboratory Diagnostics in Farm Animals and Internal Diseases in Farm Animals 1.			
11.	Objectives of the course program (competencies) and learning outcomes	The objectives of the course is to provide **theoretical** and **practical** knowledge to students necessary for diagnosing and treatmen of disorders in farm animals. Students will learn how to **recognize and identify disorders** in individual organ systems (such as the respiratory, digestive, circulatory, and musculoskeletal systems) in **farm animals**, how to perform clinical examination and to have analytical approach in solving specific problems related to disorders of animal health in conditions of modern livestock production. After completing the course and passing the exam in this subject, students will be able to recognize and define the most important disease in farm animals. Students will be able to explain and apply appropriate diagnostic methods as well as procedures for systematic collection and analysis of data in order to establish an accurate diagnosis. They will also be trained to implement appropriate (etiological, supportive, symptomatic, etc.) therapy based on data analysis when establishing a diagnosis. Students will be able to assess the patient's condition before and after a			

		given therapy, as well as provide a prognosis for the further course and outcome of the disease.		
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	Diseases of the respiratory organs: nose, sinuses, larynx. Congestion and edema of the lungs. Pneumonia (bronchopneumonia, gangrenous, purulent, embolic and mycotic pneumonia). Enzootic pneumonia in calves. Viral pneumonia in calves and bulls. Diseases of the cardiovascular system in ruminants. Diseases of the urinary system - nephrosis, amyloidosis of the kidneys, nephritis (acute, chronic, purulent), bacterial pyelonephritis. Cystitis, paralysis of the bladder, chronic vesicular hematuria, urolithiasis. Diseases of the blood and hematopoietic organs. Hemorrhagic diathesis. Diseases of the spleen. Diseases of the CNS. Metabolic disorders (metabolic osteopathy, rickets and osteomalacia). Ketosis. Puerperal paresis. Atypical puerperal paresis. Tetany. Deficiency of trace elements, rickets, osteomalacia. Allotriophagy. Hypovitaminosis and avitaminosis. Disturbance of energy metabolism. Diseases of the musculoskeletal system. Skin diseases. General information about poisoning. Poisoning with copper, zinc, mercury, lead and molybdenum. Poisoning with arsenic, selenium, caustic bases, table salt. Poisoning with urea, phosphorus, sulfur, chlorine, chlorinated hydrocarbons. Poisoning with plant poisons. Mycotoxicoses. Botulism. Poisoning with animal poisons.		
13.	Inter-connection with other subjects (courses)			
14.	Detailed description of teaching and working methods for the subject	Theoretical teaching: interactive (lectures in a large group with discussion and student engagement). Practical teaching: exercises and other forms of work in smaller groups. Project tasks: learning using professional literature and the Internet, preparing project papers (essay/poster); presentation and discussion.		
15.	Total available time	125 hours Theory classes: 2 hours/per week (30 hours) Practicals: 3 hours/per week (45 hours)		
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	30
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours	45
		16.3.	Practice: total hours	
17.	Other forms of activities	17.1.	Project assignments: hours	
		17.2.	Individual tasks: hours	
		17.3.	Self-directed learning	50
18.	Conditions for receiving authorization			
19.	Assessment methods The student is obligated for active participation in all predicted activities for gaining points which are part of the final gaining. Continuous knowledge assessment: written Final colloquium - mandatory and taken on the farm Final exam: oral Complete final exam: oral			

Type of activity	Points

	minimum	maximum
Attendance at theoretical lectures	12	15
Attendance at practical lectures	17	22
Project assignament /seminar paper (optional)	0	8
Continious knowledge assessment (two)	10 (x2)	20 (x2)
Final exam (on the farm)	5	5
Total		
	Grade / Points Six (6) / 18 Seven (7) / 25 Eight (8) / 32 Nine (9) / 40 Ten (10) / 50	

To get right to reach final exam, the student has to gain minimum 40 points from the attendance of theory classes and practicals and final pratical exam.
If the student does not gain required minimum on the first test, he/she could not attend the second one. Students who did not passed the tests reach directly on complete final exam (if they have right to it).
Continuous tests are an opportunity for the student to be assessed for his knowledge of the subject without the obligation to take a final exam.
The complete final exam has written and oral part, and depending on the grade mark gained, the student gets appropriate points.
Final colocvium is mandatory and it is performed practically on the farm
If the student is not satisfied with the points earned through continuous assessments, they may choose to cancel those points and to take the final exam, without using previous gained points form the wrriten tests. The final practical exam is mandatory and will take place on a farm.
If the student accumulates a minimum of 60 points from all assessment components, they are entitled to receive a grade in the index corresponding to their earned points, without the need to take an additional final exam.
Project activity or seminar paer is optional. The student may request a topic for a project or seminar work 30 days before the end of the semester and must submit it no later than 10 days before the scheduled exam date.

19.1.	Tests: points	
19.2.	Written essay/project assignment, oral or wrriten presentation: points	
19.3.	Final exam: points	

20.	Grading criteria (points/grade)	up to 59 points	5 (five) (F)
		60 to 68 points	6 (six) (E)
		69 to 76 points	7 (seven) (D)
		77 to 84 points	8 (eight) (C)
		85 to 92 points	9 (nine) (B)
		93 to 100 points	10 (ten) (A)
21.	Method of monitoring the quality of teaching process	Report from the Self-evaluation committee and anonymous student survey	
22.	Literature		
	22.1.	Mandatory literature	

		No.	Author	Title	Publisher	Year
		1.	Otto M. Radostits, Clive C. Gay, Kenneth W. Hinchcliff, Peter D. Constable	*Veterinary Medicine (10th edition)*	Saunders	2006
		2.	Dine Mitrov Igor Djadjovski	*Authorized lectures (presentations) Internal Diseases in Ruminants I*	Dine Mitrov Igor Djadjovski	2019-2024
		3.				
		4.				
		5.				
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year
		1.	D.G. Pugh	*Sheep and Goat Medicine*	Blackwell Science	2004
		2.	I.D. Aitken	*Diseases of Sheep (Fourth Edition)*	Blackwell Publishing	2007
		3.	Mary C. Smith, David M. Sherman,	*Goat Medicine (Second Edition)*	Wiley-Blackwell	2009
		4.	J.C. Hindson, Agnes C. Winter	*Manual of Sheep Diseases (Second Edition)*	Blackwell Science Ltd	2002

No. 48

Attachement no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Soft Tissue Surgery**			
2.	Code	VM2023-425			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Surgery, Orthopedics and Opthamology			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Fourth (IV)	Semester	Eight (VIII)

7.	Course load expressed in ECTS credits	3.5
8.	Teacher (leading teacher, in case of multiple teacher)	Prof Pleman Trojachanec, PhD Prof. Ksenija Ilievska, PhD
9.	Teaching language	English
10.	Necessary prerequisites for attending and passing the course	For attending: Decision on Study Rules for first and second cycle integrated studies (undergraduate studies) and second cycle studies (postgraduate studies) at FVMS (UG 554, 26.07.2021) and recived authorisartion for Anesthesia with intensive care and General surgery For passing: passed Special Veterinary Pathology, Anesthesia and Intensive Care and General Surgery
11.	Objectives of the course program (competencies) and learning outcomes	The course is designed to encourage students to apply the knowledge gained from diagnostic and therapeutic disciplines related to surgical diseases of companion, farm animals and equines. Students are trained to work independently in everyday practice with domestic animals and other species. This training is based on previously acquired knowledge in practical work with animals and animal models. Students will perform independent examinations, diagnoses, and common surgical interventions on animals, focusing on soft tissue procedures by body regions. They will also assist in the surgical team or independently perform simple surgeries such as suturing, wound treatment, castration, ovariohysterectomy, and laparotomy, under the supervision of a mentor (professor). Additionally, students will learn to implement appropriate postoperative care and provide prognosis for the final outcome. The course emphasizes the development of skills for humane and responsible behavior with patients during handling and taming, fostering effective communication and relationships with both animal owners and colleagues. This course is closely linked to all preclinical subjects, particularly anatomy, animal physiology, clinical anatomy, clinical and laboratory diagnostics of domestic and farm animals, Basic Pathology, and special pathological morphology.
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	Theoretical teaching: Surgery of companion, farm animals and equines: Surgery of the respiratory system. Gastrointestinal surgery. Surgical treatment of colic in horses. Surgery of the perineum, rectum and anus. Surgical diseases of the endocrine and hematopoietic organs. General orthopedic principles. Urogenital surgery. Surgery of farm animals: Basic principles of surgery of farm animals. Surgery of the head and neck. Abdominal surgery. Urogenital surgery. Mammary gland surgery. Practical teaching: Companion animals and equines: Overview and techniques of performing surgical procedures on the head. Overview and techniques of performing surgical procedures on the gastrointestinal system. Surgical procedures on the urinary system. Surgical procedures on the reproductive system. Farm animals: Approach and fixation of animals. Surgical procedures on the head. Surgical procedures on the gastrointestinal system. Surgical procedures on the urogenital system. Surgical procedures on the mammary gland. During the course, students are required to work also in the skills' lab.
13.	Inter-connection with other subjects (courses)	
14.	Detailed description of teaching and working methods for the subject	This course introduces students to the techniques for performing surgical procedures on individual organ systems through interactive teaching. The learning process includes theoretical presentations, discussions, and seminar

<table>
<tr><td></td><td></td><td colspan="3">preparations that promote independent work, both individually and in groups.

Practical Teaching: Practical teaching involves hands-on experience with surgical patients in smaller groups. This will allow students to master the techniques of surgical treatment, including postoperative care, anesthesia, and analgesia for surgical patients. Students will also gain experience in providing intensive care and monitoring critical patients.

Seminar Paper (Optional): As part of the optional seminar work, students will engage in independent learning using professional literature and online resources. This will culminate in the preparation of a seminar paper, which may be presented as an essay or poster.</td></tr>
<tr><td>15.</td><td>Total available time</td><td colspan="3">87.5 hours
Theory classes: 2 hours/per week (30 hours)
Practicals: 3 hours/per week (45 hours)</td></tr>
<tr><td rowspan="5">16.</td><td rowspan="5">Forms of teaching activities</td><td>16.1.</td><td>Theoretical lectures: hours</td><td>30</td></tr>
<tr><td>16.2.</td><td>Practical lectures (laboratory, auditorial), seminars, team work: hours</td><td>45</td></tr>
<tr><td>16.3.</td><td>Practice: total hours</td><td></td></tr>
<tr><td rowspan="2">17.</td><td rowspan="2">Other forms of activities</td><td>17.1.</td><td>Project assignments: hours</td><td></td></tr>
<tr><td>17.2.</td><td>Individual tasks: hours</td><td></td></tr>
<tr><td>17.3.</td><td>Self-directed learning</td><td>12.5</td></tr>
<tr><td>18.</td><td>Conditions for receiving authorization</td><td colspan="3">Students who attend less than 30% of the theoretical classes do not receive attendance points and signature; attendance at 30-60% of the classes carries 3 points, while attendance at more than 60% of the classes carries 5 points. Students who attend less than 40% of the practical classes do not receive attendance points; attendance at 40-70% of the classes carries 6 points, while attendance at more than 70% of the classes carries 10 points.
In order to receive a final grade or to proceed to take the final exam, the student must have passed Anesthesiology with Intensive Care and General Surgery.</td></tr>
<tr><td>19.</td><td colspan="4">Assessment methods

Students are required to actively engage in all planned activities that contribute to the final assessment. To calculate the points, the grade received is multiplied by the percentage of its contribution to the final grade, then multiplied by 10. This gives the total points from each individual part of the exam. The final grade is the sum of points from the oral/written exam, with the points earned from class attendance added.

Final Exam: Students who do not receive a passing grade in both exams or who are dissatisfied with the results of the partial exams have the option to take a final exam. In this case, the points from the partial exams will not be included in the final grade calculation. Exams are scheduled at specific times and can be retaken up to two additional times. After these attempts, the student must re-enroll in the subject. Further exam dates will be announced at the beginning of each exam session.

<table>
<tr><th rowspan="2">Type of activity</th><th colspan="2">Points</th></tr>
<tr><th>minimum</th><th>maximum</th></tr>
<tr><td>Attendance at theoretical lectures</td><td>3</td><td>5</td></tr>
</table>
</td></tr>
</table>

		Attendance at practical lectures	6	10
		Oral or wrriten exam – companion animals	30	50
		Oral or wrriten exam – farm animals	21	35
		Project assignament (optional)	0	5
		Total	60	100

Students who attend less than 30% of the theoretical classes do not receive attendance points or signature; attendance I between 30-60% of the classes carries 3 points, while attendance at more than 60% of the classes carries 5 points. Students who attend less than 40% of the practical classes do not receive attendance points; attendance at 40-70% of the classes carries 6 points, while attendance at more than 70% of the classes carries 10 points. In order to receive a final grade or to proceed to take the final exam, the student must have passed Anesthesia with Intensive Care, General Surgery

19.1.	Tests: points	
19.2.	Written essay/project assignment, oral or wrriten presentation: points	
19.3.	Final exam: points	

20.	Grading criteria (points/grade)	up to 59 points	5 (five) (F)
		60 to 68 points	6 (six) (E)
		69 to 76 points	7 (seven) (D)
		77 to 84 points	8 (eight) (C)
		85 to 92 points	9 (nine) (B)
		93 to 100 points	10 (ten) (A)
21.	Method of monitoring the quality of teaching process	Report from the Self-evaluation committee and anonymous student survey	

22. Literature

22.1. Mandatory literature

No.	Author	Title	Publisher	Year
1.	Risselada Marije	*Atlas of Surgical approaches to Soft Tissue and Oncologic disease in Dog and Cat*	Wiley Blackwell	2020
2.	Prof. Ksenija Ilievska Prof. Plamen Trojachanec	*General surgery (authorized lectures and practicals) updated every year*		
3.	Michael M. Pavletic	*Small Animal Wound Management and Reconstructive Surgery*	Wiley Blackwell	2018

22.2. Additional literature

		No.	Author	Title	Publisher	Year
		1.	Fossum Theresa W.	*Small animal surgery, 5th edition*	Elsevier	2018
		2.	Johnston S.S.. Tobias K.M.	*Veterinary surgery, 2nd edition*	Elsevier	2017
		3.	Yool Donald A.	*Small Animal Soft Tissue Surgery*	Cabi	2012

No. 49

Attachement no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Swine Diseases**			
2.	Code	VM2023-426			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Fourth (IV)	Semester	Eight (VIII)
7.	Course load expressed in ECTS credits	3.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Assoc. Prof. Branko Angjelovski, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course	For attending: Decision on Study Rules for first and second cycle integrated studies (undergraduate studies) and second cycle studies (postgraduate studies) at FVMS (UG 554, 26.07.2021). For passing: passed Microbiology 2, Pathophysiology 2, Special Veterinary Pathology, Clinical and Laboratory Diagnostics in Farm Animals			
11.	Objectives of the course program (competencies) and learning outcomes	Acquiring theoretical and practical knowledge in diagnostics, pathology, prophylaxis and therapy of diseases of pigs. Mastering the skills and techniques needed to recognize and solve problems in the pathology of pig farms. An independent approach in solving problems in terms of health protection of pigs. Students will be able to give an appropriate assessment regarding the health condition of the pig farm by giving a professional report. Proper application of biosecurity in pig farms. Students will gain knowledge through analytical approach and interpretation of laboratory results at the occurrence of a particular health problem in a pig farm where they can give expert opinion on resolving			

		to the specific health problem.		
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	**Theoretical teaching:** Examination and assessment of a farm. Diseases of the digestive system: diseases of the mouth, swallow. obstruction of esophagus. Stomach ulcer. Colibacilosis in piglets. Edema disease. Infectious gastroenteritis. Epidemic diarrhea in piglets. Necrotic enteritis. Dysentery. Change the position of the intestines. Liver diseases. Diseases of the respiratory organs: atrophic rhinitis, mycoplasmatic pneumonia, pleuropneumonia, pleuritis, Reproductive and respiratory syndrome in pigs (PRRS), influenza in pigs. Diseases of the circulatory system: heart failures, heart attack (heart drop). Diseases of the urinary system: nephritis, pyelonephritis, cystitis, urolithiasis. Diseases of the blood and hematopoetic organs: anemia, hemoglobinemia, hemoglobinuria. CNS diseases: sunstroke and heat stroke. Meningitis. Encephalitis. Paresis and paralysis. Otitis interna. Disorders of the metabolism of macro- and micro- elements. Hypo and avitaminosis. Ketosis. Hypoglycaemia. Diseases of the locomotor system: rheumatism, myopathies, apophysiolysis and epiphysiolysis, ankyloses, stress syndrome, Inflammation of the joints. Skin diseases: excem, exudative epidermitis, parakeratosis, dermatitis. Exanthem. Dermatomycosis. Infectious diseases in pigs. Pathology of the mammary gland. Basic biosecurity measures in commercial pig farms. **Practical teaching** Fixation and sampling of different categories of pigs for laboratory examination. Health control of the sows and newborn piglets. Control of the health status in weaned piglets. Getting to know basics of implementing of biosecurity measures in pig farms. Health control of growing and finishing pigs. Control of the health condition of the breeding animals.		
13.	Inter-connection with other subjects (courses)	Infectious Diseases in Domestic Animals 1 and 2, Veterinary Parasitology and Parasitic Deiseases 1 and 2, Microbiology 1 and 2, General and Special Veterinary Pathology, Pathophy, Cllinical and Laboratory Diagnstics in Farm Animals		
14.	Detailed description of teaching and working methods for the subject	**Theoretical teaching**: interactive (group lectures with discussion and engagement of students). **Practical teaching**: Exercises and other forms of work in smaller groups. Visit to a farm and review health condition. **Project Activity**: Learning using professional literature and internet, preparing seminar paper (essay/poster); Presentation and discussion of the project assignment.		
15.	Total available time	75 hours Theory classes: 2 hours/per week (30 hours) Practicals: 2 hours/per week (30 hours)		
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	30
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours	30
		16.3.	Practice: total hours	
17.	Other forms of activities	17.1.	Project assignments: hours	
		17.2.	Individual tasks: hours	
		17.3.	Self-directed learning	15
18.	Conditions for receiving	To access the student to a final exam, required is to have passed all		

	authorization	provided courses in sixth semester.			
19.	Assessment methods				
	19.1.	Tests: points			Yes
	19.2.	Written essay/project assignment, oral or wrriten presentation: points			Yes
	19.3.	Final exam: points			Yes
20.	Grading criteria (points/grade)		up to 59 points		5 (five) (F)
			60 to 68 points		6 (six) (E)
			69 to 76 points		7 (seven) (D)
			77 to 84 points		8 (eight) (C)
			85 to 92 points		9 (nine) (B)
			93 to 100 points		10 (ten) (A)
21.	Method of monitoring the quality of teaching process		Report from the Self-evaluation committee and anonymous student survey		
22.	Literature				
	22.1.	Mandatory literature			
		No.	Author	Title	Publisher	Year
		1.	Zimmerman, J.J., Karriker, A.L., Ramirez, A., Schwartz, J.K., Stevenson, J Zhang	*Diseases of Swine 11th Edition*	Wiley-Blackwell	2019
		2.	Straw, B.E., Zimmerman, J.J., D'Allaire, S., Taylor, D.J.	*Diseases of Swine 9th Edition*	Blackwell, Publishing	2006
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year
		1.	Jackson G.G Peter, Cockcroft D Peter	*Handbook of Pig medicine*	Elsevier	2007
		2.	https://www.thepigsite.com/disease-and-welfare-2			
		3.	https://www.aasv.org/swine-diseases/			
		4.	https://www.pig333.com/health/			

No. 50

Attachement no. 3		**Integrated first and second cycle of studies**
1.	Program course title	**Orthopedics and Rehabilitaton**
2.	Code	VM2023-511
3.	Study program	Veterinary medicine

4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Surgery, Orthopedics and Opthalmology			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Fifth (V)	Semester	Ninth (IX)
7.	Course load expressed in ECTS credits	3.5			
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Plamen Trojachanec, PhD Prof. Ksenija Ilievska, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course	For attending: Decision on Study Rules for first and second cycle integrated studies (undergraduate studies) and second cycle studies (postgraduate studies) at FVMS (UG 554, 26.07.2021) and recived authorization for General surgery with orthopedics, Anestesiology with intensive care and Soft tissue surgery For passing: passed Special Veterinary Pathology, General Surgery, Anesthesia and Intensive care and Soft Tissue Surgery			
11.	Objectives of the course program (competencies) and learning outcomes	This course is designed to encourage students to apply their knowledge of anatomy, as well as diagnostic and therapeutic principles related to surgical diseases in pets, farm animals, and equines, further deepening the skills and knowledge acquired in previous semesters. **Practical Training:** The student will be trained for independent work in everyday practice with pets and other animal species by applying previously acquired knowledge through hands-on experience with animals and animal models. Upon mastering the proposed knowledge and techniques, the student will be equipped to recognize surgical diseases of the locomotor system in pets, ungulates, and farm animals. This includes understanding general orthopedic principles, providing first aid, and immobilizing fractures with recommendations for further treatment. **:**In addition, students will learn to implement appropriate postoperative care and provide accurate prognosis for the final outcome. The course will also focus on developing skills for humane and responsible handling of patients, fostering effective communication and relationships with both animal owners and colleagues.			
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	Introduction to the techniques for performing orthopedic examinations and surgical interventions on the locomotor system in pets, equines and farm animals, through interactive teaching based on theoretical presentation of the material, discussions that encourage independent work of students individually or in groups. Practical teaching consists of practical work in smaller groups of surgical patients, which will enable mastering the techniques of surgical treatment with postoperative care, anesthesia and analgesia of surgical patients, care and monitoring of critical patients. Seminar paper (optional): learning using professional literature and the Internet, preparation of a seminar paper (essay/poster).			
13.	Inter-connection with other subjects (courses)				

<table>
<tr><td>14.</td><td>Detailed description of teaching and working methods for the subject</td><td colspan="3">This course introduces students to the techniques for performing orthopedic examinations and surgical interventions on the locomotor system of pets, equines, and farm animals. The course uses interactive teaching methods, including theoretical presentations and discussions, which encourage independent work by students individually or in groups.
Practical Training: Practical teaching involves working in small groups with surgical patients, providing students the opportunity to master surgical techniques, including postoperative care, anesthesia, and analgesia for surgical patients. Students will also gain experience in caring for and monitoring critical patients.
Seminar Paper (Optional): Students will engage in independent learning using professional literature and online resources, culminating in the preparation of a seminar paper, which can be presented as either an essay or a poster.</td></tr>
<tr><td>15.</td><td>Total available time</td><td colspan="3">87. hours
Theory classes: 2 hours/per week (30 hours)
Practicals: 3 hours/per week (45 hours)</td></tr>
<tr><td rowspan="3">16.</td><td rowspan="3">Forms of teaching activities</td><td>16.1.</td><td>Theoretical lectures: hours</td><td>30</td></tr>
<tr><td>16.2.</td><td>Practical lectures (laboratory, auditorial), seminars, team work: hours</td><td>45</td></tr>
<tr><td>16.3.</td><td>Practice: total hours</td><td></td></tr>
<tr><td rowspan="3">17.</td><td rowspan="3">Other forms of activities</td><td>17.1.</td><td>Project assignments: hours</td><td></td></tr>
<tr><td>17.2.</td><td>Individual tasks: hours</td><td></td></tr>
<tr><td>17.3.</td><td>Self-directed learning</td><td>12.5</td></tr>
<tr><td>18.</td><td>Conditions for receiving authorization</td><td colspan="3"></td></tr>
<tr><td>19.</td><td colspan="4">Assessment methods

Students are required to actively engage in all planned activities that contribute to the final assessment. To calculate the points, the grade received is multiplied by the percentage of its contribution to the final grade, then multiplied by 10. This gives the total points from each individual part of the exam. The final grade is the sum of points from the oral/written exam, with the points earned from class attendance added.

Final Exam: Students who do not receive a passing grade in both exams or who are dissatisfied with the results of the partial exams have the option to take a final exam. In this case, the points from the partial exams will not be included in the final grade calculation. Exams are scheduled at specific times and can be retaken up to two additional times. After these attempts, the student must re-enroll in the subject. Further exam dates will be announced at the beginning of each exam session.</td></tr>
</table>

Type of activity	Points	
	minimum	maximum
Attendance at theoretical lectures	3	5
Attendance at practical lectures	6	10
Oral or wrriten exam – companion animals	30	50
Oral or wrriten exam – farm animals	21	35
Project assignament (optional)	0	5

		Total	60	100

Students who attend less than 30% of the theoretical classes do not receive attendance points or signature; attendance I between 30-60% of the classes carries 3 points, while attendance at more than 60% of the classes carries 5 points. Students who attend less than 40% of the practical classes do not receive attendance points; attendance at 40-70% of the classes carries 6 points, while attendance at more than 70% of the classes carries 10 points. In order to receive a final grade or to proceed to take the final exam, the student must have passed Anesthesia and Intensive Care, General Surgery, and Soft Tissue Surgery.

19.1.	Tests: points	
19.2.	Written essay/project assignment, oral or wrriten presentation: points	
19.3.	Final exam: points	

20.	Grading criteria (points/grade)	up to 59 points	5 (five) (F)
		60 to 68 points	6 (six) (E)
		69 to 76 points	7 (seven) (D)
		77 to 84 points	8 (eight) (C)
		85 to 92 points	9 (nine) (B)
		93 to 100 points	10 (ten) (A)
21.	Method of monitoring the quality of teaching process	Report from the Self-evaluation committee and anonymous student survey	

22. Literature

22.1. Mandatory literature

No.	Author	Title	Publisher	Year
1.	Prof. Plamen Trojachanec Prof. Ksenija Ilievska	*Smal and large animal orthopedic surgery (authorized lectures and practicals) updated every year*		
2.	Johnston S.S..Tobias K.M.	*Veterinary surgery, 2nd edition*	Elsevier	2017
3.	Johnson Ann L.,Houlton John E.F., Vannini Ricco	*AO Principles in the Fracture management in the Dog an Cat*	Thieme	2005
4.	Weawer, St Jean,Steiner	*Bovine surgery and lameness, 2nd edition*	Blackwell	2005

22.2. Additional literature

No.	Author	Title	Publisher	Year
1.	Fossum TheresaW.	*Small animal surgery,5th edition*	Elsevier	2018

		2.	DeCamp Charles E.	*Brinker, Piermattei and Flo's Handbook of Small Animal Orthopedics and Fracture, 5th Edition*	Elsevier	2015
		3.	Lindley S., Watson P.	*BSAVA Manual of Canine and Feline Rehabilitation, Supportive and Palliative*	BSAVA	2010
		4.	Amnes N.K.	*Noorsdy's Food Animal Surgery*	John Wiley and Sons Inc.	2013
		5.	Auer J.A., Stick J.A.	*Equine Surgery, 4th edition*	ELSEVIER Saunders, St. Lois	2012
		6.	Slatter Douglas	*Textbook of small animal surgery 2nd edtition*	Saunders	2002
		7.		*Hoof disease – illustrated atlas*	ICAR	2015

No. 51

Attachement no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Meat Hygiene and Technology**			
2.	Code	VM2023-512			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Food safety and Veterinary Public Health			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	V (Fifth)	Semester	Ninth (IX)
7.	Course load expressed in ECTS credits	4.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Pavle Sekulovski, PhD Prof. Dean Jankuloski, PhD Prof. Sandra Mojsova, PhD Prof. Mirko Prodanov, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course	For attending: Decision on Study Rules for first and second cycle integrated studies (undergraduate studies) and second cycle studies (postgraduate studies) at FVMS (UG 554, 26.07.2021).			

		For passing: passed Internal Diseases in Farm Animals 2, Infectious Diseases in Domestic Animals 1, Special Veterinary Pathology		
11.	Objectives of the course program (competencies) and learning outcomes	Supervising the treatment of animals in transport and slaughterhouses from the point of view of animal welfare and meat quality; Carrying out ante-mortem inspections of animals intended for the food chain, including aspects of animal welfare; Supervision and control of the slaughter handling of animals and the hygiene of slaughter, with particular regard to the welfare of stuning and bleeding; Examination of meat and organs (post-mortem) of the slaughterhouse processing line, assessment for the food chain; Sampling for laboratory analysis from animals at the slaughterhouse; tagging, record-keeping, and reporting on veterinary and sanitary monitoring in meat production and trade; Categorization and classification of meat on the slaughter line; marking the meat and organs of slaughtered animals		
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	Introduction to the subject. Animals and birds as sources of meat. Facilities for the slaughter of animals and meat production. From farms to slaughterhouses (slaughterhouse phase). Premortem inspection. Slaughter and processing. Postmortem inspection. Assessment of the usability of meat and organs from slaughtered animals to the food chain. Categorization and classification of meat on the slaughter line. Marking the meat and organs of slaughtered animals.		
13.	Inter-connection with other subjects (courses)	Internal Diseases in Farm Animals 1, Infectious Diseases in Domestic Animals 1		
14.	Detailed description of teaching and working methods for the subject	Theoretical instruction: interactive (large-group lectures with discussion and student engagement). Practical instruction: field and laboratory exercises and other forms of small-group work. Term paper: learning using professional literature and the Internet, drafting a term paper (essay/poster); Presentation and discussion of the seminar paper.		
15.	Total available time	100 hours Theory classes: 2 hours/per week (30 hours) Practicals: 2 hours/per week (30 hours)		
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	30
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours	30
		16.3.	Practice: total hours	
17.	Other forms of activities	17.1.	Project assignments: hours	
		17.2.	Individual tasks: hours	
		17.3.	Self-directed learning	40
18.	Conditions for receiving authorization	To enter the final exam, a student needs to score a minimum of 45 points in theoretical, practical instruction and continuous verification. If the student, through a continuous test of knowledge, has not shown satisfactory results, and has received points only for theoretical and practical teaching, he or she shall proceed to a complete final examination. To be admitted to the final exam, a student must have passed the following exams: Diseases in farm animasl 1 and 2, Infectious diseases of domestic animals 1		

19.	Assessment methods The student is required to actively monitor all predicted activities by which he earns points as part of the final assessment. Continuous Knowledge Testing (two): written First Check: Theoretical Section Second check: Practical section of a slaughterhouse Final Exam: Oral				
	19.1.	Tests: points			20
	19.2.	Written essay/project assignment, oral or wrriten presentation: points			10
	19.3.	Final exam: points			70
20.	Grading criteria (points/grade)		up to 59 points		5 (five) (F)
			60 to 68 points		6 (six) (E)
			69 to 76 points		7 (seven) (D)
			77 to 84 points		8 (eight) (C)
			85 to 92 points		9 (nine) (B)
			93 to 100 points		10 (ten) (A)
21.	Method of monitoring the quality of teaching process		Report from the Self-evaluation committee and anonymous student survey		

22.	Literature					
	22.1.	Mandatory literature				
		No.	Author	Title	Publisher	Year
		1.	Ninios, Lunden, Korkeala, Fredriksson-Ahomaa	*Meat Inspection and Control in the Slaughterhouse*	Wiley	2014
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year
		1.	Wilson W. G.	*Wilson's practical meat inspection*	Wiley	1997
		2.	Bremner, A., Johnston, M.	*Poultry Meat Hygiene and Inspection*	W. B. Saunders Company Ltd.	1996
		3.				

No. 52

Attachement no. 3		**Integrated first and second cycle of studies**
1.	Program course title	**Milk Hygiene and Technology**
2.	Code	VM2023-513
3.	Study program	Veterinary medicine

4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Food safety and Veterinary Public Health			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	V (Fifth)	Semester	Ninth (IX)
7.	Course load expressed in ECTS credits	4.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Pavle Sekulovski, PhD Prof. Dean Jankuloski, PhD Prof. Sandra Mojsova, PhD Prof. Mirko Prodanov, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course	For attending: Decision on Study Rules for first and second cycle integrated studies (undergraduate studies) and second cycle studies (postgraduate studies) at FVMS (UG 554, 26.07.2021). For passing: passed Internal Diseases in Farm Animals 2, Infectious Diseases in Domestic Animals 1			
11.	Objectives of the course program (competencies) and learning outcomes	Stable sampling, sampling during transport and sampling of market, preparation of minutes Organoleptic (sensory analysis) of milk and dairy products. Determination of natural milk composition, density, milk fat amount, determination of proteins, dry matter and fat-free dry matter by reference methods Routine methods (density, freezing point, chemical composition of raw milk, and total number of microorganisms) Proving milk adulteration and determining milk freshness by reference methods Evidence of procedures for pasteurization and sterilization of milk Determination of somatic cells in milk. Bacteriological examination and monitoring of milk quality and plant hygiene. Hygiene of milking equipment, swabs and rinses. Detection of antibiotics, mycotoxins and other residues in milk. Determination of the quality of condensed milk, sour cream, butter, fermented products, cheeses, ice creams. Introduction to the technological process of production in dairies. Sampling and sampling reports. Regulations in the drafting and analysis of milk and dairy product reports. Routine, instrumental and reference methods for physicochemical analyses of milk and dairy products Microbiological testing of milk and dairy products as well as familiarity with methods for detecting antibiotics, mycotoxins and other residues. Setting, purpose and manner of veterinary examination, control and supervision in the production, processing and sale of milk and dairy products Identifing hazards and risks in the production and sale of milk and dairy products. Interpretation of results and evaluation of quality and health of milk and dairy products. Distinguishing and identifying food types according to the production process. Defining factors of acceptability of milk and dairy products for human nutrition Knowledge of legislation in the development and analysis of notices in the field of hygiene and technology of milk and dairy products. Evaluation of production hygiene procedures in the facility and process control indicators			
12.	Detailed course content by	Milk in people's diets.			

	chapter and unit with learning outcomes for each chapter	Mammary gland morphology and lactation physiology (mammary gland development, onset of secretion, lactation, breast involution). Definition of milk, chemical composition (water, milk fat, lactose, proteins, enzymes, salt and minerals). Physical and physical chemical properties of milk. milk from other mammals. Somatic cells, mastitis and impaired secretion Assessment of milk safety. Milk microbiology: contamination of milk, growth of microorganisms in milk. Non-pathogenic microorganisms. Pathogenic microorganisms (rickets, viruses transmitted through human milk, bacterial agents). Chemical contaminants of milk: residues from veterinary drugs, pesticides, heavy metals, chlorinated hydrocarbons, radionuclides. Hygiene of milk production (manual and machine). Primary milk processing, milk transport, sanitation procedures in the dairy. Veterinary sanitary supervision in the production and circulation of milk and dairy products. Dairies. secondary milk processing. pasteurized and sterilized milk. fermented milk products and fermentation processes. Technological procedures that lead to an increase in dry matter in dairy products. powdered milk and whey powder. Technological processes that lead to an increase in fat in dairy products. sour cream, butter, butter and cream. membrane processes Technological processes in which water is partially or completely taken from milk. condensed milk. Technological processes of obtaining cheeses and yellow cheese frozen products. ice cream and other milk products. Probiotics and prebiotics in the dairy industry Milk and dairy products. HACCP system in the dairy industry		
13.	Inter-connection with other subjects (courses)	Internal Diseaes in Farm Animals 1 and 2, Infectious Diseases in Domestic Animals 1, Avian Diseases, Veterinary Toxicology, Fish Biology and Pathology		
14.	Detailed description of teaching and working methods for the subject	Theoretical instruction: interactive (large-group lectures with discussion and student engagement). Practical instruction: field and laboratory exercises and other forms of small-group work. Term paper: learning using professional literature and the Internet, drafting a term paper (essay/poster); Presentation and discussion of the seminar paper.		
15.	Total available time	100 hours Theory classes: 2 hours/per week (30 hours) Practicals: 2 hours/per week (30 hours)		
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	30
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours	30
		16.3.	Practice: total hours	
17.	Other forms of activities	17.1.	Project assignments: hours	
		17.2.	Individual tasks: hours	
		17.3.	Self-directed learning	40

18.	Conditions for receiving authorization	To enter the final exam, a student needs to score a minimum of 45 points in theoretical, practical instruction and continuous verification. If the student, through a continuous test of knowledge, has not shown satisfactory results, and has received points only for theoretical and practical teaching, he or she shall proceed to a complete final examination. To enter the final examination, a student must have passed the following exams: Diseases of ruminants 1 and 2, Infectious diseases of domestic animals 1, Veterinary toxicology, Biology and pathology of fish			
19.	Assessment methods The student is required to actively monitor all predicted activities by which he earns points as part of the final assessment. Continuous Knowledge Testing (two): written First Check: Theoretical Section Second check: Practical section of a slaughterhouse Final Exam: Oral				
	19.1.	Tests: points			20
	19.2.	Written essay/project assignment, oral or wrriten presentation: points			10
	19.3.	Final exam: points			70
20.	Grading criteria (points/grade)		up to 59 points		5 (five) (F)
			60 to 68 points		6 (six) (E)
			69 to 76 points		7 (seven) (D)
			77 to 84 points		8 (eight) (C)
			85 to 92 points		9 (nine) (B)
			93 to 100 points		10 (ten) (A)
21.	Method of monitoring the quality of teaching process	Report from the Self-evaluation committee and anonymous student survey			

22. Literature

Mandatory literature

No.	Author	Title	Publisher	Year
1.		*Mastitis. Newsletter N° 24*	Bulletin of the IDF	2001
2.		*Cheeses in all their Aspects*	Bulletin of the IDF	2001
3.		*World Dairy Situation*	Bulletin of the IDF	2002
4.		*Health benefits and safety avaluation of certain food components*	Bulletin of the IDF	2002
5.		*The implications of policy changes for the world dairy industry.*	Bulletin of the IDF	2002
6.	Early, R.	*The Technology of Dairy Products*	VCH Publishers	1992
7.	Harbutt, Juliet	*The world encyklopedia of cheese*	Annes Publishing Limites	1998

22.2. Additional literature

		No.	Author	Title	Publisher	Year

No. 53

Attachment no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Fish Biology and Pathology**			
2.	Code	VM2023-514			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss. Cyril and Methodius University in Skopje, Department of Biology and Pathology of Honey Bees, Fish and Game			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Fifth (V)	Semester	Ninth (IX)
7.	Course load expressed in ECTS credits	3.5			
8.	Teacher (leading teacher, in case of multiple teachers)	Appointed teacher by the Teaching Scientific Councli			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course	For attending: Decision on Study Rules for first and second cycle integrated studies (undergraduate studies) and second cycle studies (postgraduate studies) at FVMS (UG 554, 26.07.2021).			
11.	Objectives of the course program (competencies) and learning outcomes	The theoretical classes of the course aim to introduce the students to the importance of fisheries and aquaculture in the Republic of North Macedonia, the basics of ecology in aquatic ecosystems, the basics of aquaculture and commercial production of the most important fish species, general characteristics of fish diseases, viral, bacterial, fungal, parasitic, exotic and fish diseases with non-infectious aetiology, egg, larva and aquarium fish diseases, biological enemies and pests of fish, disease prevention and human protection from zoonoses, control measures, disease eradication and legislation for eradication of the most important fish diseases. In this manner, the future doctor of veterinary medicine will be able to gain knowledge for recognition of the main clinical and pathomorphological changes of fish diseases, be capable for advising and applying proper medication for fish diseases, be capable for consulting for taking prevention measures including promotion of optimal health and aquaculture production. The practicals of the course aim to introduce students to: fish systematics, fish species in the Republic of North Macedonia, fish anatomy and physiology, practical aspects of intensive aquaculture,			

		diagnosis of fish diseases and implementation of measures for prevention, control, therapy and eradication of fish diseases.
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	Theoretical classes: 16. Fisheries and aquaculture (outcomes: differentiate between capture fisheries and aquaculture; understand the global importance of fisheries and aquaculture). 17. Basics of ecology in aquatic ecosystems (outcomes: comprehend the structure and function of aquatic ecosystems; understand nutrient cycles and energy flow in aquatic environments; recognize the importance of biodiversity in aquatic ecosystems). 18. Aquaculture 1 (outcomes: understand fundamental principles of aquaculture; learn about different aquaculture systems; know the basic water quality management in aquaculture). 19. Aquaculture 2 (outcomes: master the conventional and advanced aquaculture techniques of salmonid and cyprinid fish; comprehend the concepts of integrated aquaculture systems). 20. General characteristics of fish diseases (outcomes: learn about host-pathogen-environment interactions in fish; recognize the general signs of disease in fish). 21. Viral fish diseases (outcomes: understand the aetiology, transmission, pathogenesis, clinical signs, and diagnosis of viral fish diseases; learn about prevention and control strategies for viral fish diseases). 22. Bacterial fish diseases (outcomes: understand the aetiology, transmission, pathogenesis, clinical signs, and diagnosis of bacterial fish diseases; learn about treatment, prevention and control strategies for bacterial fish diseases). 23. Fungal fish diseases (outcomes: understand the aetiology, transmission, pathogenesis, clinical signs, and diagnosis of fungal fish diseases; learn about treatment, prevention and control strategies for fungal fish diseases) 24. Parasitic fish diseases (outcomes: understand the aetiology, transmission, pathogenesis, clinical signs, and diagnosis of parasitic fish diseases; learn about treatment, prevention and control strategies for parasitic fish diseases) 25. Non-infectious fish diseases (outcomes: understand nutritional deficiencies and their impacts on fish health; recognize environmental stress-induced diseases). 26. Exotic fish diseases (outcomes: learn about major exotic diseases threatening aquaculture industries). 27. Diseases of eggs and larvae (outcomes: understand specific diseases and conditions of fish eggs and larvae). 28. Biological enemies and pests of fish (outcomes: identify predators and competitors in aquatic ecosystems; learn about pest management in aquaculture). 29. Diseases of aquarium fish (outcomes: recognize common health issues in ornamental fish species; understand the challenges of diagnosing and treating aquarium fish; learn about proper aquarium management for disease prevention). 30. Fish health protection and legislation (outcomes: understand national and international regulations on fish health; learn about fish health certification and movement controls; learn the principles of biosecurity in aquaculture facilities; understand the role of veterinarians in fish health management and policy-making).

		Practicals: 1. Fish systematics and species of fish in the Republic of North Macedonia (outcomes: classify major fish groups relevant to fisheries and aquaculture; identify the fish species in North Macedonia; describe the biological characteristics of the different fish species). 2. Fish anatomy (outcomes: identify and describe the major external and internal anatomical features of fish; compare and contrast the anatomical differences between various fish species; explain how fish anatomy relates to their physiological functions and habitat adaptations). 3. Fish physiology (outcomes: explain the basic physiological processes in fish, including respiration, circulation, and osmoregulation; describe the reproductive physiology of fish; discuss how environmental factors affect fish physiology). 4. Practical aspects of intensive aquaculture (outcomes: describe common aquaculture systems and their management; explain feeding strategies and nutritional requirements for farmed fish; discuss water quality management in aquaculture systems; outline breeding and genetic improvement techniques in fish farming). 5. Basics of fish disease diagnostics (outcomes: recognize common clinical signs of fish diseases; perform basic necropsy techniques for fish; describe sampling methods for diagnostic testing in fish; interpret basic laboratory results related to fish health). 6. Diagnostics of viral diseases in fish (outcomes: identify major viral pathogens affecting fish). 7. Diagnosis of bacterial diseases in fish (outcomes: identify major bacterial pathogens affecting fish). 8. Diagnostics of fungal diseases in fish (outcomes: identify major fungal pathogens affecting fish). 9. Diagnostics of parasitic diseases in fish (outcomes: identify major ecto- and endoparasites affecting fish). 10. Administration of medicines for fish (outcomes: describe various methods of medicine administration in fish, discuss legal and safety considerations in fish medication). 11. Vaccination of fish (outcomes: explain the principles of fish immunology and vaccination; describe different types of vaccines used in aquaculture, demonstrate proper vaccination techniques for fish). 12-15. Visit to a carp/trout farm (outcomes: apply theoretical knowledge to real-world aquaculture settings; identify common management practices in carp and trout farms; assess fish health in a farm environment; evaluate biosecurity measures in aquaculture facilities).
13.	Inter-connection with other subjects (courses)	Animal Anatomy 1 and 2, Animal Physiology 1 and 2, Microbiology 1 and 2, Veterinary Immunology, Parasitology and Parasititc Diseases 1 and 2, General and Special Pharmacology, Veterinary Epidemiology, Animal Behaviour and Welfare, Domestic Animal General Nutrition and Specific Nutrition of Domestic Animals
14.	Detailed description of teaching and working methods for the subject	Theoretical classes: interactive (lectures in large group with discussion and active participation of the students). Practicals: practical work with small groups of students.

		Written essay: learning with use of referent textbooks and internet, preparing written essay; presentation and discussion about the written essay.		
15.	Total available time	87.5 hours		
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	30
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours	30
		16.3.	Practice: total hours	
17.	Other forms of activities	17.1.	Project assignments: hours	
		17.2.	Individual tasks: hours	
		17.3.	Self-directed learning	27.5
18.	Conditions for receiving authorization	The student is responsible for actively following all the activities that earn points as part of the final assessment. The student can be excused from classes up to 30% of the total hours.		

19.	Assessment methods		
	19.1.	Tests: points	2 tests, each with min. 15, max. 30 points.
	19.2.	Written essay/project assignment, oral or written presentation: points	min. 6, max. 10 points.
	19.3.	Final exam: points	30-60 points.

20.	Grading criteria (points/grade)	up to 59 points	5 (five) (F)
		60 to 68 points	6 (six) (E)
		69 to 76 points	7 (seven) (D)
		77 to 84 points	8 (eight) (C)
		85 to 92 points	9 (nine) (B)
		93 to 100 points	10 (ten) (A)
21.	Method of monitoring the quality of teaching process	Report from the Self-evaluation committee and anonymous student survey	

22. Literature

22.1. Mandatory literature

No.	Author	Title	Publisher	Year
1.	T. V. R. Pillay, M. N. Kutty	*Aquaculture: Principles and Practices, 2nd Edition*	Wiley-Blackwell	2005
2.	Quentin Bone, Richard Moore	*Biology of Fishes, 3rd Edition*	Taylor & Francis Group	2008
3.	Ronald J. Roberts	*Fish pathology, 4th edition*	Wiley-Blackwell	2012

22.2. Additional literature

No.	Author	Title	Publisher	Year

		1.	John S. Lucas (Editor), Paul C. Southgate (Editor), Craig S. Tucker (Editor)	*Aquaculture: Farming Aquatic Animals and Plants, 3rd Edition*	Wiley-Blackwell	2018
		2.	Stephen A. Smith (editor)	*Fish Diseases and Medicine*	Taylor & Francis Group	2021
		3.				

No. 54

Attachement no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Infectious Diseases in Domestic Animals 2**			
2.	Code	VM2023-515			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Infectious Diseases and Epidemiology			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Fifth (V)	Semester	Ninth (IX)
7.	Course load expressed in ECTS credits	5.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Kiril Krstevski, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course	For attending: Decision on Study Rules for first and second cycle integrated studies (undergraduate studies) and second cycle studies (postgraduate studies) at FVMS (UG 554, 26.07.2021). For passing: passed Diseases in ruminats 2, Infectious Diseases in Domestic Animals 1, Special Veterinary Pathology			
11.	Objectives of the	The course program aims to familiarize students with the conditions for the			

	course program (competencies) and learning outcomes	emergence, spread and control of infectious diseases, as well as the procedures used for their diagnosis and prevention, as well as the measures for control and complete eradication. After studying this program, students should gain knowledge about the causes and sources of zoonotic diseases, as well as the principles of protection against these diseases when manipulating animals. Also, students should master and understand the techniques and methods for diagnosing infectious diseases (epidemiological, clinical, laboratory), as well as be able to describe their advantages and disadvantages. The ultimate goal of the course program is for students to be able to recognize a possible outbreak of an infectious disease and to act correctly when taking samples for diagnosis and implementing prevention and control measures.		
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	Theoretical lectures: Infectious diseases in cattle: malignant catarrhal fever, papular stomatitis in cattle, wrinkled skin disease, pseudowrinkled skin disease, enzootic bovine leukosis, bovine viral diarrhea, respiratory viral infections in cattle (infectious rhinotracheitis and vulvovaginitis (IBR/IPV), parainfluenza, bovine syncytial virus infection), bovine spongiform encephalopathy) Infectious diseases in sheep and goats: scrapie, contagious croup, contagious ecthyma, Maedi-Visna in sheep, arthritis and encephalitis in goats, plague of small ruminants, border disease, caseous lymphadenitis. Infectious diseases in pigs: classical swine fever, African swine fever, porcine respiratory-reproductive syndrome, porcine parvovirus infection, circovirus infection, scarlet fever, atrophic rhinitis, Gleser's disease, edematous disease in piglets, enzootic bronchopneumonia. Infectious diseases in dogs and cats: distemper, canine parvovirus, infectious hepatitis in dogs, coronavirus enteritis, feline panleukemia, feline infectious peritonitis. Practical teaching: Molecular diagnostic methods (PCR), typing methods (classical, molecular); biosecurity principles and their application at entry/exit of a breeding facility; international organizations involved in the control of infectious diseases; taking, packaging and transporting samples; reporting diseases and application of information systems (national, international) in disease control.		
13.	Inter-connection with other subjects (courses)			
14.	Detailed description of teaching and working methods for the subject	**Theoretical Teaching:** Lectures complemented by the use of educational videos and interactive software to encourage discussion and deeper engagement with the subject topics. **Practical Teaching:** Classroom, laboratory, and field exercises conducted in small groups of up to 10 students to facilitate hands-on learning and active participation. **Independent Learning Assignments:** Preparation of a thematic seminar paper (essay/poster) using professional literature. Presentation and discussion of the seminar paper (optional).		
15.	Total available time	125 hours Theory classes: 3 hours/per week (45 hours) Practicals: 3 hours/per week (45 hours)		
16.	Forms of teaching	16.1.	Theoretical lectures: hours	45
		16.2.	Practical lectures (laboratory, auditorial),	45

	activities		seminars, team work: hours	
		16.3.	Practice: total hours	
17.	Other forms of activities	17.1.	Project assignments: hours	
		17.2.	Individual tasks: hours	
		17.3.	Self-directed learning	35
18.	Conditions for receiving authorization			

19. Assessment methods

The assessment elements are: 1. Lecture attendance; 2. Practical class attendance; 3. Practical class activity; 4. Continuous knowledge assessment and 5. Final exam. The minimum and maximum number of points for each of the assessment elements are given in the table below.

Type of activity	***Points***	
	minimum	***maximum***
Attendance on theory classes	**4**	**8**
Attendance on practicals	**10**	**12**
Practical teaching activity	**4**	**8**
Continious wrriten exams	**20**	**32**
Final exam	**22**	**40**
Total:	**60**	**100**

Students must attend at least 50% of the theoretical lectures, .must be present at least 50% of the lectures and at least 80% of the practical classes.

The continuous examination and the final exam are realized in writing or orall. During the classes, 1 continuous examination with 8 questions is organized, in which the student must earn at least 20 out of the maximum 32 points. Students who do not earn the minimum points have the right to a corrective continuous examination, but at most 3 times in the year in which they are taking the course. To proceed to take the final exam, the student must earn a minimum of points from each assessment element, or at least 38 points. Regardless of the number of points earned from the previous four assessment elements, the student must demonstrate sufficient knowledge and earn a minimum of 22 points on the final exam.

To summarize, the student needs to attend a sufficient percentage of lectures and practical classes, pass the continuous examinations, and earn enough points (38 points in total from all assessments) to proceed to the final exam. On the final exam, they must earn at least 22 points to pass.

19.1.	Tests: points	
19.2.	Written essay/project assignment, oral or wrriten presentation: points	
19.3.	Final exam: points	

20.	Grading criteria (points/grade)	up to 59 points	5 (five) (F)
		60 to 68 points	6 (six) (E)
		69 to 76 points	7 (seven) (D)
		77 to 84 points	8 (eight) (C)
		85 to 92 points	9 (nine) (B)
		93 to 100 points	10 (ten) (A)
21.	Method of monitoring the quality of teaching process	Report from the Self-evaluation committee and anonymous student survey	
22.	Literature		
	22.1.	Mandatory literature	

		No.	Author	Title	Publisher	Year
		1.	Constable P., K. W. Hinchcliff, S. Done, W. Gruenberg	*Veterinary Medicine, A Textbook of the Diseases of Cattle, Horses, Sheep, Pigs and Goats, 11th Ed*	W. B. Saunders Ltd	2016
		2.	M.A.S. Moreira, A. Silva Júnior, M. C. Lima, S.L. da Costa	*Chapter 11- Infectious Diseases in Dairy Cattle*	Academic Press	2018
		3.	D. C. Sellon, M. T. Long (Editors)	*Equine Infectious Diseases*	Elsevier Saunders	2014
		4. 5.	Pugh, D. G., N. Baird W.J Smith, D.J. Taylor, R.H.C. Penny	*Sheep and Goat Medicine* *A Colour Atlas of Diseases and Disorders of the Pig*	Elsevier Saunders	2012
		6	Greene, C. G.	*Infectious Diseases of the Dog and Cat, 4th Ed*	Elsevier Saunders	2012
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year
		1.	Various authros	*Disease Control Tools*	available at https://www.discontools.eu/	
		2.		*The Center for Food Security and Public Health Iowa (Various authors)*	Available at: Animal Disease Resources - CFSPH	
		3.	Merck (various authors)	*Merck Veterinary Manual*	available at Merck Veterinary Manual	

No. 55

Attachement no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Veterinary Epidemiology**			
2.	Code	VM2023-516			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Infectious Diseases and Epidemiology			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Fifth (V)	Semester	Ninth (IX)
7.	Course load expressed in ECTS credits	2.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Kiril Krstevski, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course	For attending: Decision on Study Rules for first and second cycle integrated studies (undergraduate studies) and second cycle studies (postgraduate studies) at FVMS (UG 554, 26.07.2021). For passing: passed Internal Diseases in Farm Animals 2, Infectious Diseases in Domestic Animals 1, Special Veterinary Pathology			
11.	Objectives of the course program (competencies) and learning outcomes	The aim of this course is to introduce the students with meaning and importance of the quantitative analysis of some disease in the population, as a addition to the knowledge about its etiology, diagnostics and control, both for particular animals and herds. Students would became related with elemental knowledge about main principles and analytical techniques used in the epidemiological studies.			
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	Introduction. Objectives of the veterinary epidemiology. Concepts and principles in veterinary epidemiology. Description of the disease outbreak. Field researching. Observation studies. Diagnostic testings. Clinical investigations. Comparative epidemiology. Economy of diseases. Health schedules. Control and eradication of diseases.			
13.	Inter-connection with other subjects (courses)				
14.	Detailed description of teaching and working methods for the subject	Theory classes: interactive (lectures in large group with discussion and active participation of the students). Practicals: practicals and other ways of work with smaller groups Written assay: learning with use of referent textbooks and internet, preparing written assay; presentation and discussion about the written assay. Performance of the computer simulation, i.e. solving tasks from the practical veterinary epidemiology. The tasks are in a written form, and solutions are found with computer			
15.	Total available time	50 hours Theory classes: 1 hours/per week (15 hours) Practicals: 1 hours/per week (15 hours)			

16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	15
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours	15
		16.3.	Practice: total hours	
17.	Other forms of activities	17.1.	Project assignments: hours	
		17.2.	Individual tasks: hours	
		17.3.	Self-directed learning	20
18.	Conditions for receiving authorization			

19. Assessment methods

The assessment elements are: 1. Lecture attendance; 2. Practical class attendance; 3. Practical class activity; 4. Continuous knowledge assessment and 5. Final exam. The minimum and maximum number of points for each of the assessment elements are given in the table below.

Type of activity	***Points***	
	minimum	***maximum***
Attendance on theory classes	4	8
Attendance on practicals	10	12
Practical teaching activity	4	8
Continious wrriten exams	20	32
Final exam	22	40
Total:	**60**	**100**

Students must attend at least 50% of the theoretical lectures, .must be present at least 50% of the lectures and at least 80% of the practical classes.
The continuous examination and the final exam are realized in writing or orall. During the classes, 1 continuous examination with 8 questions is organized, in which the student must earn at least 20 out of the maximum 32 points. Students who do not earn the minimum points have the right to a corrective continuous examination, but at most 3 times in the year in which they are taking the course. To proceed to take the final exam, the student must earn a minimum of points from each assessment element, or at least 38 points. Regardless of the number of points earned from the previous four assessment elements, the student must demonstrate sufficient knowledge and earn a minimum of 22 points on the final exam.
To summarize, the student needs to attend a sufficient percentage of lectures and practical classes, pass the continuous examinations, and earn enough points (38 points in total from all assessments) to proceed to the final exam. On the final exam, they must earn at least 22 points to pass.

19.1.	Tests: points	
19.2.	Written essay/project assignment, oral or wrriten presentation: points	
19.3.	Final exam: points	

20.	Grading criteria (points/grade)	up to 59 points	5 (five) (F)
		60 to 68 points	6 (six) (E)
		69 to 76 points	7 (seven) (D)
		77 to 84 points	8 (eight) (C)
		85 to 92 points	9 (nine) (B)
		93 to 100 points	10 (ten) (A)
21.	Method of monitoring the quality of teaching process	Report from the Self-evaluation committee and anonymous student survey	
22.	Literature		
	22.1.	Mandatory literature	

		No.	Author	Title	Publisher	Year
		1.	Thrusfield Michael	*Veterinary Epidemiology*	Blackwell Science	2007
		2.	Pfeifer Dirk	*Introduction to veterinary epidemiology*	University of London, London,UK	2009
		3.				
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year
		1.	Stevenson M	*An Introduction to Veterinary Medicine*	EpiCentre, IVABS, Massey University, NewZeland,	2005
		2.	Kleinbaum D. G.,Kuper L. L., Morgenstern H.	*Epidemiological Research – Principles and Quantitative Methods.*	Nostrand Reinhold, NewYork	1987
		3.				

No. 56

Attachement no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Herd Health Management**			
2.	Code	VM2023-517			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Fifth (V)	Semester	Ninth (IX)
7.	Course load expressed in ECTS credits	2.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Subject coordinator / Appointed teacher according the descision of the Teaching-Scientific Council			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course	For attending: Decision on Study Rules for first and second cycle integrated studies (undergraduate studies) and second cycle studies (postgraduate studies) at FVMS (UG 554, 26.07.2021) and received atuhorisation for Reproduction 1 and For passing: passed Reproduction 1, Internal Diseases in Farm			

		Animals 1		
11.	Objectives of the course program (competencies) and learning outcomes	The aim of the course Herd health management (HHM) is to familiarize students with the basic principles of managing herd health and production of livestock farms, as a separate veterinary service that is geared towards maximum expression of genetic potential of individual animal and the herd as a whole, by optimizing farm management and the overall position of the farm, consequently farm income. The student will need to know the principles of HHM, the way of settings the objectives and systematic strategies, record keeping, organize visits to farms under determined protocol, to be close to the epidemiological and economic aspects of the HHM; as well as to know the principles of monitoring and management of dry off period, milk production and metabolic diseases, reproductive performance, udder health, hoof health, control of infectious diseases. In this way the future doctor of veterinary medicine will be allowed to acquire knowledge of management of the health of the herd in order to assist farmers in optimizing health, production and welfare of the animals in the herd. ***Practicals*** of the course have the task to train future DVM independently to manage the herd health and production on a farm, taking into account the individual segments of this process such as the management of reproduction, milk production, health of the hoof and udder, metabolic and infectious diseases, management of dry off period and overhaul of the herd. All this should be accomplished through practical exercises for setting the goals of the farm, training for proper record keeping and organizing visits to farms, perform the necessary clinical and laboratory testing, analysis and decision making based on information collected and finally monitoring the effects of the recommended intervention		
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	Basic principles, objectives and systematic strategies. Monitoring of the herd overhaul. Monitoring the management in dry off period. Monitoring of the milk production. Monitoring the reproductive performance. Monitoring of the udder health. Monitoring of the hoof health. Control of infectious diseases.		
13.	Inter-connection with other subjects (courses)			
14.	Detailed description of teaching and working methods for the subject	Practicals: practical work with smaller groups Written assay: learning with use of referent textbooks and internet, preparing written assay; presentation and discussion about the written assay.		
15.	Total available time	50 hours Practicals: 3 hours/per week (45 hours)		
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours	45
		16.3.	Practice: total hours	
17.	Other forms of activities	17.1.	Project assignments: hours	
		17.2.	Individual tasks: hours	
		17.3.	Self-directed learning	5
18.	Conditions for receiving			

	authorization				
19.	Assessment methods For being able for gaining final grade mark, the student has gain up to 35 points from attendance on practicals, to prepare one written assay and to show appropriate activity and knowledge on the practicals.				
	19.1.	Tests: points			
	19.2.	Written essay/project assignment, oral or wrriten presentation: points			
	19.3.	Final exam: points			
20.	Grading criteria (points/grade)		up to 59 points		5 (five) (F)
			60 to 68 points		6 (six) (E)
			69 to 76 points		7 (seven) (D)
			77 to 84 points		8 (eight) (C)
			85 to 92 points		9 (nine) (B)
			93 to 100 points		10 (ten) (A)
21.	Method of monitoring the quality of teaching process		Report from the Self-evaluation committee and anonymous student survey		
22.	Literature				
	22.1.	Mandatory literature			
		No.	Author	Title	Publisher	Year
		1.	Brand A., Noordhuizen J.P.T.M. and Schukken Y.H	*Herd health and Production Management in Dairy Practice.*	Wageningen Pres, Wageningen, The Netherland	(1997)
		2.	Jos Noordhuizen	*Dairy Herd Health and Management*	Edited By Warren H Context	2012
	22.2.	Additional literature			
		No.	Author	Title	Publisher	Year
		1.	Martin Green	*Dairy Herd Health*	CAB International	2021
		2.	Otto M. Radostits	*Herd Health, Food Animal Production Medicine, 3rd Edition*	WB Saunders Company	2001
		3.				

No. 57

Attachement no. 3		**Integrated first and second cycle of studies**
1.	Program course title	**Veterinary Administrative Procedures**
2.	Code	VM2023-518

3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine - Skopje, Ss Cyril and Methodius University in Skopje Department of Veterinary administrative legislation			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Fifth (V)	Semester	Ninth (IX)
7.	Course load expressed in ECTS credits	2.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Elena Davitkovska PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course	For attending: Decision on Study Rules for first and second cycle integrated studies (undergraduate studies) and second cycle studies (postgraduate studies) at FVMS (UG 554, 26.07.2021). For passing: passed Special Pharmacology, Parasitology and Parasitic diseases 2			
11.	Objectives of the course program (competencies) and learning outcomes	The course of Veterinary Administrative Legislation, as part of the legal system, is a set of veterinary legal norms that regulate the organization, activity and control of the veterinary service, veterinary health, animal health care, veterinary public health, well -being and protection of animals, safety of animal food, identification and registration of animals, by-products of animal origin and other veterinary field activities, which are normally regulated. The objective of the course is to introduce students, as future official and authorized doctors of veterinary medicine, to the legal aspects of veterinary activity, the legal regulation of the state, the principles of veterinary international and national legislation, the organization of the veterinary service in the world, in the EU and in the Republic of North Macedonia.			
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	**Theory** *Part One*: Defining the basic notions of the Veterinary Administrative Legislation: the activity of the public administration, acts of public administration, inspection, administrative procedure. *Part Two*: Definition of Veterinary Administrative Legislation Institutes: Legal aspects relating to the position and role of the veterinary service, health protection of animals and veterinary public health, animal protection and well-being, veterinary medical preparations, animal food safety, by-products from animal origin, animal identification and registration system. **Practical instruction** Initiating and conducting general administrative procedure, conducting inspection supervision, adoption of general and specific administrative acts, initiating administrative dispute, etc. International Code of Land Animals and Code of Water Animals of OIE, Handbook of Standards - Laboratory Diagnostic Methods and Vaccines. Notification of diseases according to OIE, WAHIS. Information system for animal health in the			

		world. Examples of EU directives, regulations and decisions related to the veterinary field. Documents and means of identification and registration of animals. Health certificates and documents for animal movement. International Veterinary Certificates. Veterinary documents and acts in slaughterhouses, dairies, processing facilities and all veterinary control places. Transport of animals. Organization and documentation of the measures covered by the Annual Animal Health Program. Organization, obligations and duties for the implementation of multiannual programs for the suppression of various diseases. Visual teaching methods, projection of films and using internet information		
13.	Inter-connection with other subjects (courses)			
14.	Detailed description of teaching and working methods for the subject	Theoretical teaching: Interactive (large group lectures with discussion and student engagement) Practical teaching: Exercises and other forms of work in smaller groups, as well as preparation for the adoption of specific administrative acts in the field of veterinary activity. Research paper: learning using professional literature and the internet, preparing research paper (paper/poster); Presentation and discussion of the research paper.		
15.	Total available time	50 hours Theory classes: 2 hours/per week (30 hours) Practicals: 1 hour/per week (15 hours)		
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	30
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours	15
		16.3.	Practice: total hours	
17.	Other forms of activities	17.1.	Project assignments: hours	
		17.2.	Individual tasks: hours	
		17.3.	Self-directed learning	5
18.	Conditions for receiving authorization	The condition for obtaining the signature of the course teacher at the end of the semester: In addition to the presence on theoretical and practical classes is a mastered knowledge check during the semester with a minimum of 30 points. The final exam is oral. A student who has not shown success in the knowledge check during the semester should take one of the corrective knowledge checks in the exam sessions.		
19.	Assessment methods			
	19.1.	Tests: points		60
	19.2.	Written essay/project assignment, oral or wrriten presentation: points		30
	19.3.	Attendance and participation		10
20.	Grading criteria (points/grade)		up to 59 points	5 (five) (F)
			60 to 68 points	6 (six) (E)
			69 to 76 points	7 (seven) (D)
			77 to 84 points	8 (eight) (C)
			85 to 92 points	9 (nine) (B)
			93 to 100 points	10 (ten) (A)
21.	Method of monitoring the quality of	Report from the Self-evaluation committee and		

	teaching process			anonymous student survey		
22.	Literature					
	22.1.	Mandatory literature				
		No.	Author	Title	Publisher	Year
		1.	Elena Davitkovska	*Veterinary Administrative Legislation*	Faculty of veterinary medicine - Skopje, Ss Cyril and Methodius University in Skopje	2022
		2.	Elena Davitkovska and Ivana Shumanovska-Spasovska	*Administrative Procedures*	Faculty of Law - Skopje, Ss Cyril and Methodius University in Skopje	2021
		3.		*Authorized lectues authorized lectures and practicals updated every year*		
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year
		1.	Borche Davitkovski and Ana Pavlova Daneva	*Administrative Law – part one (material law)*	Faculty of Law - Skopje, Ss Cyril and Methodius University in Skopje	2018
		2.	Borche Davitkovski and Ana Pavlova Daneva	*Administrative Law – part two (procedure law)*	Faculty of Law - Skopje, Ss Cyril and Methodius University in Skopje	2020

		3.	*Law on the general administrative procedure* *Regulation (EU) 2017/625 – Official Controls* *Regulation (EU) 2016/429 ("Animal Health Law") Title: On transmissible animal diseases and repealing certain acts in the area of animal health.* *Regulation (EU) 2021/963 (Implementing Regulation for Animal Health Law)* *World Organisation for Animal Health (WOAH – OIE) Guide to Veterinary Legislation* *OIE Veterinary Legislation Support Programme (VLSP)*

No. 58

Attachement no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Veterinary Toxicology**			
2.	Code	VM2023-519			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Pharmacology and Toxicology			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Fifth (V)	Semester	Ninth (IX)
7.	Course load expressed in ECTS credits	2.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Romel Velev, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course	For attending: Decision on Study Rules for first and second cycle integrated studies (undergraduate studies) and second cycle studies (postgraduate studies) at FVMS (UG 554, 26.07.2021). For passing: Passed General and Special Pharmacology			
11.	Objectives of the course program (competencies) and learning outcomes	***Theory classes*** of the course Veterinary toxicology aim to introduce students with the main principles of veterinary toxicology: the structure, the way action and pharmacokinetics of toxic substances, pathogenesis, clinical diagnosis and treatment of poisoned animals, ethical, environmental implications and implications on human health from use of potential toxic substances; evaluation of products of animal origin contaminated with poisons and others. For student can demonstrate knowledge and understanding of veterinary			

		Toxicology as a basis for the study and practice of clinical veterinary Medicine. In this way the future doctor of veterinary medicine will be possible to acquire: knowledge to identify the indications for medical intervention in poisoning; ability to provide advice and application of appropriate treatment of poisoning in individual life or group of animals, ability to give advice on preventive veterinary medicine, including promoting optimal health and production. ***Practicals*** of the course Veterinary toxicology aim to introduce students with: different groups of poisons and their characteristics; possible sources poisoning; procedure poisoned animals and antidote, taking and sending material chemic-toxicological analysis; how safe storage and safe removal of poisons, and to illustrate some abstract theoretical concepts through simple laboratory experiments		
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	**Theoretical lectures:** *General toxicology*: Introduction. Definition of poison and terminology. Classification of poisons. Toxokynetics of poisons. Toxodynamic of poisons. Fundamentals of poisoning and treatment in domestic animals. *Special toxicology*: Pesticides: insecticides, rhodenticides, fungicides, herbicides and lymacides. Metals. Industrial pollutants. Nitrogen compounds. Biotoxins (mycotoxins). Poisonous plant Practical lectures Procedure with poisoned animal. Sampling and sending material for chemical-toxicological examination. Evaluation of safety of animal products from the poisoned animal. Antidotes in veterinary toxicology. Estimations in toxicology. Analytical and instrumental methods in veterinary toxicology. Visit of laboratory for control and examination of drugs and introducing with equipment used in veterinary pharmacology and toxicology.		
13.	Inter-connection with other subjects (courses)			
14.	Detailed description of teaching and working methods for the subject	Theory classes: interactive (lectures in large group with discussion and active participation of the students). Practicals: practicals and other ways of work with smaller groups Written assay: learning with use of referent textbooks and internet, preparing written assay; presentation and discussion about the written assay.		
15.	Total available time	50 hours Theory classes: 1 hour/per week (15 hours) Practicals: 1 hour/per week (15 hours)		
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	15
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours	15
		16.3.	Practice: total hours	
17.	Other forms of activities	17.1.	Project assignments: hours	
		17.2.	Individual tasks: hours	
		17.3.	Self-directed learning	20
18.	Conditions for receiving			

	authorization	

19. Assessment methods

Type of activity	*Points*	
	minimum	***maximum***
Attendance on theory classes	**12**	**15**
Attendance and activity (knowledge) on practicals	**12**	**15**
Tests (two)	**15 (x2)**	**30 (x2)**
Final exam	**6**	**10**
Total:	**60**	**100**

The student is obligated for active participation in all predicted activities for gaining points which are part of the final grading.
Tests (two): written
First test: General toxicology
Second test: Special toxicology
Final exam: oral
Complete final exam: oral + written

19.1.	Tests: points	
19.2.	Written essay/project assignment, oral or wrriten presentation: points	
19.3.	Final exam: points	

20.	Grading criteria (points/grade)	up to 59 points	5 (five) (F)
		60 to 68 points	6 (six) (E)
		69 to 76 points	7 (seven) (D)
		77 to 84 points	8 (eight) (C)
		85 to 92 points	9 (nine) (B)
		93 to 100 points	10 (ten) (A)
21.	Method of monitoring the quality of teaching process	Report from the Self-evaluation committee and anonymous student survey	

22. Literature

22.1. Mandatory literature

No.	Author	Title	Publisher	Year
1. Ramesh C. Gupta: Veterinary Toxicology Basic and Clinical Principles, Elsevier Third Edition 2018. 2. Course materials (lecture handouts and notes) will be provided for every students (LMS)				

22.2. Additional literature

No.	Author	Title	Publisher	Year
1.				
2.				
3.				

No. 59

Attachement no. 3		**Integrated first and second cycle of studies**
1.	Program course title	**Meat, Fish, Eggs and Honey – Hygiene and Techonology**
2.	Code	VM2023-521

3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of Veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Food safety and Veterinary Public Health			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	V (Fifth)	Semester	Tenth (X)
7.	Course load expressed in ECTS credits	4.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Pavle Sekulovski, PhD Prof. Dean Jankuloski, PhD Prof. Sandra Mojsova, PhD Prof. Mirko Prodanov, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course	For attending: Decision on Study Rules for first and second cycle integrated studies (undergraduate studies) and second cycle studies (postgraduate studies) at FVMS (UG 554, 26.07.2021). For passing: passed all courses from previous IX semester, including Meat Hygiene and Technology 1 and Infectious Diseases in Domestic Animals 2			
11.	Objectives of the course program (competencies) and learning outcomes	Introduction with the composition and quality of meat; Introduction with the methods of canning meat; evaluating the quality of meat; Familiarity with the technology of production of meat products, poultry meat, game meat; Introduction with the technology of fat production; Introduction with the collection and processing of animal byproducts and waste products; control of sanitation in meat processing plants and their products; Evaluation of the freshness of meat by means of physical-chemical analyses; Sampling meat for laboratory analysis; bacteriological examinations of meat, interpretation of findings, and opinion writing; Examination of the presence of Trichinella sp in meat; Assessment of fat quality by physical-chemical analysis; Sensory analysis of meat products; Performing veterinary sanitary surveillance in markets and fish farms; Quality assessment of meat, fish, egg and honey products			
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	Anatomy, meat composition and quality; Conversion of musculature to meat Basics of Meat Canning and Processing Shredded and molded heat-untreated meat products Salted and brine meat products; heat-treated meat products; Heat-treated and brine meat products; Fermented sausages; Canned meat; Dried, smoked and medium-wet meat products and meat extracts; Poultry meat hygiene; hygiene of game and rabbit meat; Hygiene of fish and fish products; Hygiene of crustaceans, mollusks, frogs and snails Hygiene of eggs and egg products; Hygiene of honey and other bee products.			
13.	Inter-connection with other subjects (courses)	Meat Hygiene and Technology 1 and Infectious Diseases in Domestic Animals 2			
14.	Detailed description of teaching and	Theoretical instruction: interactive (large-group lectures with discussion and student engagement).			

	working methods for the subject	Practical instruction: field and laboratory exercises and other forms of small-group work. Term paper: learning using professional literature and the internet, drafting a term paper (essay/poster); Presentation and discussion of the seminar paper.		
15.	Total available time	100 hours Theory classes: 2 hours/per week (30 hours) Practicals: 2 hours/per week (30 hours)		
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	30 h
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours	45 h
		16.3.	Practice: total hours	
17.	Other forms of activities	17.1.	Project assignments: hours	
		17.2.	Individual tasks: hours	
		17.3.	Self-directed learning	25 h
18.	Conditions for receiving authorization	The student is required to actively monitor all scheduled activities by which he earns points as part of the Final Assessment. Continuous Knowledge Testing (two): written First Check: - General Section Second Check: - Special Section Final Exam: Oral Complete final exam: oral and written (includes one continuous check)		

19.	Assessment methods The student is required to actively monitor all predicted activities by which he earns points as part of the final assessment. Continuous Knowledge Testing (two): written First Check: Theoretical Section Second check: Practical section of a slaughterhouse Final Exam: Oral		
	19.1.	Tests: points	Max. 20
	19.2.	Written essay/project assignment, oral or wrriten presentation: points	Max. 10
	19.3.	Final exam: points	Max. 70

20.	Grading criteria (points/grade)	up to 59 points	5 (five) (F)
		60 to 68 points	6 (six) (E)
		69 to 76 points	7 (seven) (D)
		77 to 84 points	8 (eight) (C)
		85 to 92 points	9 (nine) (B)
		93 to 100 points	10 (ten) (A)
21.	Method of monitoring the quality of teaching process	Report from the Self-evaluation committee and anonymous student survey	

22.	Literature					
	22.1.	Mandatory literature				
		No.	Author	Title	Publisher	Year
		1.	Gracey,J., Collins, D.S., Huey, R.	*Meat Hygiene*	Wiley	1995

		2.	Varnam, A. H., Sutherland J. P.	*Meat and Meat Products*	Chapman & Hall	1995
		3.				
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year
		1.	Wilson W. G.	*Wilson's practical meat inspection*	Wiley	1997
		2.	Bremner, A., Johnston, M.	*Poultry Meat Hygiene and Inspection*	W. B. Saunders Company Ltd.	1996
		3.	Bunčić, S.	*Integrated Food Safety and Veterinary Public Health*	CABI	1999

No. 60

Attachement no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Forensic Veterinary Medicine and Veterinary Ethics**			
2.	Code	VM2023-522			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Pathology and Forensic Medicine			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Fifth (V)	Semester	Tenth (X)
7.	Course load expressed in ECTS credits	5.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Trpe Ristoski, PhD Assoc. Prof. Ivica Gjurovski, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course	For attending: Decision on Study Rules for first and second cycle integrated studies (undergraduate studies) and second cycle studies (postgraduate studies) at FVMS (UG 554, 26.07.2021). Successfully validated attendance of all subjects from V to IX semester			
11.	Objectives of the course program (competencies) and learning outcomes	The theoretical teaching of the subject Forensic Veterinary Medicine and Veterinary Ethics makes a synthesis of all previously completed subjects from the veterinary study. Special attention is paid to diseases from			

		judicial aspect, above all of the latency, the science, the persistence of the disease. Ethics in this subject is dealt from the aspect of the moral and ethical behavior of veterinary doctors in the performance of their professional duties. Practical classes in Forensic Veterinary Medicine and Veterinary Ethics familiarize the students with the practical application of the laws in everyday veterinary practice and at the same time acquaints them with codes on veterinary medical ethics.		
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	Theoretical teaching: Introduction and history of forensic veterinary medicine. Courts (function and jurisdiction). Expertise, general and special methods. Professional mistakes. General pathomorphological changes. Common diseases caused by bacteria and viruses. Common diseases caused by parasites. Diseases and defects in horses. Diseases and defects in cattle, sheep and goats. Diseases and defects in pigs and chickens. Diseases and defects in poultry, bees and other animals. General concepts in ethics, deontology, origin and historical development of medical ethics. Ethical and deontological principles of practice of veterinarians in the field of veterinary medicine. Protection of the rights and well-being of animals. Codes on veterinary-medical ethics. Practical course: Law on Obligatory Relations. Law on judicial and civil procedure. Criminal acts (criminal acts, economic misdemeanors and misdemeanors). Autopsy of domestic animals (theoretical). Autopsy of domestic animals (practically). Professional mistakes. Forensic evaluation of diseases with common bacterial and viral etiology. Forensic assessment of diseases in cattle, sheep and goats. Forensic assessment of diseases in horses and pigs. Forensic assessment of diseases in poultry. Forensic assessment of diseases in bees and other animals. Autopsy of animals with forensic assessment of material deficiencies, remains and organs from the deceased and slaughtered animals.		
13.	Inter-connection with other subjects (courses)			
14.	Detailed description of teaching and working methods for the subject	Theoretical teaching: interactive (lectures in large groups with discussion and engagement of students) Practical classes: exercises Seminar work: learning with the use of professional literature and the Internet, preparation of a seminar effort; presentation and discussion for the seminar effort.		
15.	Total available time	125 hours Theory classes: 3 hours/per week (45 hours) Practicals: 2 hours/per week (30 hours)		
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	45
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours	30
		16.3.	Practice: total hours	
17.	Other forms of activities	17.1.	Project assignments: hours	
		17.2.	Individual tasks: hours	
		17.3.	Self-directed learning	50
18.	Conditions for receiving authorization	The student is responsible for actively following all the planned activities with which he earns points as part of the final assessment.		

		The two continuous knowledge tests are written: First test: Introduction and history of forensic veterinary medicine; Courts (function and jurisdiction); Expertise, general and special methods; Expert error; General pathomorphological changes; Common diseases caused by bacteria and viruses and Common diseases caused by parasites. Second test: Diseases and defects of horses; Diseases and defects in cattle; Diseases and defects in sheep and goats; Diseases and defects in pigs; Diseases and defects in chickens, Diseases and defects in poultry, bees and the rest of the animal; veterinary medical ethics. Complete oral and practical exam			
19.	Assessment methods				
	19.1.	Tests: points		One test- Minimum 10 maximum 20 points Total- Minimum 20 Maximum 40 points	
	19.2.	Written essay/project assignment, oral or wrriten presentation: points		Minimum 5 Maximum 10 points	
	19.3.	Final exam: points		Minimum 35 Maximum 50 points	
20.	Grading criteria (points/grade)		up to 59 points	5 (five) (F)	
			60 to 68 points	6 (six) (E)	
			69 to 76 points	7 (seven) (D)	
			77 to 84 points	8 (eight) (C)	
			85 to 92 points	9 (nine) (B)	
			93 to 100 points	10 (ten) (A)	
21.	Method of monitoring the quality of teaching process		Report from the Self-evaluation committee and anonymous student survey		
22.	Literature				
	22.1.	Mandatory literature			
		No.	Author	Title	Publisher	Year
		1.	Prof. dr. Branislav Gjukiќ	*Forensic veterinary medicine*	Veterinary faculty - Belgrade	1991
		2.	Prof. Dr. Zoran Aleksıı and Prof. dr. Branislav Gjukiќ	*Forensic veterinary medicine (general part)*	Veterinary faculty - Belgrade	1999
		3.	Mr. Sasha Petričević i Prof. Dr. Branislav Gjukiќ	*Forensic assessment diseases and defects in Poultry*		2002
		4.	Prof. Dr. Branislav Gjukiќ	*Veterinary medical ethics*	Veterinary faculty - Belgrade	1996
		5		*Law on Obligations of RNM*		

		6	Micevski C.	*Necropsy of domestic animals*	Vet. fac. Skopje	1998
		7	C. Micevski and T. Ristoski	*Canine distemper virus*	Faculty of veterinary medicine - Skopje	2000
		8	Micevski C.	*Diseases of bees*	Medivet, Skopje	1996
		9	Sofrenović G., Knezevic N	*Pathomorphology of important infectious diseases in Animals*	Belgrade-Novi Sad	1994

22.2.	Additional literature				
	No.	Author	Title	Publisher	Year
	1.				
	2.				
	3.				

No. 61

Attachement no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Basic Management and Management of Veterinary Practice**			
2.	Code	VM2023-523			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Rural Economy, Management and Biostatistics			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Fifh (V)	Semester	Tenth (X)
7.	Course load expressed in ECTS credits	2.5			
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Blagica Sekovska, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course	For attending: Decision on Study Rules for first and second cycle integrated studies (undergraduate studies) and second cycle studies (postgraduate studies) at FVMS (UG 554, 26.07.2021).			
11.	Objectives of the course program (competencies) and learning outcomes	Aim of this subject is gaining basic knowledge of management among the students. Student will gat knowledge for planning, organization, team building and others so call soft skills. Student will become aware			

		about interaction of veterinary doctors with social environment. High priority is team work, responsibilities of veterinary doctor to his clients and colleagues, basic knowledge about cost calculation, business planning and organization, motivation etc. This subject will encourage and develop entrepreneurial skills among students.			
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	Theory: Introduction, Planning and strategical planning, Organization of work, Business communication, Team building, Human resources management, Services to clients in veterinary practice, Decision making, veterinary practice like economical paradigm, efficiency and effectivity in veterinary practice. Practice: SWOT analusis, strategical planing, veterinary practice organization, Communication with clients, Team building, basic aspect of marketing in veterinary practice, leadership			
13.	Inter-connection with other subjects (courses)	Connected with Marketing of Veterinary Practice and all clinical subjects			
14.	Detailed description of teaching and working methods for the subject	Interactiv teoretical lectures, group discussion, presentation, dramatisation of situations, case stady			
15.	Total available time	62.5 hours Theory classes: 1 hours/per week (15 hours) Practicals: 2 hours/per week (30 hours)			
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	15	
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours		
		16.3.	Practice: total hours	30	
17.	Other forms of activities	17.1.	Project assignments: hours		
		17.2.	Individual tasks: hours		
		17.3.	Self-directed learning	17.5	
18.	Conditions for receiving authorization				
19.	Assessment methods				
	19.1.	Tests: points		40	
	19.2.	Written essay/project assignment, oral or wrriten presentation: points		20	
	19.3.	Final exam: points		40	
20.	Grading criteria (points/grade)		up to 59 points	5 (five) (F)	
			60 to 68 points	6 (six) (E)	
			69 to 76 points	7 (seven) (D)	
			77 to 84 points	8 (eight) (C)	
			85 to 92 points	9 (nine) (B)	
			93 to 100 points	10 (ten) (A)	
21.	Method of monitoring the quality of teaching process		Report from the Self-evaluation committee and anonymous student survey		
22.	Literature				
	22.1.	Mandatory literature			
		No.	Author	Title	Publisher	Year
		1.	Blagica Sekovska	*Authorized lectures*		2020 till now

		2.	3. Tomas E. Catanzaro, Philip Seibert: Philadelphia, 2000	*Veterinary practice management secrets*	Philadelphia,	2000
		3.				
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year
		1.				

No. 62

Attachement no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Food Safety and Veterinary Public Health**			
2.	Code	VM2023-524			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Food Safety and Veterinary Public Health			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Fifth (V)	Semester	Tenth (X)
7.	Course load expressed in ECTS credits	4.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Pavle Sekulovski, PhD Prof. Dean Jankuloski, PhD Prof. Sandra Mojsova, PhD Prof. Mirko Prodanov, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course	For attending: Decision on Study Rules for first and second cycle integrated studies (undergraduate studies) and second cycle studies (postgraduate studies) at FVMS (UG 554, 26.07.2021) For passing: passed all courses from previous IX semester, including Meat Hygiene and Technology and Infectious Diseases of Domestic Animals 2			
11.	Objectives of the course program (competencies) and learning outcomes	Theoretical Teaching The role and significance of the veterinary profession in food safety and veterinary public health. Food microbiology, food poisoning, food spoilage. Familiarity with national and European legislation in the field of BH and WJZ. (Laws of the Republic of Macedonia and Hygienic			

		Laws EU package, Codex Alimentarius, etc.) Risk Analysis. Control of food production processes. Presentation of modern control systems for quality and food safety (HACCP, ISO, FAO. The role and tasks of the official veterinarian in controlling food safety and quality. Control of food-borne diseases and their reporting, reporting and treatment. Animal hygiene for slaughter and meat production procedures. GMO food, production, approval, control. An integrated approach to food production, preserving animal welfare, and risks which affect people's health. Identification and prevention of consumer fraud in the trade and production of food. Practical Teaching: Duties and responsibilities of a veterinarian. Familiarization with the records arising from the activities of the official veterinarian. Methods of taking and packaging the samples and delivering them to a laboratory for testing. Activities of the official veterinarian in the implementation of national control plans and monitoring programs (Salmonella, residues of veterinary medicinal products and contaminants in food, antimicrobial resistance, control of animal feed and by-products of animal origin, etc.). Familiazing with analytical methods in order to gain theoretical knowledge of laboratory testing of food and water in terms of its safety and quality criteria. Laboratory activities in the laboratory of microbiology of food and animal feed, analytical chemistry of food and animal feed, residues and contaminants, molecular and analysis of GMOs, raw milk and reception department, and sampling and packaging in order to acquire skills for laboratory work. Development of project HACCP plans. Development of project integrated quality control systems and food safety according to ISO standards.
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	Course Content: Introduction to Food Safety and Veterinary Public Health. Food Microbiology. Microbial food spoilage and alimentary infections and intoxications.Research on the causes and sources of food poisoning. National and European legislation. Duties of inspection supervision and the role of the official veterinarian. The Food Chain and the Health Risks Posed by Farms (Stable-to-Table Concept). Food Hygiene and Safety at the Retail Level – Consumers. Residues of biologically active substances and contaminants in food. Food production, environmental protection and distribution chains. Monitoring Antimicrobial Resistance in the Food Chain and the Environment (Concept One Health). Production and marketing of GMO food and its control. Practical Teaching Documentation used by the official veterinarian. Taking and delivering samples for laboratory tests to control the hygiene of process swabs from surfaces. Implementation of monitoring and control programs, antibiotics, hormones, veterinary residues preparations and others (according to national and European legislation). Swabs-determination of Enterobacteriaceae, Aerobic plate count, Food and Raw Materials - *Listeria monocytogenes*, *Campylobacter* spp. *Yersinia enterocolitica*, *Staphilococcus aureus*, *Escherichia. coli*, STEC Water Safety- Membrane Filtration Method, *Ps. aeruginosa*, *E. coli*, coliforms, intestinal enterococci, total microorganisms at 22°C and 37°C, presence of organic matter, evidence of NO_2, NO_3, NH_3. Analysis of contaminants - mycotoxins, toxic elements (As, Pb, Cd, Hg and others), pesticides, radionuclides (alpha, beta, gamma activity), ELISA, HPLC,

		LC-MS/MS, ICP/MS, and other instrumental methods. Antimicrobial Testing - Screening Methods, Delvo Test, Copan Test, Four Plate Test and Quantitative determination with HPLC, LC-MS/MS, and other instrumental methods. Conventional microbiological methods for detection of Salmonella spp, L. monocytogenes, Campylobacter spp and other pathogens in food and serotyping of isolates. Development of HACCP plan for mammalian slaughterhouses, poultry slaughterhouses, dairies, meat processing industry. Developing a Food Risk Analysis. Epidemiological studies of food poisoning (models). Isolation of microorganisms for testing antimicrobial resistance and determination of phenotypic resistance by microdilution in broth, agar gel diffusion and other instrumental methods. Application of rt-PCR technology in detection and quantification of GMOs in food and molecular methods for detection of pathogens in food and genotyping of isolates. Application of methods to detect adulteration and fraud with food (milk, meat, honey, and their products).		
13.	Inter-connection with other subjects (courses)	Meat Hygiene and Technology and Infectious Diseases in Domestic Animals 2		
14.	Detailed description of teaching and working methods for the subject	Theoretical instruction: interactive (large-group lectures with discussion and student engagement). Practical instruction: field and laboratory exercises and other forms of small-group work. Seminar paper: learning using professional literature and the Internet, drafting a term paper (essay/poster). Presentation and discussion of the seminar paper.		
15.	Total available time	100 hours Theory classes: 2 hours/per week (30 hours) Practicals: 2 hours/per week (30 hours)		
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	30
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours	30
		16.3.	Practice: total hours	
17.	Other forms of activities	17.1.	Project assignments: hours	
		17.2.	Individual tasks: hours	
		17.3.	Self-directed learning	40
18.	Conditions for receiving authorization	The student is required to actively monitor all scheduled activities by which he earns points as part of the final assessment. Continuous knowledge testing (two): written First Check: - Project presentation Second Check: - Practical laboratory Final Exam: Oral		
19.	Assessment methods The student is required to actively monitor all predicted activities by which he earns points as part of the final assessment. Continuous Knowledge Testing (two): written First Check: Theoretical Section Second check: Practical section of a slaughterhouse Final Exam: Oral			
	19.1.	Tests: points	Max. 20	
	19.2.	Written essay/project assignment, oral or wrriten presentation: points	Max. 10	
	19.3.	Final exam: points	Max. 70	

20.	Grading criteria (points/grade)	up to 59 points	5 (five) (F)
		60 to 68 points	6 (six) (E)
		69 to 76 points	7 (seven) (D)
		77 to 84 points	8 (eight) (C)
		85 to 92 points	9 (nine) (B)
		93 to 100 points	10 (ten) (A)
21.	Method of monitoring the quality of teaching process	Report from the Self-evaluation committee and anonymous student survey	

22. Literature

22.1. Mandatory literature

No.	Author	Title	Publisher	Year
1.	Sava Buncic	*Integrated Food Safety and Veterinary Public Health*	School of Veterinary Science University of Bristol	2006
2.	Eley, A. R	*Microbial Food Poisoning*	Springer	1996
3.	Doyle, M.P., Beuchat, L.R., Montville, T.J.	*Food Microbiology: fundamentals and frontiers*	ASM Press	2007
4.	Virginia N. Scott, Stevenson, K. E	*HACCP, a systematic approach to food safety: a comprehensive manual for developing and implementing a hazard analysis and critical control point plan*	FPA, Food Products Association	2006
5.	Corlett, D. A.	*HACCP User's Manual*	Aspen Publisher,Inc.	1998
6.	Forsythe, S. J., Hayes, P.R.	*Food Hygiene, Microbiology and HACCP*	Springer	1998
7.	Morrtimore, S., Wallace, C.	*HACCP A practical Approach*	Springer	1998
8.	Pearson, A.M., Dutson, T.R.	*HACCP in Meat, Poultry and Fish Processing: Advances in Meat Research Series Vol.10*	Springer	1999

	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year
		1.	Vindika Lokunarangodage	*2018 Generic Model: ISO 22000:2018 Food Safety Management System*	Amazon Digital Services LLC - Kdp Print Us	2018
		2.	FAO; WHO	*Animal Food Production*	Food & Agriculture Organization of the United Nations	2000
		3.	FAO; WHO	*Food Standard Code 2021*	Food & Agriculture Organization of the United Nations	2021
		4.	FAO; WHO	*Foodborne antimicrobial resistance*	Food & Agriculture Organization of the United Nations	2022
		5.	Chin-Yi Chen	*Antimicrobial Resistance and Food Safety: Methods and Technique*	Academic	2015

No. 63

Attachement no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Analytical Chemistry of Food**			
2.	Code	VM2023-525			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Chemistry			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year/semester	Year	Fifth (V)	Semester	Tenth (X)

7.	Course load expressed in ECTS credits	2.0			
8.	Teacher (leading teacher, in case of multiple teachers)	Prof. Zehra Hajrulai –Musliu, PhD Assist. prof. Risto Uzunov, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course	For attending: Decision on Study Rules for first and second cycle integrated studies (undergraduate studies) and second cycle studies (postgraduate studies) at FVMS (UG 554, 26.07.2021). For passing: passed Chemistry			
11.	Objectives of the course program (competencies) and learning outcomes	Objectives of the subject program (competencies): Acquaintance of students with food products' essential characteristics, quality, and health safety. Acquaintance with National regulations, directives, legal regulations, and rules relating to food quality and safety. Acquaintance of students with the basic principles of analytical chemistry. Acquiring knowledge about instrumental analytical methods commonly applied for quality control and food safety. Acquisition of skills and knowledge for introducing new analytical methods, validation and application of the same in sample control.			
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	Determination of the composition of food products - advantages and disadvantages of different methods for determining moisture, ash and minerals, carbohydrates, dietary fiber, proteins and amino acids, fat, fatty acids and cholesterol, vitamins, additives, residues, and contaminants. Labeling of food products. Statistical methods in food quality control. Acquaintance with the methods and techniques used in quality control and health safety of the basic groups of food products: milk, meat, eggs, cereals, fruits, and vegetables. Students will acquire knowledge of taking, storing, and preparing the sample for analysis (homogenization, weighing, and types of extraction (liquid-liquid extraction, liquid-solid extraction, solid-phase extraction) to obtain a purified and concentrated sample resulting in signal amplification with an appropriate analytical procedure. Peak height-based analyses, GC principles, types of columns, separation methods in HPLC, basic parts of the liquid chromatograph, mass spectrometry, ion types in MS, and interpretation of mass spectra. Acquaintance with legal regulations. Implement and validate new methods for qualitative and quantitative analysis of food products. Statistical data processing.			
13.	Inter-connection with other subjects (courses)				
14.	Detailed description of teaching and working methods for the subject	Theoretical teaching: interactive (lectures in a large group with discussion and engagement of students) Practical teaching: exercises and other forms of work in small groups Seminar work: learning using professional literature and the Internet, preparation of a seminar paper (essay/poster); presentation and discussion of the seminar work			
15.	Total available time	50 hours Theory classes: 1 hours/per week (15 hours) Practicals: 1 hours/per week (15 hours)			
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	15	
		16.2.	Practical lectures (laboratory, auditorial), seminars, teamwork: hours		

		16.3.	Practice: total hours	15
17.	Other forms of activities	17.1.	Project assignments: hours	
		17.2.	Individual tasks: hours	
		17.3.	Self-directed learning	20
18.	Conditions for receiving authorization	To take the final exam, the student must score at least 45 points from the theoretical, practical teaching, and the four continuous tests. If the student, through the continious knowledge test, did not show the adequate result and won points only for theoretical and practical teaching, he/she must approach to complete final exam. The student must have passed Chemistry and Biochemistry to take the final exam.		
19.	Assessment methods Attendance at theoretical teaching 6 -10 Activity 6 -10 Final exam 26 40			
	19.1.	Tests: points		30-60
	19.2.	Written essay/project assignment, oral or written presentation: points		
	19.3.	Final exam: points		26-60
20.	Grading criteria (points/grade)		up to 59 points	5 (five) (F)
			60 to 68 points	6 (six) (E)
			69 to 76 points	7 (seven) (D)
			77 to 84 points	8 (eight) (C)
			85 to 92 points	9 (nine) (B)
			93 to 100 points	10 (ten) (A)
21.	Method of monitoring the quality of teaching process		Report from the Self-evaluation committee and anonymous student survey	

22. Literature

22.1. Mandatory literature

No.	Author	Title	Publisher	Year
1.	Y. Pomeranz, C. E. Meloan,	*Food analysis: Theory and practise*	Aspen Publication	2000
2.	Nollet L.M.	*Handbook of food analysis*	Marcel Dekker, New York- Basel	2004
3.	Robert E	*Liquid Chromatography – Mass Spectrometry: An Introduction.*	Copyright 2003 John Wiley & Sons, Ltd.	2003

22.2. Additional literature

No.	Author	Title	Publisher	Year
1.	Miller J.C., Miller J.N. Ellis	*Statistics for analytical chemistry*	Horwood PTR, Prentice Hall, New York	1994

		2.	Frank Settle,	*Handbook for instrumental techniques in analytical chemistry*	Frank Settle,	2006
		3.	Somenath Mitra	*Sample Preparation Techniques in Analytical Chemistry*	John Wiley & Sons, Inc	2003

No. 64

Attachement no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Wild Animal Biology and Pathology**			
2.	Code	VM2023-526			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Biology and Pathology of Fish, Bees and Games			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Fifth (V)	Semester	Tenth (X)
7.	Course load expressed in ECTS credits	2.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Appointed teacher according the descision of the Teaching-Scientific Council			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course	For attending: Decision on Study Rules for first and second cycle integrated studies (undergraduate studies) and second cycle studies (postgraduate studies) at FVMS (UG 554, 26.07.2021). For passing: passed Infectious Diseases in Domestic Animals 2			
11.	Objectives of the course program (competencies) and learning outcomes	***Theory classes*** of course Biology and pathology of game have aim to introduce students with the: term and meaning of hunting, Law on hunting in R. of Macedonia, organization of hunting in Macedonia, place and role of veterinary service in hunting, types and characteristics of the hunting grounds, ways for game breeding, biological characteristics and diseases of hunting game, damages caused by game, games damages and basics of the hunting cynology. In this manner, the future doctor for veterinary medicine will be able to gain: knowledge for recognizing the specifics in manifestation of clinical and pathomorphological changes in game diseases, capability for advising and applying appropriate medication of diseases in bred game, ability for advising and taking preventative measures including promotion of optimal game health and modern hunting. ***The practicals*** of this course have aim to introduce students with systematic and categorizing of hunting game, feed and methods for supplement feeding of game, eradication of harmful game and safe removal of game corpses, hunting weapon and first aid,			

<table>
<tr><td></td><td></td><td colspan="3">hunting trophies, determination of game diseases, handling of shot game and protection of game.</td></tr>
<tr><td>12.</td><td>Detailed course content by chapter and unit with learning outcomes for each chapter</td><td colspan="3">Theoretical lectures Definition and meaning of hunting. Hunting grounds. Game breeding. Characteristics of game diseases. Biological characteristics of game birds. Game birds diseases. Biological characteristics and diseases of wild leporids and rodents. Biological characteristics of wild ruminants. Wild ruminants diseases. Biological characteristics and wild boar diseases. Biological characteristics and wild carnivores diseases. Damages made to and caused by the game. Hunting cynology.
Practical lectures
Taxonomy and categorization of hunting game. Game nutrition. Eradication of harmful game and safe removal of game corpses. Hunting weapon and first aid. Hunting trophy. Determining game’s diseases. Handling shot game. Game protection. Visiting Skopje’s Zoo. Visiting the Natural History Museum in Skopje. Visiting peasantry. Visiting breeding facility for wild ruminants. Visiting hunting ground and National park.</td></tr>
<tr><td>13.</td><td>Inter-connection with other subjects (courses)</td><td colspan="3"></td></tr>
<tr><td>14.</td><td>Detailed description of teaching and working methods for the subject</td><td colspan="3">Theory classes: interactive (lectures in large group with discussion and active participation of the students).
Practicals: practicals and other ways of work with smaller groups
Written assay: learning with use of referent textbooks and internet, preparing written assay; presentation and discussion about the written assay.</td></tr>
<tr><td>15.</td><td>Total available time</td><td colspan="3">50 hours
Theory classes: 1 hour/per week (15 hours)
Practicals: 1 hour/per week (15 hours)</td></tr>
<tr><td rowspan="3">16.</td><td rowspan="3">Forms of teaching activities</td><td>16.1.</td><td>Theoretical lectures: hours</td><td>15</td></tr>
<tr><td>16.2.</td><td>Practical lectures (laboratory, auditorial), seminars, team work: hours</td><td>15</td></tr>
<tr><td>16.3.</td><td>Practice: total hours</td><td></td></tr>
<tr><td rowspan="3">17.</td><td rowspan="3">Other forms of activities</td><td>17.1.</td><td>Project assignments: hours</td><td></td></tr>
<tr><td>17.2.</td><td>Individual tasks: hours</td><td></td></tr>
<tr><td>17.3.</td><td>Self-directed learning</td><td>20</td></tr>
<tr><td>18.</td><td>Conditions for receiving authorization</td><td colspan="3"></td></tr>
<tr><td>19.</td><td colspan="4">Assessment methods
The student is obligated for active participation in all predicted activities for gaining points which are part of the final grading.
<table>
<tr><th rowspan="2">Type of activity</th><th colspan="2">Points</th></tr>
<tr><th>minimum</th><th>maximum</th></tr>
<tr><td>Attendance on theory classes</td><td>12</td><td>15</td></tr>
<tr><td>Attendance on practicals</td><td>12</td><td>15</td></tr>
<tr><td>Written assay</td><td>6</td><td>10</td></tr>
<tr><td>First test</td><td>15</td><td>30</td></tr>
<tr><td>Second test</td><td>15</td><td>30</td></tr>
<tr><td>Total:</td><td>60</td><td>100</td></tr>
</table>
Tests (two): written</td></tr>
</table>

	First test: definition and meaning of hunting, hunting grounds, game breeding, characteristics of game diseases, biological characteristics of game birds, game birds diseases, systematic and short review of hunting game's biology, game feeding, eradication of harmful game and safe removal of game corpses, hunting weapon and first aid, hunting trophy. **Second test**: biological characteristics and diseases of wild leporids and rodents, biological characteristics of wild ruminants, wild ruminants diseases, biological characteristics and wild boar diseases, biological characteristics and carnivore's diseases, damages to and from the game, hunting cynology, determination of game's diseases, handling shot game, game protection. **Complete final exam:** Oral or written and it contents practical test and final exam.			
	19.1.	Tests: points		
	19.2.	Written essay/project assignment, oral or wrriten presentation: points		
	19.3.	Final exam: points		
20.	Grading criteria (points/grade)		up to 59 points	5 (five) (F)
			60 to 68 points	6 (six) (E)
			69 to 76 points	7 (seven) (D)
			77 to 84 points	8 (eight) (C)
			85 to 92 points	9 (nine) (B)
			93 to 100 points	10 (ten) (A)
21.	Method of monitoring the quality of teaching process		Report from the Self-evaluation committee and anonymous student survey	

22. Literature

22.1. Mandatory literature

No.	Author	Title	Publisher	Year
1. Infectious Diseases of Wild Mammals and Birds in Europe, Dolores Gavier-Widen , Edited by Anna Meredith, Edited by J. Paul Duff 2. Disease in Wild Animals : Investigation and Management, Gary A. Wobeser 3. Essentials of Disease in Wild Animals, Gary A. Wobeser 4. Wildlife Management and Conservation : Contemporary Principles and Practices, Paul R. Krausman , Edited by James W. Cain 5. Pathology of Wildlife and Zoo Animals 1st Edition, Karen Terio, Denise McAloose, Judy St. Lege 6. Foundations of Wildlife Diseases, Richard G. Botzler , Richard N. Brown.				

22.2. Additional literature

No.	Author	Title	Publisher	Year
1.				
2.				
3.				

No. 65

Attachment no. 3		**Integrated first and second cycle of studies**
1.	Program course title	**Bee Biology and Pathology**
2.	Code	VM2023-527
3.	Study program	Veterinary medicine

4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss. Cyril and Methodius University in Skopje, Department of Biology and Pathology of Fish, Bees and Games			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Fifht (V)	Semester	Tenth (X)
7.	Course load expressed in ECTS credits	2.5			
8.	Teacher (leading teacher, in case of multiple teachers)	Appointed teacher according the descision of the Teaching-Scientific Council			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course	For attending: Decision on Study Rules for first and second cycle integrated studies (undergraduate studies) and second cycle studies (postgraduate studies) at FVMS (UG 554, 26.07.2021) and authorization of all subjects from prevous summer semester.			
11.	Objectives of the course program (competencies) and learning outcomes	The theoretical classes of the course aim to introduce students to: beekeeping and its significance, the development of apidology and apitechnics, the production of honey bee products, the situation with the beekeeping sector in the Republic of North Macedonia, the concept and meaning of honey bee pathology, the systematics of bees, types and races of honey bees bred in the world and in our country, the composition of the bee colony, life of the honey bee colony during the year, reproduction of honey bees, undesirable phenomena in the honey bee colony, obtaining honey bee products, the characteristics of organic beekeeping production, diseases of honey bees and bee brood, pests and enemies of honey bees, poisoning of honey bees, application of modern medicines in beekeeping and measures for prevention, control and eradication of diseases, pests and bee poisonings. In this manner, the future doctor of veterinary medicine will be able to: acquire knowledge about basic terms in beekeeping, recognition of the main clinical and pathomorphological signs of diseases in honey bees and bee brood, give advice and apply the appropriate treatment for the diseases, give advice on taking on preventive measures including the promotion of optimal health and beekeeping production. The practicals of the course aim to introduce students to: the development and function of individual members of the honey bee colony, anatomical and physiological characteristics of honey bees, the advantages and disadvantages of different types of bee hives, the practical use of beekeeping tools and equipment, the formation of apiaries, the order of work in the apiary during the year, the clinical examination of a honey bee hive, the clinical and laboratory diagnostics of honey bee diseases and the practical application of medicines for the prevention and control of diseases of bees and bee brood.			
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	Theoretical classes: 31. Beekeeping and its importance (outcomes: understand the ecological and economic significance of beekeeping; identify the role of bees in pollination and biodiversity; explain the importance of beekeeping in agriculture and food production). 32. Honey bee systematics; types and races of bees (outcomes: classify different species and subspecies of honey bees, recognize the geographical distribution of different honey bee types).			

		33. The life of the honey bee colony during the year (outcomes: describe the annual cycle of a honey bee colony; understand how seasonal changes affect colony behavior and management). 34. Honey bee reproduction (outcomes: explain the process of queen honey bee mating and reproduction, explain the process of dividing the colonies). 35. Breeding, replacing and adding honey bee queens (outcomes: demonstrate techniques for queen rearing and introduction; evaluate when and why to replace a queen in a colony; understand the importance of genetic diversity in queen selection). 36. Undesirable phenomena in the honey bee colony (outcomes: identify and explain issues such as swarming, absconding, and laying workers; develop strategies to prevent and manage undesirable colony behaviors). 37. Bee forage and honey bee products (outcomes: identify important nectar and pollen sources for honey bees; explain the process of production of honey and other bee products). 38. Organic beekeeping (outcomes: understand the principles and practices of organic beekeeping; compare organic vs. conventional beekeeping methods; explain certification requirements for organic honey production). 39. Viral bee diseases (outcomes: understand the aetiology, transmission, pathogenesis, clinical signs, and diagnosis of viral bee diseases; learn about prevention and control strategies for viral bee diseases). 40. Bacterial bee diseases (outcomes: understand the aetiology, transmission, pathogenesis, clinical signs, and diagnosis of bacterial bee diseases; learn about treatment, prevention and control strategies for bacterial bee diseases). 41. Fungal bee diseases (outcomes: understand the aetiology, transmission, pathogenesis, clinical signs, and diagnosis of fungal bee diseases; learn about treatment, prevention and control strategies for fungal bee diseases). 42. Parasitic bee diseases (outcomes: understand the aetiology, transmission, pathogenesis, clinical signs, and diagnosis of parasitic bee diseases; learn about treatment, prevention and control strategies for parasitic bee diseases). 43. Non-infectious bee diseases (outcomes: identify nutritional deficiencies and their effects on bee health; recognize the non-infectious diseases (e.g. may-disease, dysentery); develop management strategies to prevent non-infectious diseases). 44. Anomalies of honey bees; diseases and anomalies of the honey bee queen (outcomes: recognize genetic and developmental anomalies in worker bees and queens; understand the causes and consequences of queen failure; implement strategies to maintain healthy queens and minimize anomalies). 45. Pests and enemies of honey bees and bee poisoning (outcomes: identify common predators and pests that threaten honey bee colonies; understand the effects of pesticides and other toxins on bee health; develop strategies to protect colonies from pests and chemical exposure). Practicals: 12. Members of the honey bee colony, development

		(metamorphosis) of honey bees (outcomes: identify and describe the different castes within a honey bee colony (queen, workers, drones); explain the complete life cycle and metamorphosis stages of honey bees; compare and contrast the development timelines for queens, workers, and drones). 13. Anatomy and physiology of honey bees (outcomes: describe the external and internal anatomy of adult honey bees; explain the functions of key physiological systems in honey bees (e.g., respiratory, digestive, nervous); analyze how honey bee anatomy and physiology contribute to their roles in the colony). 14. Honey bee hives and beekeeping tools and equipment (outcomes: describe the structure and components of standard beehives (e.g., Langstroth hives); compare different types of hives and their suitability for various beekeeping practices; identify and explain the use of essential beekeeping tools and protective gear). 15. Apiaries (outcomes: evaluate ideal locations and conditions for establishing an apiary; describe best practices for apiary layout and hive placement; explain the importance of proper apiary management for bee health and productivity). 16. Clinical examination of a honey bee hive (outcomes: demonstrate proper techniques for opening and inspecting a beehive; identify signs of healthy vs. unhealthy colonies during hive inspections; assess queen performance, brood patterns, and overall colony strength). 17. Order of work in the apiary during the year (outcomes: outline the seasonal tasks and management practices in beekeeping; explain the importance of timing in various beekeeping activities; develop a yearly management plan for an apiary). 18. Diagnostics of viral bee diseases (outcomes: identify major viral pathogens affecting honey bees). 19. Diagnostics of bacterial bee diseases (outcomes: identify major bacterial pathogens affecting honey bees). 20. Diagnostics of fungal bee diseases (outcomes: identify major fungal pathogens affecting honey bees). 21. Diagnostics of parasitic bee diseases (outcomes: identify major parasites affecting honey bees). 22. Application of medicines for honey bees (outcomes: explain the regulations and best practices for using medications in beekeeping; demonstrate proper techniques for administering various types of bee medications; evaluate the efficacy and potential risks of different treatment options for bee diseases). 12-15. Visit to an apiary and practical field work with honey bees (outcomes: apply theoretical knowledge to real-world apiary settings; identify common beekeeping practices; assess honey bee health in an apiary; evaluate biosecurity measures in apiaries).
13.	Inter-connection with other subjects (courses)	Microbiology 1 and 2, Parasitology and Parasitic Diseases 1 and 2, General and Special Pharmacology, Veterinary Epidemiology, Domestic Animal General Nutrition and Specific Nutrition of Domestic Animals
14.	Detailed description of teaching and working methods for the subject	Theoretical classes: interactive (lectures in large group with discussion and active participation of the students). Practicals: practical work with small groups of students. Written essay: learning with use of referent textbooks and internet, preparing written essay; presentation and discussion about the written essay.

15.	Total available time	62.5 hours			
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	15	
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours	30	
		16.3.	Practice: total hours		
17.	Other forms of activities	17.1.	Project assignments: hours		
		17.2.	Individual tasks: hours		
		17.3.	Self-directed learning	17.5	
18.	Conditions for receiving authorization	The student is responsible for actively following all the activities that earn points as part of the final assessment. The student can be excused from classes up to 30% of the total hours.			
19.	Assessment methods				
	19.1.	Tests: points		2 tests, each with min. 15, max. 30 points.	
	19.2.	Written essay/project assignment, oral or written presentation: points		min. 6, max. 10 points.	
	19.3.	Final exam: points		30-60 points.	
20.	Grading criteria (points/grade)		up to 59 points	5 (five) (F)	
			60 to 68 points	6 (six) (E)	
			69 to 76 points	7 (seven) (D)	
			77 to 84 points	8 (eight) (C)	
			85 to 92 points	9 (nine) (B)	
			93 to 100 points	10 (ten) (A)	
21.	Method of monitoring the quality of teaching process	Report from the Self-evaluation committee and anonymous student survey			

22. Literature

22.1. Mandatory literature

No.	Author	Title	Publisher	Year
1.	Terry Ryan Kane (Editor), Cynthia M. Faux (Editor)	*Honey Bee Medicine for the Veterinary Practitioner*	Wiley-Blackwell	2021
2.	Brian R. Johnson	*Honey Bee Biology*	Princeton University Press	2023
3.				

22.2. Additional literature

No.	Author	Title	Publisher	Year
1.	John Carr	*Managing Bee Health: A Practical Guide for Beekeepers*	5M Books Ltd	2021
2.	Paul Peacock	*Keeping Bees - A Complete Practical Guide*	Octopus Publishing Group ltd	2008

No. 66

Attachement no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Avian Diseases**			
2.	Code	VM2023-528			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Avian Diseases			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Fifth (V)	Semester	Tenth (X)
7.	Course load expressed in ECTS credits	6.5			
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Aleksandar Dodovski, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course	For attending: Decision on Study Rules for first and second cycle integrated studies (undergraduate studies) and second cycle studies (postgraduate studies) at FVMS (UG 554, 26.07.2021) and authorization for all subjects from previous summer semester			
11.	Objectives of the course program (competencies) and learning outcomes	***Theory classes.*** Basic aim of the course is to provide students with necessary quantum of knowledge about health and diseases in domestic poultry and other birds reared for economic purposes. Special emphasize is given to familiarization and overcoming of basic principles of farm poultry production, as well diagnostics, prevention and eradication of poultry diseases. ***Practicals.*** Aim of the practical part is to provide students with knoweldge on adequate technology of poultry production and the basics of clinical and laboratory investigation in order to achieve accurate diagnosis.			
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	***Theory classes.*** Introduction to poultry health and production. Basic principles of prevention of diseases. Viral diseases (Newcastle disease, other paramyxoviral infections, avian influenza, infectious bronchitis, infectious laryngotracheitis, fowl pox, infectious bursal disease, chicken infectious anemia, adenoviral infections, avian encephalomyelitis, viral enteric diseases, viral infections in water fowl, neoplastic diseases). Bacterial diseases (salmonellosis, campylobacteriosis, collibacilosis, pasteurellosis, infectious coryza, mycoplasmosis, clostridial diseases, chlamydiosis, staphylococcosis, streptococcisis, avian tuberculosis, erysephelas, spirochetosis). Fungal diseases (aspergillosis, other fungal disease). Parasitic diseases			

		ectoparasitosis, endoparasitosis, protosoal infections). Noninfectious diseases (nutritional diseases, vitamin defficincies). ***Practicals.*** Technology of production of parent stocks, technology in hatchery, technology of production of table egg layers, technology of production of broilers. Biosecurity measures on poultry farm. Vaccination in poultry production. Clinical and laboratory investigation of poultry. Chicken embryos as a tool in diagnostics. Laboratory methods for diagnosis of some of the OIE listed diseases. Post-mortem investigation. Farm visits.			
13.	Inter-connection with other subjects (courses)	Microbiology, Immunology, Animal hygiene, Pathophysiology, Pathology, Infectious diseases			
14.	Detailed description of teaching and working methods for the subject	Theory classes: interactive (lectures in large group with discussion and active participation of the students). Practicals: practicals and other ways of work in smaller groups. Written assay: learning using peer reviewed literature and internet resources, preparing project task (assay); presentation and discussion of the project task.			
15.	Total available time	162.5 hours Theory classes: 3 hours/per week (45 hours) Practicals: 3 hours/per week (45 hours)			
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	45	
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours	45	
17.	Other forms of activities	17.1.	Project assignments: hours	22.5	
		17.2.	Self-directed learning	50	
18.	Conditions for receiving authorization	In order to be able to take the final exam the student must have passed the exams of the following courses: Patophysiology 1 and 2, Basic Pathology and Special Veterinary Pathology			
19.	Assessment methods				
	19.1.	Attending classses		18-21	
	19.2.	Tests: points		20-40	
	19.3.	Written essay/project assignment, oral or wrriten presentation: points		7-9	
	19.4	Final exam: points		15-30	
20.	Grading criteria (points/grade)		up to 59 points	5 (five) (F)	
			60 to 68 points	6 (six) (E)	
			69 to 76 points	7 (seven) (D)	
			77 to 84 points	8 (eight) (C)	
			85 to 92 points	9 (nine) (B)	
			93 to 100 points	10 (ten) (A)	
21.	Method of monitoring the quality of teaching process	Report from the Self-evaluation committee and anonymous student survey			
22.	Literature				
	22.1.	Mandatory literature			
		No.	Author	Title	Publisher	Year
		1.	D. Swayne (Ed.)	*Diseases of Poultry, 14th Edition*	Wiley-Blackwell	2020

		2.	M. Boulianne (Ed.)	*Avian Disease Manual – 7th edition*	AAAP	2012
		3.				

No. 67

Attachement no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Ophthalmology**			
2.	Code	VM2023-529			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Surgery, Orthopedic and Opthalmology			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Fifth (V)	Semester	Tenth (X)
7.	Course load expressed in ECTS credits	1.5			
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Plamen Trojachanec, PhD Prof. Ksenija Ilievska, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course	For attending: Decision on Study Rules for first and second cycle integrated studies (undergraduate studies) and second cycle studies (postgraduate studies) at FVMS (UG 554, 26.07.2021).			
11.	Objectives of the course program (competencies) and learning outcomes	The course should encourage the students to apply their previously acquired knowledge of clinical anatomy, pathology, pathophysiology and pharmacology for diagnostics and treatment of ophthalmic diseases and fundamental treatment of ophthalmic patient. To enable the student for individual work in daily practice. In addition, student can perform individual examination, diagnosis and conservative or operative treatment of ophthalmic diseases. The course is closely related with preclinical courses, especially in Animal Anatomy 1 and 2, Animal Clinical Anatomy, Basic Pathology and Special Veterinary Pathology, as well as General Surgery and Anesthesia and Intensive Care. The course is designed to prepare students for independent, hands-on practice in veterinary ophthalmology, allowing them to manage a wide range of ophthalmic conditions in animals with confidence. The interdisciplinary approach ensures that students are well-rounded and can effectively apply their knowledge to real-world situations, from routine care to emergency management and surgical referrals.			

<table>
<tr><td>12.</td><td>Detailed course content by chapter and unit with learning outcomes for each chapter</td><td colspan="3">Anatomy of the eye. Basic principles of ophthalmic disease. Diseases of palpebrae, conjunctiva and lachrymal system. Diseases of the eye globe and orbit. Diseases of the cornea. Diseases of the uveal tract. Diseases of the lens and vitreous. Diseases of the retina and optic nerve. Disorders influenced by
intraocular pressure. Specific ophthalmological diseases. Clinical examination and handling the ophthalmic patient.</td></tr>
<tr><td>13.</td><td>Inter-connection with other subjects (courses)</td><td colspan="3"></td></tr>
<tr><td>14.</td><td>Detailed description of teaching and working methods for the subject</td><td colspan="3">Introduction with fundamentals of veterinary ophthalmology through interactive teaching based theoretical exposure of the material, discussions and preparation of written assay to encourage the students for independent work, individually or in small groups.
Practicals comprises of work in smaller groups that will enable overcoming the practical knowledge of essential ophthalmology methods and techniques.
Written assay: learning with use of referent textbooks and internet, preparing written assay; presentation and discussion about the written assay.</td></tr>
<tr><td>15.</td><td>Total available time</td><td colspan="3">37.5 hours
Theory classes: 1 hour/per week (15 hours)
Practicals 1 hour/per week (15 hours)</td></tr>
<tr><td rowspan="3">16.</td><td rowspan="3">Forms of teaching activities</td><td>16.1.</td><td>Theoretical lectures: hours</td><td>15</td></tr>
<tr><td>16.2.</td><td>Practical lectures (laboratory, auditorial), seminars, team work: hours</td><td>15</td></tr>
<tr><td>16.3.</td><td>Practice: total hours</td><td></td></tr>
<tr><td rowspan="3">17.</td><td rowspan="3">Other forms of activities</td><td>17.1.</td><td>Project assignments: hours</td><td></td></tr>
<tr><td>17.2.</td><td>Individual tasks: hours</td><td></td></tr>
<tr><td>17.3.</td><td>Self-directed learning</td><td>7.5</td></tr>
<tr><td>18.</td><td>Conditions for receiving authorization</td><td colspan="3">Students, who attend less than 40% of total theory classes, will not receive any points. Attendance between 40-70% brings 5 points, while the presence in more than 70% carries
10 points. Students, who attend less than 40% of practicals, will not receive any points. Attendance between 40-70% brings 2.5 points, while the presence in more than 70% carries 5 points.</td></tr>
<tr><td>19.</td><td colspan="4">Assessment methods
The student is obligated for actively following all planned activities that earn points as part of the final assessment.
Students, who attend less than 40% of total theory classes, will not receive any points. Attendance between 40-70% brings 5 points, while the presence in more than 70% carries
10 points. Students, who attend less than 40% of practicals, will not receive any points. Attendance between 40-70% brings 2.5 points, while the presence in more than 70% carries
5 points.

<table>
<tr><th rowspan="2">Type of activity</th><th colspan="2">Points</th></tr>
<tr><th>minimum</th><th>maximum</th></tr>
<tr><td>Attendance at theoretical lectures</td><td>6</td><td>10</td></tr>
<tr><td>Attendance at practical lectures</td><td>3</td><td>5</td></tr>
<tr><td>Oral or wrriten exam</td><td>51</td><td>85</td></tr>
</table>
</td></tr>
</table>

		Project assignament (optional)		0	5
		Total		60	100
	19.1.	Tests: points			
	19.2.	Written essay/project assignment, oral or wrriten presentation: points			
	19.3.	Final exam: points			
20.	Grading criteria (points/grade)		up to 59 points		5 (five) (F)
			60 to 68 points		6 (six) (E)
			69 to 76 points		7 (seven) (D)
			77 to 84 points		8 (eight) (C)
			85 to 92 points		9 (nine) (B)
			93 to 100 points		10 (ten) (A)
21.	Method of monitoring the quality of teaching process		Report from the Self-evaluation committee and anonymous student survey		
22.	Literature				
	22.1.	Mandatory literature			
		No.	Author	Title	Publisher	Year
		1.	Prof. Plamen Trojachanec Prof. Ksenija Ilievska	*Animal ophthalmology lectures (authorized lectures and practicals) updated every year*		
		2.	Douglas Slatter	*Fundamentals of veterinary opthalmology*	Saunders, ELSEVIER	2008
	22.2.	Additional literature			
		No.	Author	Title	Publisher	Year
		1.	Grozdanić S., Đukić S., Luzhetskiy S.,Matić M.N., Lazić T.	*Color atlas of small animal opthlamology*	Veterinary ambulance, Oculus	2021
		2.	Gelatt K.N, Plummer C.E.	*Essentials of veterinary ophthalmology*	Wiley Blackwell	2022

		3.	Douglas W. Esson, Sara Calvares	*CLINICAL ATLAS OF CANINE AND FELINE OPHTHALMIC DISEASE*	Wiley Blackwell	2022

No. 68

Attachement no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Companion Animal Clinical Practice 1**			
2.	Code	VM2023-611			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Sixth (VI)	Semester	Eleventh (XI)
7.	Course load expressed in ECTS credits	6.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Subject coordinator / Appointed teacher according the descision of the Teaching-Scientific Council			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course	For attending: Decision on Study Rules for first and second cycle integrated studies (undergraduate studies) and second cycle studies (postgraduate studies) at FVMS (UG 554, 26.07.2021).			
11.	Objectives of the course program (competencies) and learning outcomes	**Clinical practice of companion animals** is designed to provide students with practical experience in veterinary care, particularly for pets. Through small-group interactive teaching at the University Veterinary Hospital, students can develop their skills under the supervision of teachers, preparing them for independent work in clinical practice. Students will gain practical skills in reproduction, surgery, orthopedics, ophthalmology, internal medicine, infectious and parasitic diseases in companion animals, to do their clinical work in diagnosis, treatment and prevention of diseases.			
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	The teaching of this clinical subject is led by the teachers, in form of work with clinical patiens, in small groups of 3 to 5 students. Clinical teaching is carried out at the University Veterinary Hospital. While working in a small groups, students can independently perform most common diagnostic procedures, clinical examimination, taking samples for laboratory tests, to perform routine and elective surgical and reproductive procedures, and to deal with all kind of internal diseases in companion animals.			
13.	Inter-connection with other				

	subjects (courses)			
14.	Detailed description of teaching and working methods for the subject	Students engage directly with live patients allowing them to apply their theoretical knowledge,as hands-on experience that is crucial for developing the practical skills needed in veterinary practice, from diagnostics to treatment and patient management. Teachers supervise students as they perform tasks and interact with clinical patients. This ensures that students are following proper procedures, practicing safe techniques, and receiving constructive feedback to improve their skills. Students gain experience in routine veterinary work, such as performing examinations, assisting in diagnostic procedures, and participating in treatment plans. They will also experience emergency situations and learn how to manage urgent ophthalmic or other clinical cases, reinforcing their ability to think critically and make informed decisions under supervision.		
15.	Total available time	150 hours Practical teaching is divided according the hours of following subjects: Parasitology and Parasitic Diseases 1 and 2, Visual Diagnostics Methods and Physical Therapy, Internal Diseases in Companion Animals and Equines 1 and 2, General Surgery, Anestesia and Intensive Care, Soft Tissue Surgery, Orthopedic and Rehabilitation, Reproduction 1 and 2, Infectious diseases in Domestica Animals 1 and 2		
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours	150
		16.3.	Practice: total hours	
17.	Other forms of activities	17.1.	Project assignments: hours	
		17.2.	Individual tasks: hours	
		17.3.	Self-directed learning	
18.	Conditions for receiving authorization	The student gets authorisation if he/she has a minimum attendance of 70% of theoretical lectures and practical lectures and completed workbook, signed by the coordinator.		
19.	Assessment methods Final grade mark is not predicted. Acquired credits are made by evaluation of inspection protocols.			
	19.1.	Tests: points		
	19.2.	Written essay/project assignment, oral or wrriten presentation: points		
	19.3.	Final exam: points		
20.	Grading criteria (points/grade)		up to 59 points	5 (five) (F)
			60 to 68 points	6 (six) (E)
			69 to 76 points	7 (seven) (D)
			77 to 84 points	8 (eight) (C)
			85 to 92 points	9 (nine) (B)
			93 to 100 points	10 (ten) (A)
21.	Method of monitoring the quality of teaching process	Report from the Self-evaluation committee and anonymous student survey		
22.	Literature			
	22.1.	Mandatory literature		

		No.	Author	Title	Publisher	Year
		1.	Ettinger, S.J., Feldman, E.C. and Cote, E.	*Textbook of Veterinary Internal Medicine7th edition.*	Elsevier health sciences	2010
		2.	Richard W. Nelson and C. Guillermo Couto	*Small animal internal medicine 5th edition*	Elsevier	2013
		3.	Johnston S.S.. Tobias K.M.	*Veterinary surgery, 2nd edition*	Elsevier	2017
		4.	Johnson Ann L., Houlton John E.F., Vannini Ricco	*AO Principles in the Fracture management in the Dog an Cat*	Thieme	2005
		5.	Weawer, St Jean, Steiner	*Bovine surgery and lameness, 2nd edition*	Blackwell	2005
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year
		1.				
		2.				
		3.				

No. 69

Attachement no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Farm Animal Clinical Practice 1**			
2.	Code	VM2023-612			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Sixth (VI)	Semester	Eleventh (XI)

7.	Course load expressed in ECTS credits	6.0		
8.	Teacher (leading teacher, in case of multiple teacher)	Subject coordinator / Appointed teacher according the descision of the Teaching-Scientific Council		
9.	Teaching language	English		
10.	Necessary prerequisites for attending and passing the course	For attending: Decision on Study Rules for first and second cycle integrated studies (undergraduate studies) and second cycle studies (postgraduate studies) at FVMS (UG 554, 26.07.2021).		
11.	Objectives of the course program (competencies) and learning outcomes	**Clinical practice of farm animals** is designed to provide students with practical experience in veterinary care, particularly for farm animal. Through small-group interactive teaching on the field, students can develop their skills under the supervision of teachers, preparing them for independent work in clinical field practice. Students will gain practical skills in reproduction, surgery, orthopedics, internal medicine, infectious and parasitic diseases in farm animals, to do their clinical work in diagnosis, treatment and prevention of diseases.		
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	The teaching of this clinical subject is led by the teachers, in the form of work with patiens and live animals on the farm or Faculty, in small groups of 5 to 8 students. Clinical teaching is carried out on the farm as field practice.		
13.	Inter-connection with other subjects (courses)			
14.	Detailed description of teaching and working methods for the subject	Students engage directly with live patients allowing them to apply their theoretical knowledge, as hands-on experience that is crucial for developing the practical skills needed in veterinary practice, from diagnostics to treatment and patient herd health management. Teachers supervise students as they perform tasks and interact with patients. This ensures that students are following proper procedures, practicing safe techniques, and receiving constructive feedback to improve their skills. Students gain experience in routine veterinary work, such as performing examinations, assisting in diagnostic procedures, and participating in treatment plans.		
15.	Total available time	150 hours Practicals: 10 hours/per week (150 hours), in groups of 5-8 students Practical teaching is divided according the hours of following subjects: Parasitology and Parasitic Diseases 1 and 2, Visual Diagnostics Methods and Physical Therapy, Internal Diseases in Farm Animals 1 and 2, General Surgery, Anestesia and Intensive Care, Soft Tissue Surgery, Reproduction 1 and 2, Infectious Diseases in Domestic Animals 1 and 2		
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours	
		16.3.	Practice: total hours	150
17.	Other forms of activities	17.1.	Project assignments: hours	
		17.2.		

			Individual tasks: hours	
		17.3.	Self-directed learning	
18.	Conditions for receiving authorization	The student gets authorisation if he/she has a minimum attendance of 70% of theoretical lectures and practical lectures and completed workbook, signed by the coordinator.		
19.	Assessment methods Final grade mark is not predicted. Acquired credits are made by evaluation of inspection protocols.			
	19.1.	Tests: points		
	19.2.	Written essay/project assignment, oral or wrriten presentation: points		
	19.3.	Final exam: points		
20.	Grading criteria (points/grade)		up to 59 points	5 (five) (F)
			60 to 68 points	6 (six) (E)
			69 to 76 points	7 (seven) (D)
			77 to 84 points	8 (eight) (C)
			85 to 92 points	9 (nine) (B)
			93 to 100 points	10 (ten) (A)
21.	Method of monitoring the quality of teaching process		Report from the Self-evaluation committee and anonymous student survey	

22. Literature

22.1. Mandatory literature

No.	Author	Title	Publisher	Year
1.		*Internal, Surgery, Obstetrics and Infectious deseases - Performing practical training on patients under field conditions*		
2.				
3.				

22.2. Additional literature

No.	Author	Title	Publisher	Year
1.				
2.				
3.				

No. 70

Attachement no. 3		**Integrated first and second cycle of studies**
1.	Program course title	**Food Industry Enterprise Practice 1**
2.	Code	VM2023-613
3.	Study program	Veterinary medicine

4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Sixth (VI)	Semester	Eleventh (XI)
7.	Course load expressed in ECTS credits	6.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Subject coordinator / Appointed teacher according the descision of the Teaching-Scientific Council			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course	For attending: Decision on Study Rules for first and second cycle integrated studies (undergraduate studies) and second cycle studies (postgraduate studies) at FVMS (UG 554, 26.07.2021).			
11.	Objectives of the course program (competencies) and learning outcomes	Subject coordinator/Appointed teacher according the descision of the Teaching-Scientific Council			
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	The course is designed to provide students with hands-on, practical experience in the meat and dairy industries. The course focuses on the processes involved in animal food production, particularly in slaughterhouses and food processing facilities.			
13.	Inter-connection with other subjects (courses)				
14.	Detailed description of teaching and working methods for the subject	Learning through practical work in slaughterhouses and other food production enterprises in a small groups. Teaching is conducted in small groups of students, allowing for more personalized guidance and opportunities to engage actively with the instructors. Students will learn about food safety**,** hygiene standards, and quality control measures critical in the meat and dairy processing industries. They will become familiar with regulations and best practices in food processing, ensuring that products meet the required safety standards and are prepared according to established guidelines. Students will learn thorough understanding of the entire animal food supply chain, from livestock handling **to** end-product production. Students will learn about animal welfare practices in processing environments and how various factors affect the quality of food products.			
15.	Total available time	150 hours			
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours		
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours		
		16.3.	Practice: total hours		150
17.	Other forms of activities	17.1.	Project assignments: hours		
		17.2.			

			Individual tasks: hours	
		17.3.	Self-directed learning	
18.	Conditions for receiving authorization	The student gets authorisation if he/she has a minimum attendance of 70% of theoretical lectures and practical lectures and completed workbook, signed by the coordinator.		
19.	Assessment methods Final grade mark is not predicted. Acquired credits are made by evaluation of inspection protocols.			
	19.1.	Tests: points		
	19.2.	Written essay/project assignment, oral or wrriten presentation: points		
	19.3.	Final exam: points		
20.	Grading criteria (points/grade)		up to 59 points	5 (five) (F)
			60 to 68 points	6 (six) (E)
			69 to 76 points	7 (seven) (D)
			77 to 84 points	8 (eight) (C)
			85 to 92 points	9 (nine) (B)
			93 to 100 points	10 (ten) (A)
21.	Method of monitoring the quality of teaching process		Report from the Self-evaluation committee and anonymous student survey	

22. Literature

22.1. Mandatory literature

No.	Author	Title	Publisher	Year
1.				
2.				
3.				

22.2. Additional literature

No.	Author	Title	Publisher	Year
1.				
2.				
3.				

No. 71

Attachement no. 3		**Integrated first and second cycle of studies**
1.	Program course title	**Companion Animal Clinical Practice 2**
2.	Code	VM2023-621
3.	Study program	Veterinary medicine
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje
5.	Degree of education (first,	Integrated first and second cycle of studies

	second, third cycle)				
6.	Academic year / semester	Year	Sixth (VI)	Semester	Twelvth (XII)
7.	Course load expressed in ECTS credits	5.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Subject coordinator / Appointed teacher according the descision of the Teaching-Scientific Council			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course	For attending: Decision on Study Rules for first and second cycle integrated studies (undergraduate studies) and second cycle studies (postgraduate studies) at FVMS (UG 554, 26.07.2021).			
11.	Objectives of the course program (competencies) and learning outcomes	Clinical practice of companion animals is designed to provide students with practical experience in veterinary care, particularly for pets. Through small-group interactive teaching at the University Veterinary Hospital, students can develop their skills under the supervision of experienced educators, preparing them for independent work in clinical practice. Students will gain practical skills in reproduction, surgery, orthopedics, ophthalmology, internal medicine, infectious and parasitic diseases in companion animals, to do their clinical work in diagnosis, treatment and prevention of diseases.			
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	The teaching of this clinical subject is led by the teachers, in the form of work with clinical patiens, in small groups of 3 to 5 students. Clinical teaching is carried out at the University Veterinary Hospital. While working in a small groups, students can independently perform most common diagnostic procedures, clinical examimination, taking samples for laboratory tests, to perform routine and elective surgical and reproductive procedures, and to deal with all kind of internal diseases in companion animals.			
13.	Inter-connection with other subjects (courses)				
14.	Detailed description of teaching and working methods for the subject	Students engage directly with live patients allowing them to apply their theoretical knowledge,as hands-on experience that is crucial for developing the practical skills needed in veterinary practice, from diagnostics to treatment and patient management. Teachers supervise students as they perform tasks and interact with clinical patients. This ensures that students are following proper procedures, practicing safe techniques, and receiving constructive feedback to improve their skills. Students gain experience in routine veterinary work, such as performing examinations, assisting in diagnostic procedures, and participating in treatment plans. They will also experience emergency situations and learn how to manage urgent ophthalmic or other clinical cases, reinforcing their ability to think critically and make informed decisions under supervision.			
15.	Total available time	125 hours Practical teaching is divided according the hours of following subjects: Parasitology and Parasitic Diseases 1 and 2, Visual Diagnostics Methods and Physical Therapy, Internal Diseases in Companion Animals and Equines 1 and 2, General Surgery, Anestesia and Intensive care, Soft Tissue Surgery, Orthopedics and			

		Rehabilitation		
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours	
		16.3.	Practice: total hours	125
17.	Other forms of activities	17.1.	Project assignments: hours	
		17.2.	Individual tasks: hours	
		17.3.	Self-directed learning	
18.	Conditions for receiving authorization	The student gets authorisation if he/she has a minimum attendance of 70% of theoretical lectures and practical lectures and completed workbook, signed by the coordinator.		
19.	Assessment methods Final grade mark is not predicted. Acquired credits are made by evaluation of inspection protocols.			
	19.1.	Tests: points		
	19.2.	Written essay/project assignment, oral or wrriten presentation: points		
	19.3.	Final exam: points		
20.	Grading criteria (points/grade)		up to 59 points	5 (five) (F)
			60 to 68 points	6 (six) (E)
			69 to 76 points	7 (seven) (D)
			77 to 84 points	8 (eight) (C)
			85 to 92 points	9 (nine) (B)
			93 to 100 points	10 (ten) (A)
21.	Method of monitoring the quality of teaching process		Report from the Self-evaluation committee and anonymous student survey	

22. Literature

22.1. Mandatory literature

No.	Author	Title	Publisher	Year
1.	Ettinger, S.J., Feldman, E.C. and Cote, E.	*Textbook of Veterinary Internal Medicine7th edition.*	Elsevier health sciences	2010
2.	Richard W. Nelson and C. Guillermo Couto	*Small animal internal medicine 5th edition*	Elsevier	2013
3.	Johnston S.S.. Tobias K.M.	*Veterinary surgery, 2nd edition*	Elsevier	2017
4.	Johnson Ann L., Houlton John E.F., Vannini Ricco	*AO Principles in the Fracture management in the Dog an Cat*	Thieme	2005

		5.	Weawer, St Jean, Steiner	*Bovine surgery and lameness, 2nd edition*	Blackwell	2005
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year
		1.				
		2.				
		3.				

No. 72

Attachement no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Farm Animal Clinical Practice 2**			
2.	Code	VM2023-612			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Sixth (VI)	Semester	Twelve (XI
7.	Course load expressed in ECTS credits	5.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Subject coordinator/Appointed teacher according the descision of the Teaching-Scientific Council			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course	For attending: Decision on Study Rules for first and second cycle integrated studies (undergraduate studies) and second cycle studies (postgraduate studies) at FVMS (UG 554, 26.07.2021).			
11.	Objectives of the course program (competencies) and learning outcomes	**Clinical practice of farm animals** is designed to provide students with practical experience in veterinary care, particularly for farm animal. Through small-group interactive teaching on the field, students can develop their skills under the supervision of teachers, preparing them for independent work in clinical field practice. Students will gain practical skills in reproduction, surgery, orthopedics, internal medicine, infectious and parasitic diseases in farm animals, to do their clinical work in diagnosis, treatment and prevention of diseases.			
12.	Detailed course content by chapter	The teaching of this clinical subject is led by the teachers, in the			

	and unit with learning outcomes for each chapter	form of work with patiens and live animals on the farm or Faculty, in small groups of 5 to 8 students. Clinical teaching is carried out on the farm as field practice.		
13.	Inter-connection with other subjects (courses)			
14.	Detailed description of teaching and working methods for the subject	Students engage directly with live patients allowing them to apply their theoretical knowledge, as hands-on experience that is crucial for developing the practical skills needed in veterinary practice, from diagnostics to treatment and patient herd health management.Teachers supervise students as they perform tasks and interact with patients. This ensures that students are following proper procedures, practicing safe techniques, and receiving constructive feedback to improve their skills. Students gain experience in routine veterinary work, such as performing examinations, assisting in diagnostic procedures, and participating in treatment plans.		
15.	Total available time	125 hours Practicals, 10 hours/per week (150 hours), in groups of 5-8 students Practical teaching is divided according the hours of following subjects: Parasitology and Parasitic Diseases 1 and 2, Visual Diagnostics Methods and Physical Therapy, Internal Diseases in Farm Animals 1 and 2, General Surgery, Anestesia with intensive care, Soft Tissue Surgery, Reproduction 1 and 2, Herd Health Management		
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours	
		16.3.	Practice: total hours	125
17.	Other forms of activities	17.1.	Project assignments: hours	
		17.2.	Individual tasks: hours	
		17.3.	Self-directed learning	
18.	Conditions for receiving authorization	The student gets authorisation if he/she has a minimum attendance of 70% of theoretical lectures and practical lectures and completed workbook, signed by the coordinator.		
19.	Assessment methods Final grade mark is not predicted. Acquired credits are made by evaluation of inspection protocols.			
	19.1.	Tests: points		
	19.2.	Written essay/project assignment, oral or wrriten presentation: points		
	19.3.	Final exam: points		
20.	Grading criteria (points/grade)	up to 59 points		5 (five) (F)
		60 to 68 points		6 (six) (E)
		69 to 76 points		7 (seven) (D)
		77 to 84 points		8 (eight) (C)
		85 to 92 points		9 (nine) (B)
		93 to 100 points		10 (ten) (A)
21.	Method of monitoring the quality of teaching process	Report from the Self-evaluation committee and anonymous student survey		
22.	Literature			

	22.1.	Mandatory literature				
		No.	Author	Title	Publisher	Year
		1.		*Internal, Surgery, Obstetrics and Infectious deseases - Performing practical training on patients under field conditions*		
		2.				
		3.				
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year
		1.				
		2.				
		3.				

No. 73

Attachement no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Food Industry Enterprise Practice 2**			
2.	Code	VM2023-613			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Sixth (VI)	Semester	Twelvth (XII)
7.	Course load expressed in ECTS credits	5.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Subject coordinator / Appointed teacher according the descision of the Teaching-Scientific Council			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course	For attending: Decision on Study Rules for first and second cycle integrated studies (undergraduate studies) and second cycle studies (postgraduate studies) at FVMS (UG 554, 26.07.2021).			
11.	Objectives of the course program	Subject coordinator/Appointed teacher according the descision			

	(competencies) and learning outcomes	of the Teaching-Scientific Council		
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	The course is designed to provide students with hands-on, practical experience in the meat and dairy industries. The course focuses on the processes involved in animal food production**,** particularly in slaughterhouses and food processing facilities.		
13.	Inter-connection with other subjects (courses)			
14.	Detailed description of teaching and working methods for the subject	Learning through practical work in slaughterhouses and other food production enterprises in a small groups. Teaching is conducted in small groups of students, allowing for more personalized guidance and opportunities to engage actively with the instructors. Students will learn about food safety**,** hygiene standards, and quality control measures critical in the meat and dairy processing industries. They will become familiar with regulations and best practices in food processing, ensuring that products meet the required safety standards and are prepared according to established guidelines. Students will learn thorough understanding of the entire animal food supply chain, from livestock handling to end-product production**.** Students will learn about animal welfare practices in processing environments and how various factors affect the quality of food products.		
15.	Total available time	125 hours		
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours	
		16.3.	Practice: total hours	125
17.	Other forms of activities	17.1.	Project assignments: hours	
		17.2.	Individual tasks: hours	
		17.3.	Self-directed learning	
18.	Conditions for receiving authorization	The student gets authorisation if he/she has a minimum attendance of 70% of theoretical lectures and practical lectures and completed workbook, signed by the coordinator.		
19.	Assessment methods Final grade mark is not predicted. Acquired credits are made by evaluation of inspection protocols.			
	19.1.	Tests: points		
	19.2.	Written essay/project assignment, oral or wrriten presentation: points		
	19.3.	Final exam: points		
20.	Grading criteria (points/grade)	up to 59 points	5 (five) (F)	
		60 to 68 points	6 (six) (E)	
		69 to 76 points	7 (seven) (D)	
		77 to 84 points	8 (eight) (C)	
		85 to 92 points	9 (nine) (B)	
		93 to 100 points	10 (ten) (A)	
21.	Method of monitoring the quality of teaching process	Report from the Self-evaluation committee and anonymous student survey		

22.	Literature					
	22.1.	Mandatory literature				
		No.	Author	Title	Publisher	Year
		1.				
		2.				
		3.				
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year
		1.				
		2.				
		3.				

No. 74

Attachement no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Elective practical traininig**			
(	Code	VM2023-624			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Sx (VI)	Semester	Twelve (XII)
7.	Course load expressed in ECTS credits	6.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Subject coordinator/Appointed teacher according the descision of the Teaching-Scientific Council			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course	For attending: Decision on Study Rules for first and second cycle integrated studies (undergraduate studies) and second cycle studies (postgraduate studies) at FVMS (UG 554, 26.07.2021).			
11.	Objectives of the course program (competencies) and learning outcomes	**External Practical Training** is designed to give students direct, hands-on experience in a veterinary setting, where they will work closely with veterinary practitioners and learn about the day-to-day responsibilities in veterinary practice. The studens during the practice will work directly under the supervision of			

		veterinary practitioners, allowing them to gain valuable real-world experience. They wull become familiar with the daily responsibilities of veterinary practitioners, such as conducting consultations, diagnosing conditions, performing treatments, and managing patient care. During the external practice, students are expected to demonstrate a suitable level of knowledge and apply relevant skills in real veterinary situations.This includes the ability to recognize common diseases, communicate with clients, manage animal health care, and carry out basic procedures, depending on the scope of the practice. The practice is mainly individual in nature, meaning that students will work independently with a variety of **patients** (animals), but always under the guidance of an authorized veterinary practitioner**.** This hands-on approach helps students develop confidence and competence in managing different types of cases, whether routine or emergency, and dealing with different animal species. All work is conducted under the supervision of a licensed veterinary professional, ensuring that students receive guidance, feedback, and the opportunity to ask questions while learning in a real clinical environment.
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	The practice is carried out without direct supervision by the FVMS. However, students are expected to work under the guidance of a veterinary practitioner who is authorized by the faculty. Students will gain exposure to the day-to-day responsibilities of a veterinary practitioner and have the opportunity to apply their knowledge in a professional setting. During the practice students are required to record all activities in a work book. This book serves as a documentation of their experience and progress throughout the practice. The work book is submitted to the coordinato**r** for review, allowing the faculty to track the student's activities, learning outcomes, and overall performance during the internship. At the end of the pactice, the veterinary practitioner who supervised the student will fill out a confirmation of the activity for each candidate, verifying the student's participation and progress. This confirmation is then submitted to the coordinator to confirm the completion of the internship and the student's readiness for graduation. During the praxctice, students are expected to work independently, gaining hands-on experience in various aspects of veterinary practice.
13.	Inter-connection with other subjects (courses)	
14.	Detailed description of teaching and working methods for the subject	The internship/pracitce can be carried out after completing the 11th semester of the veterinary program, indicating that students have acquired the necessary theoretical knowledge and clinical skills up to that point. The internship is a **requirement for graduation**, meaning that students must successfully complete it, to be eligible to graduate.

15.	Total available time	150 hours			
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours		
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours		
		16.3.	Practice: total hours		150
17.	Other forms of activities	17.1.	Project assignments: hours		
		17.2.	Individual tasks: hours		
		17.3.	Self-directed learning		
18.	Conditions for receiving authorization	The student gets authorisation if he/she has a minimum attendance of 70% of theoretical lectures and practical lectures and completed workbook, signed by the coordinator and mentor			
19.	Assessment methods				
	19.1.	Tests: points			
	19.2.	Written essay/project assignment, oral or wrriten presentation: points			
	19.3.	Final exam: points			
20.	Grading criteria (points/grade)		up to 59 points		5 (five) (F)
			60 to 68 points		6 (six) (E)
			69 to 76 points		7 (seven) (D)
			77 to 84 points		8 (eight) (C)
			85 to 92 points		9 (nine) (B)
			93 to 100 points		10 (ten) (A)
21.	Method of monitoring the quality of teaching process		Report from the Self-evaluation committee and anonymous student survey		

22.	Literature					
	22.1.	Mandatory literature				
		No.	Author	Title	Publisher	Year
		Acquired knowledge and literature from basic, preclinical and clinical subjects				
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year
		1.				
		2.				
		3.				

ANEX NO.3

ELECTIVE SUBJECTS

Attachement no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Introduction to English Veterinary Terminology 1**			
2.	Code	VM2023-01			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	First (I)	Semester	Second (II)
7.	Course load expressed in ECTS credits	2.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Milan Damjanoski, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course				
11.	Objectives of the course program (competencies) and learning outcomes	The course Introduction to English Veterinary Terminology 1 is designed to familiarize students with the specialized language used in veterinary medicine and to enhance their ability to use English throughout their veterinary studies. Upon successfully completing the course, students will be able to: recognize the specific language register used in veterinary medicine, understand the principles of scientific term formation, to identify technical terms across various fields of veterinary medicine, to independently apply a wide range of scientific terms in relevant contexts, and to gain a foundational understanding of the structure of the veterinary study program.			
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	The course is designed to introduce the students to principles of word formation in veterinary English terminology, in order to develop understanding and ability to use a wide range of technical and medical terms. Besides providing training in reading scientific and professional literature the course also aims to enable students to achieve general progress in verbal understanding and Information literacy.			
13.	Inter-connection with other subjects (courses)				
14.	Detailed description of teaching and working methods for the subject	Introduction to veterinary terminology. English as a means of global communication. General and basic English/professional English in veterinary medicine (specific terminology, specific grammatical structures). Analysis of terms pertaining to veterinary profession: Branches of veterinary medicine; Veterinary education worldwide;			

		Career opportunities (veterinary practice, public health, industries). Dictionaries and vocabulary building: Types of dictionaries; Dictionary skills; Key words. Collocations and idioms. Word formation in specialised veterinary medical terminology: Understanding the basic components of veterinary terms (roots, prefixes, and suffixes). Prefixation and suffixation - Learning how prefixes and suffixes modify the meanings of root words in veterinary terminology. Compound words - analyzing compound words commonly used in veterinary medicine (e.g., "heartworm," "blood pressure"). Analysis of the specialized terminology and basic features of scientific text. Topics Covered**:** Characteristics of Living Beings (Introduction to key terms related to life forms, such as metabolism, reproduction, and growth), Organisation of Living Beings: Cells (Exploring the terminology related to cell structure, functions, and processes), Tissues, Organs, Organ Systems, and Organism**:** Analysis of terms related to the hierarchical structure of living organisms, from tissues to systems.			
15.	Total available time	50 hours Seminars/practicals: 2 hours/per week (30 hours)			
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours		
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours		30
		16.3.	Practice: total hours		
17.	Other forms of activities	17.1.	Project assignments: hours		20
		17.2.	Individual tasks: hours		
		17.3.	Self-directed learning		
18.	Conditions for receiving authorization				
19.	Assessment methods Continual asssesment: in-class writing activities, homework.				
	19.1.	Tests: points			
	19.2.	Written essay/project assignment, oral or wrriten presentation: points			
	19.3.	Final exam: points			Students can take final exam in case they have earned minimum number of points for each evaluated element
20.	Grading criteria (points/grade)		up to 59 points		5 (five) (F)
			60 to 68 points		6 (six) (E)
			69 to 76 points		7 (seven) (D)
			77 to 84 points		8 (eight) (C)
			85 to 92 points		9 (nine) (B)
			93 to 100 points		10 (ten) (A)
21.	Method of monitoring the quality of teaching process	Report from the Self-evaluation committee and anonymous student survey			
22.	Literature				
	22.1.	Mandatory literature			
		No.	Author	Title	Publisher	Year

		Cochran P. (1991). Student's guide to Veterinary Medical Terminology. St. Louis, Mosby. *Cox, K. & Hill, D. (2007). Preliminary English for Academic Purposes. Longman.* *McBride, D.E. (2002). Learning Veterinary Terminology. Mosby.* *McCarthy, M & O'Dell, F. (2008). Academic Vocabulary in Use. Vocabulary Reference and Practice. Self-study and Classroom Use. Cambridge: CUP.* *McCormack, J. (2005). English for Academic Study. Garnet Publishing Ltd. Garnet Education.*
	22.2.	Additional literature

No.	Author	Title	Publisher	Year
Introduction to English Veterinary Terminology I - reading materials (part I)				

Attachement no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Introduction to English Veterinary Terminology 2**			
2.	Code	VME2023-02			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Second (II)	Semester	Third (III)
7.	Course load expressed in ECTS credits	2.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Milan Damjanoski, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course				

11.	Objectives of the course program (competencies) and learning outcomes	The aim of this course is to deepen students' understanding of the language register specific to veterinary medicine, focusing particularly on the technical terminology commonly found in professional literature within the field. The course will help students to develop a thorough knowledge of the structural patterns and linguistic tools used to achieve cohesion in scientific texts. In addition to training students in reading and interpreting scientific and professional literature, the course also aims to enhance theirvwritten and oral language skills, ensuring they can effectively communicate within the veterinary context. After completing the course student will be able to: • effectively recognise a number of technical and scientific terms used in various fields of veterinary medicine • independently use a number of scientific terms in a given context • understand structure of scientific text • recognise various types of cohesive devices used to express relations between text elements • actively use some cohesive devices in a text to achieve text cohesion • increase scope of general verbal understanding
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	This course is structured to enhance students' understanding and use of professional terminology in the context of veterinary medicine. Emphasis is placed on analyzing technical and academic texts, developing language skills for both written and oral communication, and mastering cohesive devices that ensure clarity and coherence in scientific writing. Through focused topics such as organ systems, genetics, species diversity, and disease processes, students will gain the linguistic tools necessary to engage with veterinary science at a professional level.
13.	Inter-connection with other subjects (courses)	
14.	Detailed description of teaching and working methods for the subject	1. Advanced Veterinary Terminology and Language Use in Scientific Texts: Analysis of Professional Terminology in Technical and Academic Texts; Physical Description: Exploring the use of terminology related to the physical characteristics of organisms, with a focus on veterinary applications. 2. Topics: Organs and Organ Systems: In-depth analysis of terms related to the structure and function of organs and organ systems in animals, including the skeletal system. Skeletal System: Terminology specific to the structure and functions of bones, joints, and associated tissues in various animal species. 3. Basic Terms in Genetics and Classifications.Basic Terms in Genetics: Understanding terminology related to heredity, genetic traits, and inheritance patterns in animals. Classifications: Key terminology used in biological and veterinary classification systems, including the classification of genes, chromosomes, and inherited diseases. 4. Topics: Species Diversity and Taxonomic Classifications. Species Diversity: Terminology for different species of animals and their biological characteristics.

		Taxonomic Classifications: Understanding terms related to the classification of animals, including genus, species, and other taxonomic ranks in veterinary science. 5. Graphical Presentation of Data: Understanding and using graphical tools (charts, graphs, tables) to present data related to veterinary research, species, and other biological variables. 6. Topic: Ecology and Endangered Species: Ecology: Terminology related to animal habitats, ecosystems, and the interrelationships between species. Endangered Species: Vocabulary related to species at risk, conservation efforts, and legal classifications. 7. Usage of Cohesive Devices in Technical and Academic Texts Cohesive Devices: Understanding and using linguistic tools (e.g., transitions, conjunctions, reference words) that contribute to the coherence and flow of scientific writing. Description of Processes and Sequences of Events: Learning to describe biological and veterinary processes clearly, such as developmental cycles and organ function. 8. Topics: Developmental Cycles in Some Animal Species and Digestive System of Ruminants Developmental Cycles: Terminology related to the life cycles of various animal species, focusing on their development stages. Digestive System of Ruminants: Analysis of the specialized terminology used to describe the digestive processes of ruminants (e.g., cows, sheep, goats). 9. Cause-and-Effect Relationships Etiology and Pathogenesis of Diseases: Exploring terms related to the causes (etiology) and progression (pathogenesis) of diseases in animals, with a focus on veterinary pathology. 10. Contrasting and Comparing Topic: Cattle Breeds: Understanding terminology used to describe different breeds of cattle, including differences in anatomy, physiology, and characteristics.		
15.	Total available time	50 hours Seminars/practicals: 2 hours/per week (30 hours)		
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours	30
		16.3.	Practice: total hours	
17.	Other forms of activities	17.1.	Project assignments: hours	20
		17.2.	Individual tasks: hours	
		17.3.	Self-directed learning	
18.	Conditions for receiving authorization			
19.	Assessment methods Continual asssesment: in-class writing activities, homework.			
	19.1.	Tests: points		
	19.2.	Written essay/project assignment, oral or wrriten presentation: points		
	19.3.	Final exam: points		Students can take final exam in case they have earned minimum number of points

				for each evaluated element
20.	Grading criteria (points/grade)		up to 59 points	5 (five) (F)
			60 to 68 points	6 (six) (E)
			69 to 76 points	7 (seven) (D)
			77 to 84 points	8 (eight) (C)
			85 to 92 points	9 (nine) (B)
			93 to 100 points	10 (ten) (A)
21.	Method of monitoring the quality of teaching process		Report from the Self-evaluation committee and anonymous student survey	

22. Literature

22.1. Mandatory literature

No.	Author	Title	Publisher	Year
Cochran P. (1991). Student's Guide to Veterinary Medical Terminology. St Louis, Mosby. *McBride, D.E. (2002). Learning Veterinary Terminology. Mosby.* *McCarthy, M; O'Dell, F (2008). Academic Vocabulary in Use. Vocabulary reference and practice. Self-study and Classroom Use. Cambridge: CUP.* *McCormack, J. (2005). English for Academic Study. Garnet Publishing Ltd.* *Garnet Education. Porter. D & C Black (2007). Check your Vocabulary for Academic English. A & C Black Publishers Ltd*				

22.2. Additional literature

No.	Author	Title	Publisher	Year
Introduction to English Veterinary Terminology 2 - reading materials (part II)				

Attachment no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Introduction to Veterinary Medicine**			
2.	Code	VME2023-03			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss. Cyril and Methodius University in Skopje			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	First (II)	Semester	Third (III)
7.	Course load expressed in ECTS credits	2.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Toni Dovenski, PhD			

9.	Teaching language	English		
10.	Necessary prerequisites for attending and passing the course	None		
11.	Objectives of the course program (competencies) and learning outcomes	The aim of the course is to introduce students to the concept and meaning of veterinary medicine, along with a deeper understanding of the veterinary profession both globally and in our country. Students will explore the fundamental principles of veterinary science, its role in animal health, and its impact on public health and the environment. The course will also highlight the history, development, and current trends in veterinary practices, including the challenges and opportunities faced by veterinarians worldwide. Additionally, students will gain a comprehensive understanding of the veterinary medicine and its vital importance in society.		
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	Definition, subject and role of veterinary medicine and veterinary profession. Veterinary medicine as a profession. Historic development of veterinary and veterinary medicine. Development of veterinary education. History od veterinary medicine in Macedonia. Study of Faculty of veterinary medicine in Skopje. Veterinary enterprises and possibility of imployement of doctors of veterinary medicine.		
13.	Inter-connection with other subjects (courses)			
14.	Detailed description of teaching and working methods for the subject	Theory classes: lectures in large group Written assay: learning with use of referent textbooks and internet, preparing written assay.		
15.	Total available time	50 hours Theory classes: lectures in large group Written assay: learning with use of referent textbooks and internet, preparing written assay		
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	15
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours	
		16.3.	Practice: total hours	
17.	Other forms of activities	17.1.	Project assignments: hours	
		17.2.	Individual tasks: hours	35
		17.3.	Self-directed learning	
18.	Conditions for receiving authorization			
19.	Assessment methods			
	19.1.	Tests: points	min.20 max 85 points	
	19.2.	Written essay/project assignment, oral or wrriten presentation: points		
	19.3.	Final exam: points		
20.	Grading criteria (points/grade)	up to 59 points	5 (five) (F)	
		60 to 68 points	6 (six) (E)	
		69 to 76 points	7 (seven) (D)	
		77 to 84 points	8 (eight) (C)	
		85 to 92 points	9 (nine) (B)	
		93 to 100 points	10 (ten) (A)	
21.	Method of monitoring the quality of teaching process	Report from the Self-evaluation committee and anonymous student survey		
22.	Literature			

	22.1.	Mandatory literature				
		No.	Author	Title	Publisher	Year
		Materials prepared by the course teacher Internet				
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year
		1.	Bruce Vivash Jones	*THE HISTORY OF VETERINARY MEDICINE AND THE ANIMAL HUMAN RELATIONSHIP*	5M Books Ltd, UK	2021
		2.		*Literature from internet of students free choice for writing a project essay*		

Attachment no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Chemistry of Natural Compounds**			
2.	Code	VME2023-04			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Chemistry			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year/semester	Year	Second (II)	Semester	Third (III)
7.	Course load expressed in ECTS credits.	2.0			
8.	Teacher (leading teacher, in case of multiple teachers)	Prof. Zehra Hajrulai –Musliu, PhD Assist. Prof. Risto Uzunov, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course				

<table>
<tr><td>11.</td><td>Objectives of the course program (competencies) and learning outcomes</td><td colspan="3">The subject Chemistry of natural compounds has aim to familiarize students with the essential characteristics of natural compounds that are an integral part of the food, or are present in it.</td></tr>
<tr><td>12.</td><td>Detailed course content by chapter and unit with learning outcomes for each chapter</td><td colspan="3">Content of the subject program
Seminars
A brief overview of natural organic compounds. Origin and diversity of natural organic compounds. General about the methods for their isolation: crystallization, chromatographic methods, extraction methods, distillation with water vapor, etc. Glycosides. Formation and hydrolysis of glycosides. Activation and splicing-synthesis of peptides of the solid phase. Some specific linear and cyclic peptides and proteins. Terpenoids. General roads of biogenesis. Determination of the structure of terpenoids. Monoterpenoids. Sesquiterpenoids. Diterpenoids.
Triterpenoids. Tetraterpenoids. Polyisoprenoids. Saponins. Phytosterols. Stereochemistry, biosynthesis, chemical syntheses, and transformations. Lipids. Structure of fatty acids. Biosynthesis. Chemical syntheses. Prostaglandins. Structures, biosynthesis, and syntheses. Thromboxanes and leukotrienes. Polyphenols. Structural types. Presence in nature. Isolation and structure determination. Biosynthesis. Laboratory synthesis. Alkaloids. Structural characteristics. Presence in nature. Isolation and structure determination. Biosynthesis. Alkaloids from ornithine and lysine. Phenylalanine and tyrosine alkaloids. Tryptophan alkaloids. Synthesis of alkaloids. Plant pigments.
Practical teaching
Chromatographic techniques. Continuous extraction of natural material. Isolation of lactose from milk. Isolation of glycosides from natural material. Peroxidation of animal fats. Extraction of ethereal oils. Isolation of phenolic compounds from grapes. Alkaloid Extraction: Piperine from paprika. Nicotine from tobacco, caffeine from coffee. Plant pigments: isolation of beta-carotene from carrot.</td></tr>
<tr><td>13.</td><td>Inter-connection with other subjects (courses)</td><td colspan="3">The subjects is closely connected with all subjects up to VIII semester</td></tr>
<tr><td>14.</td><td>Detailed description of teaching and working methods for the subject</td><td colspan="3">Theoretical teaching: interactive (lectures in a large group with discussion and engagement of students)
Practical teaching: exercises and other forms of work in small groups
Seminar work: learning using professional literature and the Internet, preparation of a seminar paper (essay/poster); presentation and discussion of the seminar work</td></tr>
<tr><td>15.</td><td>Total available time</td><td colspan="3">50 hours
Theory classes: 1 hour/per week (15 hours)
Practicals: 1 hour/per week (15 hours)</td></tr>
<tr><td rowspan="3">16.</td><td rowspan="3">Forms of teaching activities</td><td>16.1.</td><td>Theoretical lectures: hours</td><td>15</td></tr>
<tr><td>16.2.</td><td>Practical lectures (laboratory, auditorial), seminars, teamwork: hours</td><td></td></tr>
<tr><td>16.3.</td><td>Practice: total hours</td><td>15</td></tr>
<tr><td rowspan="3">17.</td><td rowspan="3">Other forms of activities</td><td>17.1.</td><td>Project assignments: hours</td><td></td></tr>
<tr><td>17.2.</td><td>Individual tasks: hours</td><td></td></tr>
<tr><td>17.3.</td><td>Self-directed learning</td><td>20</td></tr>
<tr><td>18.</td><td>Conditions for receiving authorization</td><td colspan="3">To take the final exam, the student must score at least 45 points from the theoretical, practical teaching, and the four continuous tests. Suppose the student, through the constant knowledge check, did not show the result of one knowledge check and won points only for theoretical and practical teaching. In that case, he approaches a complete final exam.</td></tr>
</table>

		The student must have passed Chemistry and Biochemistry to take the final exam.			
19.	Assessment methods				
	19.1.	Tests: points			Min. 30 max. 60
	19.2.	Written essay/project assignment, oral or written presentation: points			Attendance at seminars 12- 15 Presence and activity (knowledge) of practical teaching 12- 15 Seminar Paper 6 -10 Continuous checks (two) 15(x2)=30 30(x2)=60
	19.3.	Final exam: points			Not predicted
20.	Grading criteria (points/grade)		up to 59 points		5 (five) (F)
			60 to 68 points		6 (six) (E)
			69 to 76 points		7 (seven) (D)
			77 to 84 points		8 (eight) (C)
			85 to 92 points		9 (nine) (B)
			93 to 100 points		10 (ten) (A)
21.	Method of monitoring the quality of teaching process		Report from the Self-evaluation committee and anonymous student survey		

22. Literature

22.1. Mandatory literature

No.	Author	Title	Publisher	Year
1.	J. Mann, R.S. Davidson, J.B. Hobbs, D.V. Banthorp, J.B. Harborne	*Natural products their chemistry and biological significance*	Longman, London	1994
2.	M. Miloš, P.M. Dewick	*Medicinal natural products - a biosynthetic approach*	John Wiley & Sons, New York	1997
3.	Sujata V. Bhat, B.A. Nagasampagi, Meenakshi Sivakumar	*Chemistry of Natural Products*	Springer Science & Business Media,	2005

22.2. Additional literature

No.	Author	Title	Publisher	Year
1.	R. H. Thomson	*The Chemistry of Natural Products*	Springer	2012

Attachment no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Exotic Animal Physiology**			
2.	Code	VME2023-05			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine - Skopje, Ss. Cyril and Methodius University in Skopje Department of Functional Morphology – Animal Physiology			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Second (II)	Semester	Third (III)
7.	Course load expressed in ECTS credits	2.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Vladimir Petkov, PhD, DVM Asst. Prof. Martin Nikolovski, PhD, DVM			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course	Course attendance: Enrolled course in Animal Physiology 1 Course passing: Minimum points from seminar attendance and activity, minimum points from written essay and oral presentation, and minimum points from the final exam			
11.	Objectives of the course program (competencies) and learning outcomes	The course aims to enable students to integrate knowledge from Animal Physiology 1 and 2 by applying fundamental physiological principles to various types of exotic animals. It covers the basic physiological mechanisms of exotic animals in both aquatic and terrestrial environments, considering a wide range of temperature, atmospheric, and climatic influences.			
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	1. Physiology of amphibians; 2. Physiology of reptiles; 3. Physiology of turtles; 4. Physiology of lizards; 5. Physiology of snakes; 6. Physiology of exotic birds; 7. Physiology of rabbits; 8. Physiology of guinea pigs; 9. Physiology of rats; 10. Physiology of hamsters; 11. Physiology of weasels.			
13.	Inter-connection with other subjects (courses)	Cell biology, Biochemistry, Histology and Embryology 1 and 2, Animal Anatomy 1 and 2, Pathophysiology 1 and 2, Domestic Animal General Nutrition, Clinical Biochemistry, Animal Behavior and Welfare, General and Special Pharmacology			
14.	Detailed description of teaching and working methods for the subject	Seminars: Interactive discussion on the physiology of different exotic animal species (oral presentations) Self-directed learning: teaching materials (textbooks, scientific and professional papers) Independent activity: analyzing scientific and professional papers, and writing seminar papers.			
15.	Total available time	50 hours Theory classes: 2 hours/per week (50 hours)			
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	30	
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours	/	
		16.3.	Practice: total hours	/	

17.	Other forms of activities	17.1.	Project assignments: hours	/
		17.2.	Individual tasks: hours	10
		17.3.	Self-directed learning	10
18.	Conditions for receiving authorization	Students who have earned at least 12 points from attendance in the seminars, 12 points from activity and attendance in the seminars, 5 points from oral presentations, and 5 points from seminar paper, meet the requirements for authorization.		
19.	Assessment methods			
	19.1.	Tests: points		/
	19.2.	Written essay/project assignment, oral or written presentation: points		Written essay + presentation (1 point) Up to 4 essays
	19.3.	Final exam: points		Up to 4 questions (1 question = 1-10 points)
20.	Grading criteria (points/grade)		up to 59 points	5 (five) (F)
			60 to 68 points	6 (six) (E)
			69 to 76 points	7 (seven) (D)
			77 to 84 points	8 (eight) (C)
			85 to 92 points	9 (nine) (B)
			93 to 100 points	10 (ten) (A)
21.	Method of monitoring the quality of teaching process	Report from the Self-evaluation committee and anonymous student survey		

22.	Literature					
	22.1.	Mandatory literature				
		No.	Author	Title	Publisher	Year
		1.	B. O'Malley	*Clinical Anatomy and Physiology of Exotic Species: Structure and Function of mammals, birds, reptiles and amphibians*	Elsevier Saunders	2005
		2.				
		3.				
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year
		1.	William O. Reece	*13 th edition of Dukes' Physiology of Domestic Animals*	John Wiley & sons, inc.	2015
		2.	Christopher D. Moyes, Patricia M. Schulte,	*Principles of Animal Physiology – second edition*	Pearson Education Limited	2014
		3.	Cunningham, J. G., and Klein, G. K.	*Cunningham's Textbook of Veterinary Physiology (fifth edition)*	Elsevier	2013
		4.	Lauralee Sherwood, Hillar Klandorf, Paul Y. Yancey	*Animal Physiology – From Genes to Organisms second edition*	Brooks/Cole	2013
		5.	Richard W. Hill, Gordon A. Wise, Margaret Anderson	*Animal Physiology third edition*	Sinauer Associates, Inc. publishers	2012
		6.	F. Brian Eddy, Richard D. Handy	*Ecological and Environmental Physiology of Fishes*	Oxford University Press	2012
		7.	R. J. Collier, J. L. Collier	*Environmental Physiology of Livestock*	Wiley-Blackwell	2012

		8.	J. E. P. W. Bicudo, William A. Buttemer, Mark A. Chappell, James T. Pearson, Claus Bech	*Ecological and Environmental Physiology of Birds*	Oxford University Press	2010
		9.	Frandson, R. D., Lee Wilke, W., Dee Fails, A.	*Anatomy and Physiology of Farm Animals (Seventh Edition)*	Wiley-Blackwell	2009
		10.	Frandson, R. D., Lee Wilke, W., Dee Fails, A.	*Anatomy and Physiology of Farm Animals (Seventh Edition)*	Wiley-Blackwell	2009
		11.	Cunningham, J. G., and Klein, G. K.	*Cunningham's Textbook of Veterinary Physiology (fourth edition)*	Elsevier	2007
		12.	Rastogi, S. C.	*Essentials of Animal Physiology (Fourth Edition)*	New Age International (P) Ltd., Publishers	2007
		13.	Pat Willmer, Graham Stone, Ian Johnston	*Environmental Physiology of Animals – second edition*	Blackwell Science Ltd	2005
		14.	B. R. Mackenna, R. Callander	*Illustrated Physiology 6th edition*	Churchill Livingstone	1997
		15.	David Randall, Warren Burggren, Kathleen French	*Eckert Animal Physiology – Mechanisms and Adaptations*	RR Donnelley & Sons Company	1997
		16.	Knut Schmidt-Nielsen	*Animal Physiology: adaptation and environment second edition*	Cambridge University Press	1975

Attachment no. 3		**Integrated first and second cycle of studies**
1.	Program course title	**Bulk Feed Production**
2.	Code	VME2023-06
3.	Study program	Veterinary medicine

4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Animal Nutrition			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Second (II)	Semester	Third (III)
7.	Course load expressed in ECTS credits	2.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Radmila Chrcheva Nikolovska, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course				
11.	Objectives of the course program (competencies) and learning outcomes	The course Bulk Feed Production aims to familiarize students and future veterinary specialists (whose main concern will be intensive livestock production) with the general characteristics of plants used in animal nutrition, their nutritional value, digestibility and biological value, as well as the method of preparing roughage animal feed, for the purposeful and rational satisfaction of all needs of domestic animals. A contribution in this direction would be to familiarize students with the latest varieties and hybrids of forage plants, their needs in cultivation, basic technology in production - new technological solutions, such as crop rotation, intercropping, type and cultivation of the land, the use of various fertilizers, seeds, sowing, cultivation, protection, etc. The ultimate goal of this subject, through appropriate animal nutrition, is to enable an impact on the quantitative and qualitative increase in safe animal feed, i.e. food for humans (meat, milk, eggs).			
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	Introductory lecture on the fodder base: Chemical composition of plants (the essentiality of certain substances that are important in the nutrition of domestic animals) The influence of soil composition on the production of fodder plants The influence of agrotechnical measures on the production of fodder plants Cultivation and the purpose of growing fodder plants in crop rotation The role and significance of the green fodder conveyor Forage plants from arable land Cereals as fodder plants Annual legumes Perennial legumes Root and tuber plants Other fodder plants Forage plants from meadows and pastures Preparation, preservation and storage of livestock feed Preparation of hay Preparation of haylage Preparation of silage Preservation of livestock feed by dehydration (flour,			

		briquettes, pellets) □ Feed quality assessment			
13.	Inter-connection with other subjects (courses)				
14.	Detailed description of teaching and working methods for the subject	Seminars: discussion of topics from the program or read in professional literature; active participation of students (expression of opinions, ideas, discussion); oral presentation of a chapter of the student's choice. Seminar paper: learning using professional literature and the Internet, preparation of a seminar paper (essay/poster); presentation and discussion of the seminar paper.			
15.	Total available time	50 hours Theory classes: 2 hours / per week (30 hours)			
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	30	
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours		
		16.3.	Practice: total hours		
17.	Other forms of activities	17.1.	Project assignments: hours		
		17.2.	Individual tasks: hours		
		17.3.	Self-directed learning	20	
18.	Conditions for receiving authorization				
19.	Assessment methods				
	19.1.	Tests: points			
	19.2.	Written essay/project assignment, oral or wrriten presentation: points			
	19.3.	Final exam: points			
20.	Grading criteria (points/grade)	up to 59 points	5 (five) (F)		
		60 to 68 points	6 (six) (E)		
		69 to 76 points	7 (seven) (D)		
		77 to 84 points	8 (eight) (C)		
		85 to 92 points	9 (nine) (B)		
		93 to 100 points	10 (ten) (A)		
21.	Method of monitoring the quality of teaching process	Report from the Self-evaluation committee and anonymous student survey			
22.	Literature				
	22.1.	Mandatory literature			
		No.	Author	Title	Publisher	Year
		1.	Ivanovski P.	*Fodder production*	Skopje	2000
		2.	Dukic D.	*Plants for the production of animal feed*	Novi Sad	2002
		3.		*Teaching material prepared by the course teacher*		
	22.2.	Additional literature				

		No.	Author	Title	Publisher	Year
		1.				
		2.				
		3.				

Attachment no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Harmful Antinutritive Compounds in Feed**			
2.	Code	VME2023-07			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Animal Nutrition			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Second (II)	Semester	Third (III)
7.	Course load expressed in ECTS credits	2.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Radmila Chrcheva Nikolovska, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course				
11.	Objectives of the course program (competencies) and learning outcomes	Concept and types of harmful substances - Factors that influence the occurrence of harmful substances - Factors that contribute to the negative effects of harmful substances - Harmful substances related to certain types of animal feed - Harmful substances that occur during spoilage of animal feed - Harmful substances that enter animal feed through contamination - Harmful substances of biological nature - Molds and mycotoxins in animal feed - Bacteria and their metabolites in animal feed - Heavy metals, radionuclides and toxic elements in animal feed - Prevention and reduction of the harmful effects of antinutritional substances			
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	The aim of the course is for students to acquire and deepen theoretical and practical knowledge about antinutritional – harmful substances in animal feed. These are substances that are present in animal feed because they are an integral part of the raw materials from which that food is produced (natural			

		metabolites), or have come into animal feed through contamination. The seminars include a presentation of individual groups of foods, which in addition to nutrients are carriers of various harmful substances, as well as the factors that influence the amount of their presence. Through the program, students will be introduced to the types of individual foods that are carriers of harmful substances – antinutritional ingredients, which cause appropriate health and immunosuppressive problems in animals, and through animal products, in the form of residues, can also endanger human health. During the seminars, it will be explained which antinutritional substances are found and in which animal feed. The method of their prevention will also be explained, in the form of examples from everyday veterinary practice. The student will also have an oral presentation on a chapter of his/her choice.		
13.	Inter-connection with other subjects (courses)			
14.	Detailed description of teaching and working methods for the subject	Seminars: discussion of topics from the program or read in professional literature; active participation of students (expression of opinions, ideas, discussion); oral presentation of a chapter of the student's choice. Seminar paper: learning using professional literature and the Internet, preparation of a seminar paper (essay/poster); presentation and discussion of the seminar paper.		
15.	Total available time	50 hours Theory classes: 2 hours / per week (30 hours)		
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	30
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours	
		16.3.	Practice: total hours	
17.	Other forms of activities	17.1.	Project assignments: hours	
		17.2.	Individual tasks: hours	
		17.3.	Self-directed learning	20
18.	Conditions for receiving authorization			
19.	Assessment methods			
	19.1.	Tests: points		
	19.2.	Written essay/project assignment, oral or wrriten presentation: points		
	19.3.	Final exam: points		
20.	Grading criteria (points/grade)		up to 59 points	5 (five) (F)
			60 to 68 points	6 (six) (E)
			69 to 76 points	7 (seven) (D)
			77 to 84 points	8 (eight) (C)
			85 to 92 points	9 (nine) (B)
			93 to 100 points	10 (ten) (A)
21.	Method of monitoring the quality of teaching process	Report from the Self-evaluation committee and anonymous student survey		
22.	Literature			
	22.1.	Mandatory literature		

		No.	Author	Title	Publisher	Year
		1.	Dukic D.,	*Plants for the production of animal feed*	Novi Sad	2002
		2.		*Teaching material prared by the course teacher*		
		3.				
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year

Attachment no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Green Economics and Sustainable Development**			
2.	Code	VME2023-08			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Rural Economy, Management and Biostatistics			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Second (II)	Semester	Third (III)
7.	Course load expressed in ECTS credits	2.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Blagica Sekovska, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course				
11.	Objectives of the course program (competencies) and learning outcomes	Increasing the pollution as a result of economic activities of mankind implies increasing the care about natural environment, but also connection to the ecological and economical activities. Economic development per se, it is not paradigm to the contemporary world, but we talk more and more for development which not degrades the environment, that means we talk about sustainable development. To accomplish such sustainable development it is necessary adaptation and greening of economic principles, with special emphasis of health and safety of			

		environment and people.		
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	What is green economy. What is sustainable development. Green economy development. Green working places. Concept of energy efficiency and sustainable source of energy. Agriculture as a factor of sustainable source of energy. Climate changes and sustainability. Agriculture as a factor of greening of economy. Protection of the environment and sustainable development. Agriecological measures. Innovations and sustainable development. Practicals have aim to support seminars and additional development of some contents from practical point of view with different teaching methods like dramatization of certain assumed situations and case studies, development of diferent tehnicues of starategical planing etc.		
13.	Inter-connection with other subjects (courses)			
14.	Detailed description of teaching and working methods for the subject	Seminars: work in large group with discussion and active participation of the students. Practicals: practicals with dramatization of situation, case study, presentation of some teaching units by the students, discussion about topics of interest and other ways of work in smaller groups Written assay: learning with use of referent literature and internet, preparing written assay; presentation and discussion about the written assay.		
15.	Total available time	50 hours Seminars: 1 hour/per week (15 hours) Practicals: 1 hour/per week (15 hours)		
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours	30
		16.3.	Practice: total hours	
17.	Other forms of activities	17.1.	Project assignments: hours	
		17.2.	Individual tasks: hours	
		17.3.	Self-directed learning	20
18.	Conditions for receiving authorization			
19.	Assessment methods			
	19.1.	Tests: points		
	19.2.	Written essay/project assignment, oral or wrriten presentation: points		
	19.3.	Final exam: points		
20.	Grading criteria (points/grade)	up to 59 points	5 (five) (F)	
		60 to 68 points	6 (six) (E)	
		69 to 76 points	7 (seven) (D)	
		77 to 84 points	8 (eight) (C)	
		85 to 92 points	9 (nine) (B)	
		93 to 100 points	10 (ten) (A)	
21.	Method of monitoring the quality of teaching process	Report from the Self-evaluation committee and anonymous student survey		
22.	Literature			
	22.1.	Mandatory literature		

		No.	Author	Title	Publisher	Year
		1. *Perman, R. Ma, Y. and McGilvray J. (1996): Natural Resource and Environmental Economics. Longman. London and New York.* 2. *Pearce, D.W. and Turner, R.K. (1998): Economics of Natural Resources and the Environment. Harvester Wheatsheaf, New York.* 3. *Quentin Grafton R., Adamowicz W., Dupont, D., Nelson H., Hill, R.J., Renzetti, S. (2004): The Economics of the Environment and Natural Resources. Blackwell Publ.*				
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year

Attachement no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Veterinary Vaccinology**			
2.	Code	VME2023-09			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Microbiology and Immunology			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Second (II)	Semester	Third (III)
7.	Course load expressed in ECTS credits	2.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Prof.Slavcho Mrenoshki, PhD Prof. Iskra Cvetkovikj, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course				
11.	Objectives of the course program (competencies) and learning outcomes	The goal of this course is to introduce veterinary medicine students to the types, production, and use of vaccines in veterinary medicine. In addition to general knowledge about vaccines, students will gain knowledge about vaccination protocols in different animal species and the importance of veterinary vaccines in public health.			
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	Concept of vaccines and a brief history of vaccines and vaccination. Types of vaccines. Production of vaccines. Adjuvants. Vaccination against viral diseases and antigenic diversity in viruses. Vaccination against bacterial diseases. Vaccination against parasitic diseases. Vaccination protocol in dogs. Vaccination protocol in cats. Vaccination protocol in birds. Vaccination protocol in cattle.			

		Vaccination protocol in sheep and goats. Vaccination protocol in pigs. Vaccination protocol in horses. Control and eradication of diseases in animals through vaccination.			
13.	Inter-connection with other subjects (courses)	Microbiology 1, Microbiology 2, Veterinary Immunology			
14.	Detailed description of teaching and working methods for the subject	Seminars: discussion on topics from the program or read in professional literature; active participation of students (expressing opinions, ideas, discussion); oral presentation on a chapter chosen by the student. Seminar paper: learning with the use of professional literature and the internet; preparation of a seminar paper.			
15.	Total available time	50 hours			
16.	Forms of teaching activities	16.1.	Seminars: hours	30	
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours		
		16.3.	Practice: total hours		
17.	Other forms of activities	17.1.	Project assignments: hours		
		17.2.	Individual tasks: hours		
		17.3.	Self-directed learning	20	
18.	Conditions for receiving authorization				
19.	Assessment methods				
	19.1.	Tests: points		Presence/activity: 15-30	
	19.2.	Written essay/project assignment, oral or wrriten presentation: points		25-40	
	19.3.	Final exam: points		20-30	
20.	Grading criteria (points/grade)	up to 59 points	5 (five) (F)		
		60 to 68 points	6 (six) (E)		
		69 to 76 points	7 (seven) (D)		
		77 to 84 points	8 (eight) (C)		
		85 to 92 points	9 (nine) (B)		
		93 to 100 points	10 (ten) (A)		
21.	Method of monitoring the quality of teaching process	Report from the Self-evaluation committee and anonymous student survey			

22. Literature

22.1. Mandatory literature

No.	Author	Title	Publisher	Year
1.	P.-P. Pastoret, M. Lombard & A.A. Schudel (Eds).	*Animal vaccination – Part 1: development, production and use of vaccines*	OIE Scientific and Technical Review 26 (1)	2007

		2.	P.-P. Pastoret, M. Lombard & A.A. Schudel (Eds)	*Animal vaccination – Part 2: scientific, economic, regulatory and socio-ethical aspects.*	OIE Scientific and Technical Review 26 (2)	2007
		3.	Milligan, G.N. & A.D.T. Barrett (Eds)	*Vaccinology – An Essential Guide.*	Wiley Blackwell, Chichester, UK	2015
		4.	Thomas, S. (Ed)	*Vaccine Design. Methods and Protocols, Volume 2: Vaccines for Veterinary Diseases.*	Humana Press, Springer, New York, USA,	2016
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year
		1.				
		2.				
		3.				

Attachment no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Laboratory and Exotic Animal Anatomy and Welfare**			
2.	Code	VME2023-10			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Functional Morphology			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year /	Second (II)	Semester	Fourth (IV)
7.	Course load expressed in ECTS credits	2.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Prof Vlatko Ilieski, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course	Attending of all subjects from the 1st and 2nd semester			
11.	Objectives of the course program (competencies) and learning	Studying the structure and functional anatomy of the exotic and laboratory animals. The program takes all of the aspects of the			

	outcomes	anatomy of the animals, witch are prerequisites for their rearing and nutrition. This program corresponds with the needs of future veterinarians for their education and knowledge whose they will implement in the animal welfare law and regulations.			
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	Anatomy of the exotic animals. Using radiograms in the exotic animal diseases diagnosis. Anatomy of fish. Anatomy of green iguana. Anatomy of mouse. Anatomy of snake. Anatomy of tortoise. Anatomy of ferret. Anatomy of chicken. Anatomy of ostrich. Anatomy of pigeon. Anatomy of song bird.			
13.	Inter-connection with other subjects (courses)	Cell Biology, Animal Anatomy 1 and 2			
14.	Detailed description of teaching and working methods for the subject	**Seminars:** Discussion of topics from the syllabus or read in professional literature; active participation of students (interest in practical work with exotic animals, expressing opinions, ideas, discussion); oral presentation of a chapter chosen by the student. **Seminar Paper:** Learning using professional literature, the internet,, preparation of a project task (essay/poster); presentation and discussion of the seminar paper. Use of plastinated models (sections) and educational video materials.			
15.	Total available time	50 hours Theory classes: 1 hour/per week (15 hours) Practical: 1 hour/per week (15 hours)			
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	15	
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours	15	
		16.3.	Practice: total hours	/	
17.	Other forms of activities	17.1.	Project assignments: hours	/	
		17.2.	Individual tasks: hours	/	
		17.3.	Self-directed learning	20	
18.	Conditions for receiving authorization	The student is obligated for active participation in all predicted activities for gaining points which are part of the final grading.			
19.	Assessment methods				
	19.1.	Tests: points		up to 60	
	19.2.	Written essay/project assignment, oral or wrriten presentation: points		up to 10	
	19.3.	Final exam: points		up to 30	
20.	Grading criteria (points/grade)		up to 59 points	5 (five) (F)	
			60 to 68 points	6 (six) (E)	
			69 to 76 points	7 (seven) (D)	
			77 to 84 points	8 (eight) (C)	
			85 to 92 points	9 (nine) (B)	
			93 to 100 points	10 (ten) (A)	
21.	Method of monitoring the quality of teaching process	Report from the Self-evaluation committee and anonymous student survey			
22.	Literature				
	22.1.	Mandatory literature			
		No.	Author	Title	Publisher	Year

		Maria-Elisabeth Krautwald-Junghanns;Michael Pees,Sven Reese;Thomas Tully: Diagnostic imaging of exotic Pets, Schlutersche, 2010 *Bairbre O'Malley: Clinical Anatomy and Physiology of exotic species, ELSEVIER, 2005* *James A Orsini,Nora S.Grenager and Alexander de Lahunta Comparative veterinary Anatomy: A Clinical Approach, Academic Press, 2021*				
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year
		1.				
		2.				
		3.				

Attachment no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Feed Additives and Health Modulators**			
2.	Code	VME2023-11			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Animal Nutrition			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Second (II)	Semester	Fourth (IV)
7.	Course load expressed in ECTS credits	2.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Radmila Chrcheva Nikolovska, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course				
11.	Objectives of the course program (competencies) and learning outcomes	The course aims to introduce students and future experts in veterinary medicine to the application of various supplements that are added to livestock food, in order to increase and improve production in domestic animals. New commercial preparations with different compositions and applications appear on the market every day. This elective course will significantly facilitate future veterinary practitioners, as well as future veterinary nutritionists, in being resourceful with the numerous range of various essential and non-essential supplements, dietary preparations, food additives for humans and animals. The ultimate goal of this course is to enable an impact on the quantitative and qualitative increase in safe food used by humans (meat, milk, eggs) through appropriate and safe nutrition of domestic animals.			

<table>
<tr><td>12.</td><td>Detailed course content by chapter and unit with learning outcomes for each chapter</td><td colspan="3">Introduction
 Chemical composition of animal feed (essentiality of individual matters)
 Concept and types of additives
 Meaning and classification of animal feed additives
 Vitamins and their importance in animal feed
 Synthetic amino acids
 Microelements (gelatinized)
 Probiotics
 Prebiotics
 Symbiotics
 Enzymes
 Antioxidants
 Emulsifiers
 Pigments - dyes
 Aromatic substances
 Organic acids
 Tannins
 Antibiotics (their use then and now)</td></tr>
<tr><td>13.</td><td>Inter-connection with other subjects (courses)</td><td colspan="3"></td></tr>
<tr><td>14.</td><td>Detailed description of teaching and working methods for the subject</td><td colspan="3">Seminars: discussion of topics from the program or read in professional literature; active participation of students (expression of opinions, ideas, discussion); oral presentation of a chapter of the student's choice. Seminar paper: learning using professional literature and the Internet, preparation of a seminar paper (essay/poster); presentation and discussion of the seminar paper.</td></tr>
<tr><td>15.</td><td>Total available time</td><td colspan="3">50 hours
Theory classes: 2 hours/per week (30 hours)</td></tr>
<tr><td rowspan="3">16.</td><td rowspan="3">Forms of teaching activities</td><td>16.1.</td><td>Theoretical lectures: hours</td><td>30</td></tr>
<tr><td>16.2.</td><td>Practical lectures (laboratory, auditorial), seminars, team work: hours</td><td></td></tr>
<tr><td>16.3.</td><td>Practice: total hours</td><td></td></tr>
<tr><td rowspan="3">17.</td><td rowspan="3">Other forms of activities</td><td>17.1.</td><td>Project assignments: hours</td><td></td></tr>
<tr><td>17.2.</td><td>Individual tasks: hours</td><td></td></tr>
<tr><td>17.3.</td><td>Self-directed learning</td><td>20</td></tr>
<tr><td>18.</td><td>Conditions for receiving authorization</td><td colspan="3"></td></tr>
<tr><td rowspan="4">19.</td><td colspan="4">Assessment methods</td></tr>
<tr><td>19.1.</td><td colspan="2">Tests: points</td><td></td></tr>
<tr><td>19.2.</td><td colspan="2">Written essay/project assignment, oral or wrriten presentation: points</td><td></td></tr>
<tr><td>19.3.</td><td colspan="2">Final exam: points</td><td></td></tr>
<tr><td rowspan="6">20.</td><td rowspan="6">Grading criteria (points/grade)</td><td colspan="2">up to 59 points</td><td>5 (five) (F)</td></tr>
<tr><td colspan="2">60 to 68 points</td><td>6 (six) (E)</td></tr>
<tr><td colspan="2">69 to 76 points</td><td>7 (seven) (D)</td></tr>
<tr><td colspan="2">77 to 84 points</td><td>8 (eight) (C)</td></tr>
<tr><td colspan="2">85 to 92 points</td><td>9 (nine) (B)</td></tr>
<tr><td colspan="2">93 to 100 points</td><td>10 (ten) (A)</td></tr>
<tr><td>21.</td><td>Method of monitoring the quality of teaching process</td><td colspan="3">Report from the Self-evaluation committee and anonymous student survey</td></tr>
</table>

22.	Literature					
	22.1.	Mandatory literature				
		No.	Author	Title	Publisher	Year
		1.	Adams, C. A.,	*Total Nutrition. Feeding animals for health and growth*	Nottingham University Press, Nottingham,	2002
		2.	Dukic D.,	*Plants for the production of animal feed*	Novi Sad	2002
		3.		*Teaching materials prepared by the course teacher*		
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year

Attachment no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Economics and Organization of Livestock Production**			
2.	Code	VME2023-12			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of rural economy, management and biostatistics			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Second (II)	Semester	Fourth (IV)
7.	Course load expressed in ECTS credits	2.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Blagica Sekovska, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course				
11.	Objectives of the course program (competencies) and learning outcomes	Aim of this course is to introduce the student with characteristics of an farm company, characteristics of farm breeding of different animal species: cattle, sheep and goats, pig and poultry. All particular			

		characteristics of these productions would be elaborated both from organizational-technical and economic aspect. Also this course would obtain student getting sense about his/her responsibility as a part of a national economy, as well as the place and role of the veterinary profession in the total economy. ***The practicals*** have to obtain support to the theory classes and to provide additional elaboration of some topics from the practical aspect, via different teaching methods, as dramatization of some hypothetic situations and problem solving, making different economic analyses about the economic benefits of the company as the risk analysis, cost-benefit analysis, discussions on some topics interesting for the students etc. Practicals include also the visit of a company in rural region where some of the principles elaborated in the theory classes would be demonstrated practically.		
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	Management of livestock farm in 21 century. Condition balance of livestock farm and analysis. Success balance of livestock farm and analysis. Economic principles – choice of production levels in livestock farm. Costs concept in economy of livestock farm. Planning in livestock farm. Organization in livestock farm. Buisiness in livestock farm. Analysis in livestock farm. Human resources management in livestock farm.		
13.	Inter-connection with other subjects (courses)			
14.	Detailed description of teaching and working methods for the subject	Seminars: lectures in large group with discussion and active participation of the students. Practicals: practicals with a visit of a farm. Written assay: learning with use of referent textbooks and internet, preparing written assay; presentation and discussion about the written assay. Seminars: lectures in large group with discussion and active participation of the students		
15.	Total available time	50 hours Seminars: 1 hour/per week (15 hours) Practicals: 1 hour/per week (15 hours)		
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours	30
		16.3.	Practice: total hours	
17.	Other forms of activities	17.1.	Project assignments: hours	
		17.2.	Individual tasks: hours	
		17.3.	Self-directed learning	20
18.	Conditions for receiving authorization			
19.	Assessment methods The student is obligated for active participation in all predicted activities for gaining points which are part of the final grading.			
	19.1.	Tests: points		
	19.2.	Written essay/project assignment, oral or wrriten presentation: points		
	19.3.	Final exam: points		
20.	Grading criteria (points/grade)		up to 59 points	5 (five) (F)
			60 to 68 points	6 (six) (E)
			69 to 76 points	7 (seven) (D)

		77 to 84 points	8 (eight) (C)
		85 to 92 points	9 (nine) (B)
		93 to 100 points	10 (ten) (A)
21.	Method of monitoring the quality of teaching process	Report from the Self-evaluation committee and anonymous student survey	

22.	Literature					
	22.1.	Mandatory literature				
		No.	Author	Title	Publisher	Year
		1. *Bardhan D.: Textbook On Livestock Economics Marketing and Business, 2012* 2. *K.S. Gangadhar: Livestock Economics: Marketing,Business Management and Accountancy, 2009* 3. *David L. Debertin: Agricultural Production Economics, 2012*				
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year
		1.				
		2.				
		3.				

Attachment no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Marketing in Veterinary Practice**			
2.	Code	VME2023-13			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of rural economy, management and biostatistics			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Second (II)	Semester	Fourth (IV)
7.	Course load expressed in ECTS credits	2.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Blagica Sekovska, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course				
11.	Objectives of the course program (competencies) and learning outcomes	This course has aim to introduce the students with basis of marketing in veterinary practice. That means that students have to get basic knowledge for their future becoming part of the economy with			

		establishment of private veterinary practice. This course is closely related and compatible with the compulsory course Basis of management and management of veterinary practice. Both these courses would obtain to the students to attract as possible as it get more clients, as well as to keep them. The future doctor of veterinary medicine has to get basic knowledge about expectations of his/her clients, how to improve his/her practice and to make as possible as it get higher profit. For this goal some basic knowledge is necessary about clients behavior, nature and features of offered service, modes how prices could and have to be made, channels for distribution of information to the client, i.e. how marketing instruments to be successfully used for practice managing.		
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	Introduction. Marketing environment in veterinary practice. Knowing the clients of veterinary practice. Marketing instruments in most successful ranking on the market. Veterinary service market. Significane and development of marketing strategies. Types of marketing strategies suitable for veterinary practice. How to research service market. Organization and control of marketing activities.		
13.	Inter-connection with other subjects (courses)	Basis of management and management of veterinary practice		
14.	Detailed description of teaching and working methods for the subject	Seminars: discussion on topics from the course or written in the referent textbooks; active participation of the student (exposing personal opinions, ideas, discussion); oral presentation of a course's topic by the student's choice. Written assay: learning with use of referent textbooks and internet, preparing wtitten assay.		
15.	Total available time	50 hours Seminars: 1 hour/per week (15 hours) Practical: 1 hour/per week (15 hours)		
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours	30
		16.3.	Practice: total hours	
17.	Other forms of activities	17.1.	Project assignments: hours	
		17.2.	Individual tasks: hours	20
		17.3.	Self-directed learning	
18.	Conditions for receiving authorization			
19.	Assessment methods Final grade mark is made with summerasing points according the table of activities mentioned above. The student is obligated for active participation in all predicted activities for gaining points which are part of the final grading.			
	19.1.	Tests: points		up to 60
	19.2.	Written essay/project assignment, oral or wrriten presentation: points		up to 14
	19.3.	Final exam: points		
20.	Grading criteria (points/grade)		up to 59 points	5 (five) (F)
			60 to 68 points	6 (six) (E)
			69 to 76 points	7 (seven) (D)
			77 to 84 points	8 (eight) (C)
			85 to 92 points	9 (nine) (B)

			93 to 100 points		10 (ten) (A)	
21.	Method of monitoring the quality of teaching process		Report from the Self-evaluation committee and anonymous student survey			
22.	Literature					
	22.1.	Mandatory literature				
		No.	Author	Title	Publisher	Year
		1. Robin Brogdan:101 Veterinary Marketing Questions Answered, 2011 *2. K.H. Lovelock, J.Wirtz: Services Marketing, 2011* 3. *Shawn P. Messonier: Marketing Your Veterinary Practice, Misury, 2000*				
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year
		1.				
		2.				
		3.				

Attachment no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Comparative Physiology**			
2.	Code	VME2023-14			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine - Skopje, Ss. Cyril and Methodius University in Skopje Department of Functional Morphology – Comparative Physiology			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Second (II)	Semester	Fourth (IV)
7.	Course load expressed in ECTS credits	2.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Vladimir Petkov, PhD, DVM Asst. Prof. Martin Nikolovski, PhD, DVM			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course	Course attendance: Enrolled course in Animal physiology 2 and verified attendance in Animal physiology 1 Course passing: Minimum points from seminar attendance and activity, minimum points from written essay and oral presentation, and minimum points from the final exam			
11.	Objectives of the course program (competencies) and learning outcomes	The course aims to enable students to integrate knowledge from Animal Physiology 1 and 2 by applying the adaptive physiological principles in various animal species living in different environments. The subject covers the adaptive physiological mechanisms in terrestrial and aquatic animals living in wide ranges of atmospheric, climatic, and temperature conditions. By fulfilling the aims of the subject, it is expected that the students are familiarized with the basic animal needs and welfare.			
12.	Detailed course content by	Comparative physiology (Comparative physiological mechanisms			

	chapter and unit with learning outcomes for each chapter	for maintaining water balance, electrolytes, and osmotic equilibrium; Comparative energy metabolism; Comparative respiratory mechanisms; Comparative thermoregulatory mechanisms; Comparative muscle and neurophysiology; Comparative physiology of the endocrine system); Influence of the environment on metabolism; Effects of photoperiod on the physiology of domestic animals; Types of adaptation in nature; Fundamental mechanisms of adaptation; Adaptive physiology in aquatic environments; Adaptive physiology in terrestrial environments; Adaptive physiology in extreme terrestrial habitats.		
13.	Inter-connection with other subjects (courses)	Cell Biology Biochemistry Histology and Embryology 1 and 2 Animal Anatomy 1 and 2 Pathophysiology 1 and 2 Domestic Animal General Nutrition and Specific Nutrition of Domestic Animal Clinical Biochemistry Animal Behaviour and Welfare General and Special Pharmacology		
14.	Detailed description of teaching and working methods for the subject	Seminars: Interactive discussion on the physiology of different exotic animal species (oral presentations) Self-directed learning: teaching materials (textbooks, scientific and professional papers) Independent activity: analyzing scientific and professional papers, and writing seminar papers.		
15.	Total available time	50 hours Theory classes: 2 hours/per week (30 hours)		
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	30
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours	/
		16.3.	Practice: total hours	/
17.	Other forms of activities	17.1.	Project assignments: hours	/
		17.2.	Individual tasks: hours	10
		17.3.	Self-directed learning	10
18.	Conditions for receiving authorization	Students who have earned at least 12 points from attendance in the seminars, 12 points from activity and attendance in the seminars, 5 points from oral presentations, and 5 points from seminar paper, meet the requirements for authorization.		
19.	Assessment methods			
	19.1.	Tests: points		/
	19.2.	Written essay/project assignment, oral or written presentation: points		Written essay + presentation (1 point) Up to 4 essays
	19.3.	Final exam: points		Up to 4 questions (1 question = 1-10 points)
20.	Grading criteria (points/grade)		up to 59 points	5 (five) (F)
			60 to 68 points	6 (six) (E)
			69 to 76 points	7 (seven) (D)
			77 to 84 points	8 (eight) (C)
			85 to 92 points	9 (nine) (B)
			93 to 100 points	10 (ten) (A)
21.	Method of monitoring the quality of teaching process		Report from the Self-evaluation committee and anonymous student survey	

22.	Literature					
	22.1.	Mandatory literature				
		No.	Author	Title	Publisher	Year
		1.	Knut Schmidt-Nielsen	*Animal Physiology: adaptation and environment second edition*	Cambridge University Press	1975
		2.	Pat Willmer, Graham Stone, Ian Johnston	*Environmental Physiology of Animals – second edition*	Blackwell Science Ltd	2005
		3.	J. E. P. W. Bicudo, William A. Buttemer, Mark A. Chappell, James T. Pearson, Claus Bech	*Ecological and Environmental Physiology of Birds*	Oxford University Press	2010
		4.	R. J. Collier, J. L. Collier	*Environmental Physiology of Livestock*	Wiley-Blackwell	2012
		5.	F. Brian Eddy, Richard D. Handy	*Ecological and Environmental Physiology of Fishes*	Oxford University Press	2012
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year
		1.	William O. Reece	*13 th edition of Dukes' Physiology of Domestic Animals*	John Wiley & sons, inc.	2015
		2.	Christopher D. Moyes, Patricia M. Schulte,	*Principles of Animal Physiology – second edition*	Pearson Education Limited	2014
		3.	Cunningham, J. G., and Klein, G. K.	*Cunningham's Textbook of Veterinary Physiology (fifth edition)*	Elsevier	2013
		4.	Lauralee Sherwood, Hillar Klandorf, Paul Y. Yancey	*Animal Physiology – From Genes to Organisms second edition*	Brooks/Cole	2013

		5.	Richard W. Hill, Gordon A. Wise, Margaret Anderson	*Animal Physiology third edition*	Sinauer Associates, Inc. publishers	2012
		6.	Frandson, R. D., Lee Wilke, W., Dee Fails, A.	*Anatomy and Physiology of Farm Animals (Seventh Edition)*	Wiley-Blackwell	2009
		7.	Frandson, R. D., Lee Wilke, W., Dee Fails, A.	*Anatomy and Physiology of Farm Animals (Seventh Edition)*	Wiley-Blackwell	2009
		8.	Cunningham, J. G., and Klein, G. K.	*Cunningham's Textbook of Veterinary Physiology (fourth edition)*	Elsevier	2007
		9.	Rastogi, S. C.	*Essentials of Animal Physiology (Fourth Edition)*	New Age International (P) Ltd., Publishers	2007
		10.	B. O'Malley	*Clinical Anatomy and Physiology of Exotic Species: Structure and Function of mammals, birds, reptiles and amphibians*	Elsevier Saunders	2005
		11.	B. R. Mackenna, R. Callander	*Illustrated Physiology 6th edition*	Churchill Livingstone	1997
		12.	David Randall, Warren Burggren, Kathleen French	*Eckert Animal Physiology – Mechanisms and Adaptations*	RR Donnelley & Sons Company	1997

Attachement no. 3		**Integrated first and second cycle of studies**
1.	Program course title	**Biochemical Ecotoxicology**
2.	Code	VME2023-15
3.	Study program	Veterinary medicine
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department for Biochemistry and Cell Biology Department of Chemistry
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies

6.	Academic year / semester	Year	Second (II)	Semester	Fourth (IV)
7.	Course load expressed in ECTS credits	2.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Velimir Stojkovski, PhD Prof. Zehra Hajrulai-Musliu, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course	Students get acquainted with the impact of various toxic chemical substances on biochemical ones processes in different organisms. The acquired knowledge about the biochemical responses of organisms can be used as indicators of the toxic effects of chemical substances on the living organism and the ecosystem.			
11.	Objectives of the course program (competencies) and learning outcomes	Sources of toxic chemical substances. The influence of various toxic chemical substances on enzyme reactions, carbohydrate metabolism, lipid metabolism and protein metabolism. Other effects of toxic chemical substances on biochemical processes (oxidative stress, changes in mitochondria, changes in peroxisomes, disturbance in hormone synthesis, changes in nucleic acids). Biochemical indicators for monitoring biological changes under the influence of toxic chemical substances. Biochemical ecotoxicological experiments for the protection and preservation of the environment.			
12.	Detailed course content by chapter and unit with learning outcomes for each chapter				
13.	Inter-connection with other subjects (courses)				
14.	Detailed description of teaching and working methods for the subject	Theory classes: Interactive classes (lectures in large groups or mentored classes depending on the number of students, with discussion and active participation of the students,). Practicals: Practicals and other ways of work with smaller groups			
15.	Total available time	50 hours Theory classes: 1 hours/per week (15 hours) Project tasks: 1 hours/per week (15 hours)			
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours		15
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours		
		16.3.	Practice: total hours		
17.	Other forms of activities	17.1.	Project assignments: hours		15
		17.2.	Individual tasks: hours		
		17.3.	Self-directed learning		20
18.	Conditions for receiving authorization	The presence of the student at theory classes and completed project tasks is a condition for obtaining a signature confirming attendance from the subject professor; Class attendance will not be counted if the student is absent for more than 30% of the classes; The student is exempt from the final exam by completed project tasks and earning a minimum score in each continuous test and achieving a			

		total of at least 60 points across all assessments; The student can take the final exam by obtaining a signature confirming attendance in the theory and completed project tasks.

19. Assessment methods

The student is obligated for active participation in all predicted activities for gaining points which are part of the final grading.
Tests (two): written
Final exam: oral or written

Type of activity	Points	
	minimum	maximum
Attendance on theory classes	6	10
Activity	6	10
Project tasks	6	10
Test I	12	20
Test II	12	20
Final exam	18	30
Total:	60	100

19.1.	Tests: points	up to 40
19.2.	Written essay/project assignment, oral or wrriten presentation: points	up to 10
19.3.	Final exam: points	up to 30

20.	Grading criteria (points/grade)	up to 59 points	5 (five) (F)
		60 to 68 points	6 (six) (E)
		69 to 76 points	7 (seven) (D)
		77 to 84 points	8 (eight) (C)
		85 to 92 points	9 (nine) (B)
		93 to 100 points	10 (ten) (A)
21.	Method of monitoring the quality of teaching process	Report from the Self-evaluation committee and anonymous student survey	

22. Literature

22.1. Mandatory literature

No.	Author	Title	Publisher	Year
1.	Gagne, F.	*Biochemical Ecotoxicology. Principles and Methods*	Academic Press, Elsevier	2014
2.	Manahan, Stanley E.	*Toxicological chemistry and biochemistry, 3rd ed.*	Lewis Publishers, CRC Press LLC	2023
3.				

22.2. Additional literature

No.	Author	Title	Publisher	Year

		1.	Sánchez-Bayo, F., van den Brink, Paul J., Mann, Reinier M.	*Ecological Impacts of Toxic Chemicals*	Bentham Science Publishers	2011
		2.				
		3.				

Attachement no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Biosecurity in Animal Husbandry and Veterinary Medicine**			
2.	Code	VME2023-16			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Animal Hygiene and Environmental Protection			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Second (II)	Semester	Fourth (IV)
7.	Course load expressed in ECTS credits	2.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Assist. Prof. Miroslav Kjosevski, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course	Listened to Animal Hygiene 1			
11.	Objectives of the course program (competencies) and learning outcomes	The aim of the course is for students to understand the complexity and interconnection of biosecurity practices and the application of biosecurity measures in various animal husbandry and production systems; the importance of strategic planning and applied methods in animal health prevention, as well as the benefits of biosecurity in the context of reduced use of veterinary medicinal products, particularly antibiotics, in husbandry and veterinary practices. Additionally, students will have the opportunity to learn specific practical examples of applying biosecurity measures in the rearing of individual species.			
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	Disease transmission. Fundamental principles of biosecurity in animal husbandry and veterinary medicine. Importance of biosecurity in the context of health, production, and antibiotic use. Implementation of biosecurity in practice. Measuring biosecurity and the hygiene status of farms. Cleaning and disinfection. Hygienic aspects of air and air decontamination. Hygiene of food and water in			

<table>
<tr><td></td><td></td><td colspan="3">relation to biosecurity. Pest control in animal facilities. Disease transmission and biosecurity in the husbandry of pigs, poultry, cattle, horses, and dogs (shelters). Biosecurity in veterinary practice and clinics. Biosecurity in laboratory animals. Biosecurity in aquaculture.</td></tr>
<tr><td>13.</td><td>Inter-connection with other subjects (courses)</td><td colspan="3"></td></tr>
<tr><td>14.</td><td>Detailed description of teaching and working methods for the subject</td><td colspan="3">Theoretical lectures: interactive lectures in a large group with discussion, student presentations and their additional activation
Practical lectures: work in small groups and field visits
Seminar paper: learning using professional literature and the Internet, preparation of a seminar paper (essay/poster); presentation and discussion of the seminar paper.
Project tasks: work on an individual/group project based on research and measurements with presentation of results</td></tr>
<tr><td>15.</td><td>Total available time</td><td colspan="3">50 hours
Theory classes: 1 hour/per week (15 hours)
Practicals: 1 hour/per week (15 hours)</td></tr>
<tr><td rowspan="5">16.</td><td rowspan="5">Forms of teaching activities</td><td>16.1.</td><td>Theoretical lectures: hours</td><td>15</td></tr>
<tr><td>16.2.</td><td>Practical lectures (laboratory, auditorial), seminars, team work: hours</td><td>15</td></tr>
<tr><td>16.3.</td><td>Practice: total hours</td><td></td></tr>
<tr><td rowspan="2">17.</td><td rowspan="2">Other forms of activities</td><td>17.1.</td><td>Project assignments: hours</td><td></td></tr>
<tr><td>17.2.</td><td>Individual tasks: hours</td><td>10</td></tr>
<tr><td></td><td></td><td>17.3.</td><td>Self-directed learning</td><td>10</td></tr>
<tr><td>18.</td><td>Conditions for receiving authorization</td><td colspan="3">To obtain a signature, the student is obliged to attend at least 70% of the theoretical and practical lectures held.
The student is obliged to have acquired the right to sign and to pass the two continuous tests from the practical part (minimum 6 points scored on one continuous test) in order to be able to take the theoretical - final part of the exam.</td></tr>
<tr><td>19.</td><td colspan="4">Assessment methods

Activity at practical lectures

<table>
<tr><th rowspan="2">Type of activity</th><th colspan="2">Points</th></tr>
<tr><th>minimum</th><th>maximum</th></tr>
<tr><td>Attendance at theoretical lectures</td><td>12</td><td>15</td></tr>
<tr><td>Attendance at practical lectures</td><td>12</td><td>15</td></tr>
<tr><td>Activity at practical lectures</td><td>0</td><td>10</td></tr>
<tr><td>Accepted seminar paper or project assignment</td><td>15</td><td>20</td></tr>
<tr><td>Passed theoretical part/final exam</td><td>21</td><td>40</td></tr>
<tr><td>Total points required to pass the exam*</td><td>60</td><td>100</td></tr>
</table>

Activity at the lectures (theoretical and practical) and the seminar paper/project assignment are optional and the student decides independently whether to join the activities and acquire additional points.
*When scoring points with decimal values, if the decimal value is equal to or greater than 5, then it is</td></tr>
</table>

	rounded up to the whole number with a higher value. For example, If the student obtained 65.5 points, then it is considered that the student obtained a total of 66 points for this subject.				
	19.1.	Tests: points			Oral or written final exam
	19.2.	Written essay/project assignment, oral or wrriten presentation: points			Preparation of a seminar paper or project assignment
	19.3.	Final exam: points			
20.	Grading criteria (points/grade)		up to 59 points		5 (five) (F)
			60 to 68 points		6 (six) (E)
			69 to 76 points		7 (seven) (D)
			77 to 84 points		8 (eight) (C)
			85 to 92 points		9 (nine) (B)
			93 to 100 points		10 (ten) (A)
21.	Method of monitoring the quality of teaching process		Report from the Self-evaluation committee and anonymous student survey		
22.	Literature				
	22.1.	Mandatory literature			
		No.	Author	Title	Publisher	Year
		1. *Biosecurity in Animal Production and Veterinary Medicine, Jeroen Dewulf, Filip Van Immerseel, CABI, 2019* 2. *Excerpts from scientific - professional literature*				
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year
		Excerpts from scientific - professional literature				

Attachement no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Precision Agriculture and Veterinary Medicine**			
2.	Code	VME2023-17			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Animal Hygiene and Environmental Protection			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Second (II)	Semester	Fourth (IV)
7.	Course load expressed in ECTS credits	2.0			
8.	Teacher (leading teacher, in	Assist. Prof. Miroslav Kjosevski, PhD			

	case of multiple teacher)			
9.	Teaching language	English		
10.	Necessary prerequisites for attending and passing the course	Listened to Animal Hygiene 1 and 2, Animal Husbandry 1 Passed subjects: Biostatistics		
11.	Objectives of the course program (competencies) and learning outcomes	The main objective of this course is for students to become familiar with the most up-to-date technology used for health monitoring and disease prevention, monitoring of animal behavior and their production. The basis of the subject program is the application of sensory and other technology in collecting animal data and their further application in maintaining and improving the health of animals, their welfare, behavior and production. In addition, students will acquire general knowledge from the application of analytical and software solutions (machine learning, artificial intelligence, etc.) that help in the interpretation of data and the prediction of events in animal breeding, maintaining their health, welfare and production.		
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	Precision livestock farming and animal breeding. Data collection and analysis – animal sensory technologies; Thermal video techniques, machine video techniques, acoustic techniques, monitoring of activities, location, and locomotion for monitoring the behavior, health, welfare and production of animals; Data analysis and decision-making in animal husbandry. Applied application of precision livestock farming and veterinary medicine: monitoring and control of housing conditions in farms; individual control in feed efficiency and rumen monitoring; automatic monitoring systems for control of mastitis, limping, pregnancy; automatic milking systems; grazing monitoring and pasture management; Application of sensor technology and automatic monitoring systems in the breeding of cattle, sheep, pigs, poultry, pets and in zoos.		
13.	Inter-connection with other subjects (courses)			
14.	Detailed description of teaching and working methods for the subject	Theoretical lectures: interactive lectures in a large group with discussion, student presentations and their additional activation Practical lectures: work in small groups and field visits Seminar paper: learning using professional literature and the Internet, preparation of a seminar paper (essay/poster); presentation and discussion of the seminar paper. Project tasks: work on an individual/group project based on research and measurements with presentation of results		
15.	Total available time	50 hours Theory classes: 1 hour/per week (15 hours) Practicals: 1 hour/per week (15 hours)		
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	15
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours	15
		16.3.	Practice: total hours	
17.	Other forms of activities	17.1.	Project assignments: hours	10
		17.2.	Individual tasks: hours	
		17.3.	Self-directed learning	10
18.	Conditions for receiving authorization	To obtain a signature, the student is obliged to attend at least 70% of the theoretical and practical lectures held.		

		The student is obliged to have acquired the right to sign and to pass the two continuous tests from the practical part (minimum 6 points scored on one continuous test) in order to be able to take the theoretical - final part of the exam.

19. Assessment methods
Activity at practical lectures

Type of activity	*Points*	
	minimum	*maximum*
Attendance at theoretical lectures	12	15
Attendance at practical lectures	12	15
Activity at practical lectures	0	10
Accepted seminar paper or project assignment	15	20
Passed theoretical part/final exam	21	40
Total points required to pass the exam*	60	100

Activity at the lectures (theoretical and practical) and the seminar paper/project assignment are optional and the student decides independently whether to join the activities and acquire additional points.

**When scoring points with decimal values, if the decimal value is equal to or greater than 5, then it is rounded up to the whole number with a higher value. For example, If the student obtained 65.5 points, then it is considered that the student obtained a total of 66 points for this subject.*

19.1.	Tests: points	Oral or written final exam
19.2.	Written essay/project assignment, oral or wrriten presentation: points	Preparation of a seminar paper or project assignment
19.3.	Final exam: points	

20.	Grading criteria (points/grade)	up to 59 points	5 (five) (F)
		60 to 68 points	6 (six) (E)
		69 to 76 points	7 (seven) (D)
		77 to 84 points	8 (eight) (C)
		85 to 92 points	9 (nine) (B)
		93 to 100 points	10 (ten) (A)
21.	Method of monitoring the quality of teaching process	Report from the Self-evaluation committee and anonymous student survey	

22. Literature

22.1. Mandatory literature

No.	Author	Title	Publisher	Year
1.	*Precision livestock farming applications, Wageningen Academic Publishers, 2015*			
2.	*Advances in Precision Livestock Farming, Burleigh Dodds Science Publishing Limited, 2022*			
3.	*Excerpts from scientific - professional literature*			

22.2. Additional literature

No.	Author	Title	Publisher	Year

		Excerpts from scientific - professional literature

Attachement no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Ecotoxicology**			
2.	Code	VME2023-18			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Second (II)	Semester	Fourth (IV)
7.	Course load expressed in ECTS credits	2.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Assist. Prof. Risto Uzunov, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course				
11.	Objectives of the course program (competencies) and learning outcomes	Introduction with basic principles, studying object, problems and approach to ecotoxicology resulting of emission of dangerous chemical matters in the living environment by human. Analyzing changes in the ecosystems resulting of released toxins in nature through practical examples and models. Final, ecological approach in risk assessment and management of toxicological pollutions prevention.			
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	Seminars: Basic terms in ecotoxicology, basic sources, types and characteristics of toxicants. Types and consequences of environmental pollution. Main groups of harmful chemical contaminants. Effects of chemicals on the structure of terrestrial ecosystems. Effects of chemical contaminants on the animals, food and feed. Wildlife population ecotoxicology. Bioaccumulation of hydrophobic organic pollutants. Chemical stress on the living environment with carbon and phosphorus bio-geochemical cycles. Biomonitoring. Ecotoxicology legislation and management. Practical teaching: Qualitative and quantitative determination of selected pollutants in environmental samples, biological matrices, food and feed			
13.	Inter-connection with other subjects (courses)				
14.	Detailed description of teaching and working methods for the	Seminars: discussion on topics from the course or written in the referent textbooks; active participation of the student			

	subject	(exposing personal opinions, ideas, discussion); oral presentation of a course's topic by the student's choice. Written assay: learning with use of referent textbooks and internet, preparing wtitten assay.			
15.	Total available time	50 hours Lectures: 1 hour /per eek (15 hours) Seminars: 1 hours/per week (15 hours)			
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	15	
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours	15	
		16.3.	Practice: total hours		
17.	Other forms of activities	17.1.	Project assignments: hours		
		17.2.	Individual tasks: hours		
		17.3.	Self-directed learning	20	
18.	Conditions for receiving authorization				
19.	Assessment methods Final exam is not predicted, except if student did not pass one of the tests.				
	19.1.	Tests: points		min 30 max 60	
	19.2.	Written essay/project assignment, oral or wrriten presentation: points		min 6 max 10	
	19.3.	Final exam: points		Not predicted	
20.	Grading criteria (points/grade)		up to 59 points	5 (five) (F)	
			60 to 68 points	6 (six) (E)	
			69 to 76 points	7 (seven) (D)	
			77 to 84 points	8 (eight) (C)	
			85 to 92 points	9 (nine) (B)	
			93 to 100 points	10 (ten) (A)	
21.	Method of monitoring the quality of teaching process		Report from the Self-evaluation committee and anonymous student survey		

22.	Literature					
	22.1.	Mandatory literature				
		No.	Author	Title	Publisher	Year
		1.	D. Connell, P. Lam, B. Richardson, R. Wu.	*Introduction to ecotoxicology*	Blackwell Publishing	2004
		2.	M.C. Newman, M.A. Unger:	*Fundamentals of Ecotoxicology*	Lewis Publishers	2003
		3.	Sylvia Moes, Kees van Gestel, & Gerco van Beek..	*Environmental Toxicology*	LibreText, Amsterdam	2019

		4.	William Hughes.	*Essentials of Environmental Toxicology*	Taylor & Francis	2005
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year
		1.	Wayne G. Landis, | Ruth M. Sofield, | Ming-Ho Yu	*Introduction to Environmental toxicology, Fourth edition*	Taylor & Francis Group	2011
		2.	Elena Zubcov, Antoaneta Ene.	*Ecotoxicological methodological guide for environmental monitoring: problematics, laboratory techniques and health risk investigation.*	Î.S. Firma Editorial-Poligrafică „Tipografia Centrală,	2021

Attachement no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Domestic Pet Computed Topography**			
2.	Code	VME2023-19			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Functional Morphology			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Third (III)	Semester	Fifth (V)
7.	Course load expressed in ECTS credits	2.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Lazo Pendovski, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course	Attended all subjects from the 1st to the 4th semester			
11.	Objectives of the course	The subject aims to familiarize students with the main principles of			

	program (competencies) and learning outcomes	veterinary general and clinical computed tomography in domestic pets. Special attention will be given to all organ systems and the analysis of CT scans, with and without contrast agents, and 3D reconstruction. Students will be acquainted with the construction and functionality of the device – the computed tomography scanner. This subject contributes to the needs of future veterinarians for their education, which they will apply in the implementation of correct diagnosis in domestic animals		
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	Content: – Basics of Computed Tomography – Introduction to the computed tomography scanner and its practice – Comparative anatomy of CT scans in cats, dogs, and other domestic pets – Computed tomography of the nasal cavity in dogs and cats and the most common diagnoses – Computed tomography of lymph nodes in dogs and cats and their comparison – Computed tomography of neoplasms in dogs and cats and their comparison – Computed tomography of the cranial cavity in dogs and cats and their comparison in different age categories – Computed tomography of joints in dogs and cats and their comparison in different age categories – Computed tomography in other domestic pets (exotic) – rabbit, hamster, guinea pig, lizard – Computed tomography of the digestive system in dogs and cats and their comparison – Computed tomography of the skeletal system in dogs and cats and their comparison – Computed tomography of the cardiovascular system in dogs and cats with and without contrast, and comparison of blood vessels – Computed tomography of dogs and cats with 3D reconstruction – Computed tomography in patients with findings of fractures –		
13.	Inter-connection with other subjects (courses)	Cell biology, Animal Anatomt 1 and 2, Animal Clinical Anatomy		
14.	Detailed description of teaching and working methods for the subject	**Seminars:** Discussion of topics from the syllabus or read in professional literature; active participation of students (interest in practical work with CT, expressing opinions, ideas, discussion); oral presentation of a chapter chosen by the student. **Seminar Paper:** Learning using professional literature, the internet, and the CT scanner itself, preparation of a project task (essay/poster); presentation and discussion of the seminar paper. Use of plastinated models (sections) and educational video materials.		
15.	Total available time	50 hours Theory classes: 1 hour/per week (15 hours) Practicals: 1 hour/per week (15 hours)		
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	15
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours	15
		16.3.	Practice: total hours	/
17.	Other forms of activities	17.1.	Project assignments: hours	/
		17.2.	Individual tasks: hours	/

		17.3.	Self-directed learning	20
18.	Conditions for receiving authorization	The student is obligated for active participation in all predicted activities for gaining points which are part of the final grading.		
19.	Assessment methods			
	19.1.	Tests: points		up to 60
	19.2.	Written essay/project assignment, oral or wrriten presentation: points		up to 10
	19.3.	Final exam: points		up to 30
20.	Grading criteria (points/grade)		up to 59 points	5 (five) (F)
			60 to 68 points	6 (six) (E)
			69 to 76 points	7 (seven) (D)
			77 to 84 points	8 (eight) (C)
			85 to 92 points	9 (nine) (B)
			93 to 100 points	10 (ten) (A)
21.	Method of monitoring the quality of teaching process		Report from the Self-evaluation committee and anonymous student survey	

22. Literature

22.1. Mandatory literature

No.	Author	Title	Publisher	Year
1.	*Evans E., de Lahunta A. Guide to the dissection of dog. W.B Saunders Company Philadelphia-London- Toronto. 1971*			
2.	*Jack S. Boyd and Callum Paterson. Colour Atlas of Clinical Anatomy of the Dog and Cat E-Book, 2nd Edition,* ***ISBN :*** *9780723435907*			
3.	*Tobias Schwarz and Jimmy Saunders. Veterinary computed tomography, Wiley-Blackwell, 2011*			

22.2. Additional literature

No.	Author	Title	Publisher	Year
1.	Dyce K.M., Sack W.O., Wensing C.J.G	*Textbook of veterinary anatomy*	W.B. Saunders Company. Philadelphia-London-Toronto-Sydmey_Montreal-Tokyo.	*1996*
2.	Evans E., Christensen G.	*Anatomy of the dog.*	W.B Saunders Company Philadelphia-London-Toronto, Gent, Belgium,	*1979*
3.	Nomina Anatomica Vetreinaria.	*Internationalcommittee on veterinary Gross anatomical Nomenclature*		*1992*

Attachement no. 3		**Integrated first and second cycle of studies**
1.	Program course title	**Veterinary Hematology**
2.	Code	VME2023-20
3.	Study program	Veterinary medicine
4.	Organizer of the study	Faculty of veterinary medicine-Skopje,

	program (unit, i.e. institute, department, section)	Ss Cyril and Methodius University in Skopje Department of Pathophysiology			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Third (III)	Semester	Fifth (V)
7.	Course load expressed in ECTS credits	2.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Igor Ulchar, PhD Prof. Irena Celeska, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course	For attending: Decision on Study Rules for first and second cycle integrated studies (undergraduate studies) and second cycle studies (postgraduate studies) at FVMS (UG 554, 26.07.2021). For passing the course: All prerequisite courses mentioned in point 13 + Pathophysiology 1, and propositions described in point 18.			
11.	Objectives of the course program (competences) and learning outcomes	Advanced introducing in physiology and pathophysiology of hematopoietic system and blood cells, i.e. expending knowledge gained in courses Pathophysiology 1 and 2 for: hematological laboratory methods; comparative hematology in various animal species; hematopoiesis; physiology and pathophysiology of hemostasis, erythrocytes, leucocytes and plasma proteins.			
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	**Seminars: teaching chapter (learning outcome)** 1.-2. Examination of blood and bone marrow (expending knowledge of hematological laboratory methods) 3.-4. Comparative hematology in common domestic mamals (expending knowledge of comparative hematology of common domestic mammal species) 5.-6. Comparative hematology in poultry and other mammal species (knowledge of comparative hematology in other various animal species) 7.-8. Hematopoiesis (expending knowledge of hematopoietic system) 9.-10. Coagulation and its disorders (expending knowledge of physiology and pathophysiology of hemostasis Physiology and pathophysiology of platelets (expending knowledge of physiology and pathophysiology of hemostasis) Physiology and pathophysiology of erythrocytes (expending knowledge of physiology and pathophysiology of erythrocytes)15-18. Anemias and polycythemias (expending knowledge of physiology and pathophysiology of erythrocytes) 20-21. Physiology and pathophysiology of granulocytes (neutrophils, eosinophils, basophils and mastocytes) (expending knowledge of physiology and pathophysiology of leucocytes) 22.-23 Physiology and pathophysiology of agranulocytes (monocytes and macrophages, lymphocytes and plasma cells) (expending knowledge of physiology and pathophysiology of leucocytes) 24.-25. Interpretation of leucocyte parameters (expending knowledge of physiology and pathophysiology of leucocytes) 25.-26. Leukemias in common domestic animals (expending knowledge of physiology and pathophysiology of leucocytes) 27.-28. Plasma proteins and dysproteinemias (expending knowledge of physiology and pathophysiology of plasma proteins) 29-30. Immunohematology (expending knowledge of immune mediated disorders of hematopoietic system)			
13.	Inter-connection with other subjects (courses)	Complementary: Pathophysiology 1and 2			
14.	Detailed description of teaching and working methods for the subject	**Seminars** Work in small group of students with their active participation (interactive teaching): sharing opinions, ideas, discussion.			

<table>
<tr><td></td><td></td><td colspan="3">Project assignments – supervised group work
Teaching sessions directed towards a smaller group of students during which they work as a team, on part of the theoretical aspects, prepared from manuscript notes, photocopied documents, articles and bibliographic references. Information is illustrated and knowledge extended by the oral presentation of audio-visual material, with opportunity for discussion with other students.
Individual tasks – supervised individual work
Teaching sessions directed towards a individual students during which they work on their own, on part of the theoretical aspects, prepared from manuscript notes, photocopied documents, articles and bibliographic references. Information is illustrated and knowledge extended by the oral presentation of audio-visual material, with opportunity for discussion with other students.
Self-directed learning – supervised self-learning
Sessions of individual students making use of defined teaching material provided by the Faculty or by course teacher(s). Gained knowledge is presented with written assay, which is matter of assessment by the course teacher.
Supervised group or individual work (project assignments, individual tasks and self-directed learning) is mandatory additional student activity, as optional opportunity for extending student’s knowledge about predicted learning outcomes. The type of this additional activity is chosen by students by their own, with consultation with course teacher(s), also the topic which would be concerned within this work. One student could realise various types of additional activities, but the total score of points gained with these activities could not be higher than maximal point score predicted for such activities in course programme. For realising additional activities, students have to use various digital teaching aids (e-learning) provided by the course teacher(s), or available on Faculty’s digital platform and from referent on-line databases, with access provided by the Faculty.
With additional activity student not expands his/her knowledge in certain learning outcome(s), but also improves his/her skills concerning information literacy and data management.
All types of teaching (seminars, additional activity) are in general organised with physical presence, but if necessary, they could be organised on-line or hybrid (physical presence + on-line).</td></tr>
<tr><td>15.</td><td>Total available time</td><td colspan="3">50 hours
Prcticals: 2 hours/per week (30 hours)</td></tr>
<tr><td rowspan="3">16.</td><td rowspan="3">Forms of teaching activities</td><td>16.1.</td><td>Theoretical lectures: hours</td><td></td></tr>
<tr><td>16.2.</td><td>Practical lectures (laboratory, auditorial), seminars, team work: hours</td><td>30</td></tr>
<tr><td>16.3.</td><td>Practice: total hours</td><td></td></tr>
<tr><td rowspan="3">17.</td><td rowspan="3">Other forms of activities</td><td>17.1.</td><td>Project assignments: hours</td><td rowspan="3">20</td></tr>
<tr><td>17.2.</td><td>Individual tasks: hours</td></tr>
<tr><td>17.3.</td><td>Self-directed learning</td></tr>
<tr><td>18.</td><td>Conditions for receiving authorization</td><td colspan="3">The minimum allowed number of unearned points due to justified absences according to Article 8 of the Decision on Study Rules for first and second cycle integrated studies (undergraduate studies) and second cycle studies (postgraduate studies) at FVMS (UG 554, 26.07.2021) is 4.5 points from seminars. The student could earn these points in agreement with the course teachers by completing homework assigned by the course teachers.</td></tr>
</table>

19.	Assessment methods				
	19.1.	Attendance and activity on seminars: points			Attendance on seminars: 15 points Activity on seminars: 15 points
	19.2.	Written essay/project assignment, oral or writen presentation: points			Project assignments / Individual tasks / Self-directed learning: 10 points
	19.3.	Final test: points			Final test (written): maximum 60 points
20.	Grading criteria (points/grade)		up to 59 points		5 (five) (F)
			60 to 68 points		6 (six) (E)
			69 to 76 points		7 (seven) (D)
			77 to 84 points		8 (eight) (C)
			85 to 92 points		9 (nine) (B)
			93 to 100 points		10 (ten) (A)
21.	Method of monitoring the quality of teaching process		Report from the Self-evaluation committee and anonymous student survey		

22.	Literature					
	22.1.	Mandatory literature				
		No.	Author	Title	Publisher	Year
		1.	DJ Weiss, KJ Wardrop (eds.)	*Schalm's Veterinary Hematology (6th Ed.)*	Wiley-Blackwell	2000
		2.	JW Harvey	*Veterinary Hematology, A Diagnostic Guide and Color Atlas*	Elsevier	2012
		3.		*Teaching aids in textual form prepared by the course teachers*		
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year
		1.	RL Cowell, RD Tyler, JH Meinkoth, DB DeNicola	*Diagnostic Cytology and Hematology of the Dog and Cat (3rd Ed.)*	Mosby Elsevier	2008
		2.	AG Burton	*Clinical Atlas of Small Animal Cytology and Hematology (2nd Ed.)*	Wiley Blackwell	2024
		3.				

Attachement no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Basis of Cytological Diagnostics**			
2.	Code	VME2023-21			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Pathophysiology			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Third (III)	Semester	Fifth (V)
7.	Course load expressed in ECTS credits	2.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Igor Ulchar, PhD Prof. Irena Celeska, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course	For attending: Decision on Study Rules for first and second cycle integrated studies (undergraduate studies) and second cycle studies (postgraduate studies) at FVMS (UG 554, 26.07.2021). For passing the course: All prerequisite courses mentioned in point 13 + Pathophysiology 1, and propositions described in point 18.			
11.	Objectives of the course program (competences) and learning outcome	Introducing with basic principles of cytology used in routine diagnostics of diseases. It comprises competencies (knowledge) of principles of cytological diagnostics and basic cytological techniques; cytological features of particular body products, organs and organic systems.			
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	**Seminars: teaching chapter (learning outcome)** 1.-2. Principles of cytological evaluation (knowledge of principles of cytological diagnostics and its basic techniques) 3.-4. Cytological techniques (knowledge of principles of cytological diagnostics and its basic techniques) 5.-6. Cytology of infectious agents (knowledge of cytological features of particular body products, organs and organic systems) 7.-8. Cytology of skin and subcutaneous lesions (knowledge of cytological features of particular body products, organs and organic systems) 9.-10. Cytology of lymphatic system: lymph nodes, spleen and thymus (knowledge of cytological features of particular body products, organs and organic systems) 11.-12. Cytology of cerebrospinal fluid (knowledge of cytological features of particular body products, organs and organic systems)13.-14. Cytology of head and neck: oropharynx, tonsils, saliva glands, thyroid and parathyroid gland (knowledge of cytological features of particular body products, organs and organic systems) 15.-16. Cytology of respiratory tract: nasal cavity, trachea, bronchi, lungs (knowledge of cytological features of particular body products, organs and organic systems) 17.-18. Cytology of pleural and peritoneal fluid (knowledge of cytological features of particular body products, organs and organic systems) 19.-20. Cytology of gastrointestinal tract: intestine, liver, pancreas (knowledge of cytological features of particular body products, organs and organic systems) 21.-22. Cytology of locomotorious system: skeletal muscles, bones (knowledge of cytological features of particular body products, organs and organic systems) 23.-24. Cytology of synovial fluid			

		(knowledge of cytological features of particular body products, organs and organic systems) 25.-26. Cytology of urinary tract: kidneys, urethra, bladder (knowledge of cytological features of particular body products, organs and organic systems) 27-28. Cytology of reproductive tract: vagina, uterus, prostate, testicles, mammary gland (knowledge of cytological features of particular body products, organs and organic systems) 29.-30. Cytology of sense organs: eye, ear (knowledge of cytological features of particular body products, organs and organic systems)
13.	Inter-connection with other subjects (courses)	Complementary: Pathophysiology 1 and 2
14.	Detailed description of teaching and working methods for the subject	**Seminars** Work in small group of students with their active participation (interactive teaching): sharing opinions, ideas, discussion. **Project assignments – supervised group work** Teaching sessions directed towards a smaller group of students during which they work as a team, on part of the theoretical aspects, prepared from manuscript notes, photocopied documents, articles and bibliographic references. Information is illustrated and knowledge extended by the oral presentation of audio-visual material, with opportunity for discussion with other students. **Individual tasks – supervised individual work** Teaching sessions directed towards a individual students during which they work on their own, on part of the theoretical aspects, prepared from manuscript notes, photocopied documents, articles and bibliographic references. Information is illustrated and knowledge extended by the oral presentation of audio-visual material, with opportunity for discussion with other students. **Self-directed learning – supervised self-learning** Sessions of individual students making use of defined teaching material provided by the Faculty or by course teacher(s). Gained knowledge is presented with written assay, which is matter of assessment by the course teacher. Supervised group or individual work (project assignments, individual tasks and self-directed learning) is mandatory additional student activity, as optional opportunity for extending student's knowledge about predicted learning outcomes. The type of this additional activity is chosen by students by their own, with consultation with course teacher(s), also the topic which would be concerned within this work. One student could realise various types of additional activities, but the total score of points gained with these activities could not be higher than maximal point score predicted for such activities in course programme. For realising additional activities, students have to use various digital teaching aids (e-learning) provided by the course teacher(s), or available on Faculty's digital platform and from referent on-line databases, with access provided by the Faculty. With additional activity student not expands his/her knowledge in certain learning outcome(s), but also improves his/her skills concerning information literacy and data management. All types of teaching (seminars, additional activity) are in general organised with physical presence, but if necessary, they could be organised on-line or hybrid (physical presence + on-line).
15.	Total available time	50 hours Practicals: 2 hours/per week (30 hours)
16.	Forms of teaching activities	16.1. Theoretical lectures: hours

		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours	30
		16.3.	Practice: total hours	
17.	Other forms of activities	17.1.	Project assignments: hours	20
		17.2.	Individual tasks: hours	
		17.3.	Self-directed learning	
18.	Conditions for receiving authorization	The minimum allowed number of unearned points due to justified absences according to Article 8 of the Decision on Study Rules for first and second cycle integrated studies (undergraduate studies) and second cycle studies (postgraduate studies) at FVMS (UG 554, 26.07.2021) is 4.5 points from seminars. The student could earn these points in agreement with the course teachers by completing homework assigned by the course teachers.		
19.	Assessment methods			
	19.1.	Attendance and activity on seminars: points		Attendance on seminars: 15 points Activity on seminars: 15 points
	19.2.	Written essay/project assignment, oral or writen presentation: points		Project assignments / Individual tasks / Self-directed learning: 10 points
	19.3.	Final test: points		Final test (written): maximum 60 points
20.	Grading criteria (points/grade)		up to 59 points	5 (five) (F)
			60 to 68 points	6 (six) (E)
			69 to 76 points	7 (seven) (D)
			77 to 84 points	8 (eight) (C)
			85 to 92 points	9 (nine) (B)
			93 to 100 points	10 (ten) (A)
21.	Method of monitoring the quality of teaching process		Report from the Self-evaluation committee and anonymous student survey	

22. Literature

22.1. Mandatory literature

No.	Author	Title	Publisher	Year
1.	LC Sharkey, MJ Radin, D Seelig	*Veterinary Cytology*	Wiley Blackwell	2021
2.	RE Raskin, DJ Meyer	*Canine and Feline Cytology: A Color Atlas and Interpretation Guide (2nd Ed.)*	Saunders Elsevier	2010
3.		*Teaching aids in textual form prepared by the course teachers*		

22.2. Additional literature

No.	Author	Title	Publisher	Year

		1.	KP Freeman	*Veterinary Cytology Dog, Cat, Horse and Cow*	Manson Publishing	2007
		2.	RL Cowell, RD Tyler, JH Meinkoth, DB DeNicola	*Diagnostic Cytology and Hematology of the Dog and Cat (3rd Ed.)*	Mosby Elsevier	2008
		3.	AG Burton	*Clinical Atlas of Small Animal Cytology and Hematology (2nd Ed.)*	Wiley Blackwell	2024

Attachement no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Environmental Protection**			
2.	Code	VME2023-22			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Animal Hygiene and Environmental Protection			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Third (III)	Semester	Fifth (V)
7.	Course load expressed in ECTS credits	2.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Assist. Prof. Miroslav Kjosevski, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course	Listened to Animal Hygiene 1 and 2			
11.	Objectives of the course program (competencies) and learning outcomes	The main objective of this course is for students to become more familiar with the types and methods of environmental pollution during the practice of everyday veterinary activity and animal husbandry; Contaminants released during animal breeding and the animal industry with a brief introduction to the basic concepts of ecology; The impact of animal husbandry on climate change.			
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	Ecology - subject of study and basic concepts. Organizations and institutions in the field of environmental protection. Pollution and protection of atmospheric air. Water pollution and protection. Soil degradation and protection. Solid waste. Radioactive substances and the environment. Chemistry and environment. Noise and the environment. Environmental monitoring.			

<table>
<tr><td></td><td></td><td colspan="3">Interaction between animals and the environment, human influence during animal husbandry on the environment; environmentally sustainable animal husbandry systems; impact of specific farm systems on the environment; Emissions in the environment; preventive strategies for environmental protection while raising animals; Environmental Protection and Veterinary Medicine.</td></tr>
<tr><td>13.</td><td>Inter-connection with other subjects (courses)</td><td colspan="3"></td></tr>
<tr><td>14.</td><td>Detailed description of teaching and working methods for the subject</td><td colspan="3">Theoretical lectures: interactive lectures in a large group with discussion, student presentations and their additional activation
Practical lectures: work in small groups and field visits
Seminar paper: learning using professional literature and the Internet, preparation of a seminar paper (essay/poster); presentation and discussion of the seminar paper.
Project tasks: work on an individual/group project based on research and measurements with presentation of results</td></tr>
<tr><td>15.</td><td>Total available time</td><td colspan="3">50 hours
Theory classes: 1 hour/per week (15 hours)</td></tr>
<tr><td rowspan="3">16.</td><td rowspan="3">Forms of teaching activities</td><td>16.1.</td><td>Theoretical lectures: hours</td><td>15</td></tr>
<tr><td>16.2.</td><td>Practical lectures (laboratory, auditorial), seminars, team work: hours</td><td></td></tr>
<tr><td>16.3.</td><td>Practice: total hours</td><td></td></tr>
<tr><td rowspan="3">17.</td><td rowspan="3">Other forms of activities</td><td>17.1.</td><td>Project assignments: hours</td><td>20</td></tr>
<tr><td>17.2.</td><td>Individual tasks: hours</td><td></td></tr>
<tr><td>17.3.</td><td>Self-directed learning</td><td>15</td></tr>
<tr><td>18.</td><td>Conditions for receiving authorization</td><td colspan="3">To obtain a signature, the student is obliged to attend at least 70% of the theoretical and practical lectures held.
The student is obliged to have acquired the right to sign and to pass the two continuous tests from the practical part (minimum 6 points scored on one continuous test) in order to be able to take the theoretical - final part of the exam.</td></tr>
<tr><td>19.</td><td colspan="4">Assessment methods

Scoring the student's activities:

<table>
<tr><td rowspan="2">Type of activity</td><td colspan="2">Points</td></tr>
<tr><td>minimum</td><td>maximum</td></tr>
<tr><td>Attendance at theoretical lectures</td><td>12</td><td>15</td></tr>
<tr><td>Accepted seminar paper or project assignment</td><td>27</td><td>45</td></tr>
<tr><td>Passed theoretical part/final exam</td><td>21</td><td>40</td></tr>
<tr><td>Total points required to pass the exam*</td><td>60</td><td>100</td></tr>
</table>
Activity at the lectures (theoretical and practical) and the seminar paper/project assignment are optional and the student decides independently whether to join the activities and acquire additional points.
*When scoring points with decimal values, if the decimal value is equal to or greater than 5, then it</td></tr>
</table>

	is rounded up to the whole number with a higher value. For example, If the student obtained 65.5 points, then it is considered that the student obtained a total of 66 points for this subject.			
	19.1.	Tests: points		Oral or written final exam
	19.2.	Written essay/project assignment, oral or wrriten presentation: points		Preparation of a seminar paper or project assignment
	19.3.	Final exam: points		
20.	Grading criteria (points/grade)		up to 59 points	5 (five) (F)
			60 to 68 points	6 (six) (E)
			69 to 76 points	7 (seven) (D)
			77 to 84 points	8 (eight) (C)
			85 to 92 points	9 (nine) (B)
			93 to 100 points	10 (ten) (A)
21.	Method of monitoring the quality of teaching process		Report from the Self-evaluation committee and anonymous student survey	
22.	Literature			
	22.1.	Mandatory literature		
		No.	Author	Title	Publisher	Year
		1. *Animal farming and environmental interactions in the Mediterranean region, 2012* 2. *Livestock Production And Climate Change, 2015* 3. *Excerpts from scientific - professional literature*				
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year
		Excerpts from scientific - professional literature				

Attachement no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Measuring Animal Behaviour**			
2.	Code	VME2023-23			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Animal Hygiene and Environmental Protection			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Third (III)	Semester	Seventh (VII)
7.	Course load expressed in ECTS credits	2.0			

8.	Teacher (leading teacher, in case of multiple teacher)	Assist. Prof. Miroslav Kjosevski, PhD		
9.	Teaching language	English		
10.	Necessary prerequisites for attending and passing the course	Passed exams: Biostatistics Listened to Animal Behaviour and Welfare		
11.	Objectives of the course program (competencies) and learning outcomes	The aim of the course is for students to learn techniques for measuring and analyzing animal behaviour; to establish appropriate methodologies for observation, data collection, analysis, and interpretation of animal behaviour; to apply quantitative and qualitative approaches in the analysis and research of animal behaviour; to design behavioural studies; to become familiar with behavioural metrics and data collection and analysis technologies; and to publish findings from behavioural studies.		
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	Measuring animal behaviour: objectives, needs, and specifics. Scientific approaches to behaviour measurement. Selection of research questions in behaviour – Tinbergen's questions, hypotheses, and predictions. Designing studies on animal behaviour. Ethics and legislation in behavioural studies. Behavioural metrics. Recording methodology. Recording technology. Individual and group behaviours. Measurement quality. Data analysis. Interpretation of results and publications.		
13.	Inter-connection with other subjects (courses)			
14.	Detailed description of teaching and working methods for the subject	Theoretical lectures: interactive lectures in a large group with discussion, student presentations and their additional activation Practical lectures: work in small groups and field visits Seminar paper: learning using professional literature and the Internet, preparation of a seminar paper (essay/poster); presentation and discussion of the seminar paper. Project tasks: work on an individual/group project based on research and measurements with presentation of results		
15.	Total available time	50 hours Theory classes: 1 hour/per week (15 hours) Practicals: 1 hour/per week (15 hours)		
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	15
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours	15
		16.3.	Practice: total hours	
17.	Other forms of activities	17.1.	Project assignments: hours	
		17.2.	Individual tasks: hours	
		17.3.	Self-directed learning	20
18.	Conditions for receiving authorization	To obtain a signature, the student is obliged to attend at least 70% of the theoretical and practical lectures held. The student is obliged to have acquired the right to sign and to pass the two continuous tests from the practical part (minimum 6 points scored on one continuous test) in order to be able to take the theoretical - final part of the exam.		

19. Assessment methods

Activity at practical lectures

Type of activity	*Points*	
	minimum	*maximum*
Attendance at theoretical lectures	12	15
Attendance at practical lectures	12	15
Activity at practical lectures	0	10
Accepted seminar paper or project assignment	15	20
Passed theoretical part/final exam	21	40
Total points required to pass the exam*	60	100

Activity at the lectures (theoretical and practical) and the seminar paper/project assignment are optional and the student decides independently whether to join the activities and acquire additional points.

**When scoring points with decimal values, if the decimal value is equal to or greater than 5, then it is rounded up to the whole number with a higher value. For example, If the student obtained 65.5 points, then it is considered that the student obtained a total of 66 points for this subject.*

19.1.	Tests: points	Oral or written final exam
19.2.	Written essay/project assignment, oral or wrriten presentation: points	Preparation of a seminar paper or project assignment
19.3.	Final exam: points	

20.	Grading criteria (points/grade)	up to 59 points	5 (five) (F)
		60 to 68 points	6 (six) (E)
		69 to 76 points	7 (seven) (D)
		77 to 84 points	8 (eight) (C)
		85 to 92 points	9 (nine) (B)
		93 to 100 points	10 (ten) (A)
21.	Method of monitoring the quality of teaching process	Report from the Self-evaluation committee and anonymous student survey	

22. Literature

22.1. Mandatory literature

No.	Author	Title	Publisher	Year
1. *Measuring Behaviour: an Introductory Guide, Cambridge University Press, 2021* 2. *Exploring animal social networks, Princeton University Press, 2008* 3. *Excerpts from scientific - professional literature*				

22.2. Additional literature

No.	Author	Title	Publisher	Year

		Excerpts from scientific - professional literature

Attachement no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Dermatopathology**			
2.	Code	VME2023-24			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Pathology and Forensic Medicine			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Fourth (IV)	Semester	Seventh (VII)
7.	Course load expressed in ECTS credits	2.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Dr. Trpe Ristoski, PhD Assoc. Prof. Ivica Gjurovski, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course	Successfully validated attendance of all of the subjects Basic Pathology and Special pathological morphology			
11.	Objectives of the course program (competencies) and learning outcomes	Skin changes are one of the most common clinical cases in veterinary clinics, and because of this dermatopathology has a special importance in veterinary medicine. Considering the morphological and the physiological characteristics of the skin, almost every systemic disorder of the body is reflected on the skin quality. A particularly important part of the teaching would be the taking material for the laboratory examinations, as well as laboratory techniques for the diagnosis of skin changes. In addition to infectious skin diseases, students will pay particular attention to allergic disorders, metabolic disorders, as well as the influence of nutrition on the quality of the skin.			
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	Theoretical lectures: Skin structure and function; Diagnostic techniques; Bacterial diseases; Fungal and parasitic diseases; Viral diseases; Endocrine and metabolic diseases; Allergic and autoimmune diseases; Nutrition and diseases of the skin; Hereditary diseases; Skin tumors; Therapy			
13.	Inter-connection with other subjects (courses)				
14.	Detailed description of teaching and working methods for the subject	Theoretical teaching: a combination of interactive theoretical teaching (lectures in a large group with discussion and engagement of students), review and discussion of clinical cases, morphological			

		and pathological characteristics of the skin; pathohistological and cytological diagnosis of skin changes; differential diagnosis and treatment of skin changes. Seminar paper: learning by using professional literature and the Internet, preparation of a seminar paper (essay/poster); presentation and discussion of the seminar paper.		
15.	Total available time	50 hours Theory classes: 2 hours/week (30 hours)		
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	30
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours	
		16.3.	Practice: total hours	
17.	Other forms of activities	17.1.	Project assignments: hours	10
		17.2.	Individual tasks: hours	
		17.3.	Self-directed learning	10
18.	Conditions for receiving authorization	The student is responsible for actively following all the planned activities with which he earns points as part of the final assessment. Preparation of a seminar paper and presentation on the topic: Structure and function of the skin; Diagnostic techniques; Bacterial diseases; Fungal and parasitic diseases; Viral diseases. Endocrine and metabolic diseases; Allergic and autoimmune diseases; Nutrition and skin diseases; Hereditary diseases; Skin tumors; Therapy. Final oral exam		

19.	Assessment methods Class attendance and activity min.5 maximum 10 points			
	19.1.	Tests:		
	19.2.	Written essay/project assignment, oral or wrriten presentation: points		Minimum 5, Maximum 10 points
	19.3.	Final exam: points		Minimum 50 Maximum 80 points
20.	Grading criteria (points/grade)		up to 59 points	5 (five) (F)
			60 to 68 points	6 (six) (E)
			69 to 76 points	7 (seven) (D)
			77 to 84 points	8 (eight) (C)
			85 to 92 points	9 (nine) (B)
			93 to 100 points	10 (ten) (A)
21.	Method of monitoring the quality of teaching process		Report from the Self-evaluation committee and anonymous student survey	

22.	Literature					
	22.1.	Mandatory literature				
		No.	Author	Title	Publisher	Year

		1.		*Small Animal Dermatology: A Color Atlas and Therapeutic Guide - Muller and Kirk's Small Animal Dermatology - Clinical Dermatology, An Issue of Veterinary Clinics: Small Animal Practice*	Vet. fac. Skopje	
		2.	Jubb K., Kennedy P., Plummer N	*Pathology of domestic animals*		1992
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year
		1.				
		2.				
		3.				

Attachement no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Animal Product Supply Chain Management**			
2.	Code	VME2023-25			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Rural Economy, Management andBbiostatistics			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Fourth (IV)	Semester	Seventh (VII)
7.	Course load expressed in ECTS credits	2.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Blagica Sekovska, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for				

	attending and passing the course			
11.	Objectives of the course program (competencies) and learning outcomes	Supply chains are actual topic in EU. One of the basic tasks of veterinary profession is to observe animal products through these chains starting with production itself, and up to final consummation of the product. Because of that, it is necessary to know all rules and economic aspects of these chains. The aim of this course is to introduce in detail the future veterinarian with supply chains, their importance, meaning, economic aspects, organization rules and regulation. This course is especially recommended for students who would work in domain of veterinary inspection and veterinary administration.		
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	Definition of animal products supply chains. Types of animal products supply chains. Measures for improvement of animal products supply chains. Distribution of animal products. Types of distribution. Transport and logistics. Planning of animal products supply chains. Making decisions about animal products supply chains (financial decisions, security decisions, strategic decisions etc.). Organization of animal products supply chains. Control of animal products supply chains		
13.	Inter-connection with other subjects (courses)			
14.	Detailed description of teaching and working methods for the subject	Seminars: discussion on topics from the course or written in the referent textbooks; active participation of the student (exposing personal opinions, ideas, discussion); oral presentation of a course's topic by the student's choice. Written assay: learning with use of referent textbooks and internet, preparing wtitten assay		
15.	Total available time	50 hours Seminars: 1 hour/per week (15 hours)		
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours	15
		16.3.	Practice: total hours	
17.	Other forms of activities	17.1.	Project assignments: hours	
		17.2.	Individual tasks: hours	
		17.3.	Self-directed learning	35
18.	Conditions for receiving authorization			
19.	Assessment methods The student is obligated for active participation in all predicted activities for gaining points which are part of the final grading.			
	19.1.	Tests: points		min.30 max.60
	19.2.	Written essay/project assignment, oral or wrriten presentation: points		min.6 max.10
	19.3.	Final exam: points		
20.	Grading criteria (points/grade)		up to 59 points	5 (five) (F)
			60 to 68 points	6 (six) (E)
			69 to 76 points	7 (seven) (D)
			77 to 84 points	8 (eight) (C)

				85 to 92 points		9 (nine) (B)
				93 to 100 points		10 (ten) (A)
21.	Method of monitoring the quality of teaching process			Report from the Self-evaluation committee and anonymous student survey		
22.	Literature					
	22.1.	Mandatory literature				
		No.	Author	Title	Publisher	Year
		1.	Y. Narahari and S. Biswas	*Supply Chain Management: Modeling and Decision Making*	Indian Instituteof Science, Bangalore	
		2.	Blagica Sekovska	*Teaching materials*		
		3.				
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year
		1.				
		2.				
		3.				

Attachment no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Tropical Parasitic Diseases**			
2.	Code	VME2023-26			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss. Cyril and Methodius University in Skopje Department of Parasitology and Parasitic Diseases			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Fourth (IV)	Semester	Seventh (VII)
7.	Course load expressed in ECTS credits	2.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Jovana Stefanovska, PhD Prof. Aleksandar Cvetkovikj, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course				

11.	Objectives of the course program (competencies) and learning outcomes	The course seminars aim to introduce the students with the morphology and biology of parasites from tropical and subtropical areas and with their epidemiology, pathogenesis, clinical manifestations, as well as the methods of diagnosis, treatment and eradication of the diseases they cause. Students will learn the clinical approach to tropical parasitic diseases important in public health and their laboratory diagnostics. Through this subject, students will be able to independently decide on the principle of prevention, treatment and eradication of the parasites of veterinary and public health significance in tropical and subtropical areas.		
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	Seminars: East Coast fever, malignant sheep theileriosis. Trypanosomiases (nagana, surra, goufar, murrina, derrengadera, mal de caderas, Chagas disease). Fasciolosis, clonorchiasis, paragonimiasis, schistosmiasis. Eosonofilic meningoencefalitis, gnatostomiasis, dracunculosis. Dirofilariasis, elephantiasis, onhocerciasis, loiasis, stephanofilariasis. Pulicosis (*Tunga penetrans*), myiases (*Dermatobia hominis*, *Cordylobia anthropophaga*, *Cochliomyia hominivorax*, *Lucilia* spp., *Calliphora* spp., *Phormia* spp., *Chrysomyia* spp., *Auchmeromyia luteola*).		
13.	Inter-connection with other subjects (courses)	Parasitology and Parasitic Diseases 1 and 2.		
14.	Detailed description of teaching and working methods for the subject	Seminars: interactive (lectures in large group with discussion and active participation of the students). Written essay: learning with use of referent textbooks and internet, preparing written essay; presentation and discussion about the written essay.		
15.	Total available time	50 hours Seminars: 2 hours/per week (30 hours)		
16.	Forms of teaching activities	16.1.	Seminars: hours	30
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours	
		16.3.	Practice: total hours	
17.	Other forms of activities	17.1.	Project assignments: hours	
		17.2.	Individual tasks: hours	
		17.3.	Self-directed learning	20
18.	Conditions for receiving authorization			
19.	Assessment methods			
	19.1.	Tests: points		Presence: 11-20 points
	19.2.	Written essay/project assignment, oral or written presentation: points		15-30 points
	19.3.	Final exam: points		34-50 points
20.	Grading criteria (points/grade)		up to 59 points	5 (five) (F)
			60 to 68 points	6 (six) (E)
			69 to 76 points	7 (seven) (D)
			77 to 84 points	8 (eight) (C)
			85 to 92 points	9 (nine) (B)
			93 to 100 points	10 (ten) (A)
21.	Method of monitoring the quality of teaching process	Report from the Self-evaluation committee and anonymous student survey		
22.	Literature			

	22.1.	Mandatory literature				
		No.	Author	Title	Publisher	Year
		1.	Domenico Otranto, Richard Wall	*Veterinary Parasitology, 5th Edition*	Wiley Blackwell	2024
		2.	Anne M. Zajac, Gary A. Conboy, Susan E. Little, Mason V. Reichard	*Veterinary clinical parasitology, 9th Edition*	Wiley Blackwell	2021
		3.	Heinz Melhorn	*Animal parasites - diagnosis, treatment, prevention,*	Springer international publishing	2016
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year
		1.	Dwight D. Bowman.	*Georgis' Parasitology for Veterinarians, 11th Edition*	Elsevier Inc.	2021
		2.	Heinz Melhorn	*Encyclopedia of parasitology, 4th Edition*	Springer international publishing	2016

Attachement no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Molecular Mechanisms of General Anesthesia**			
2.	Code	VM2023-27			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department for Biochemistry and Cell Biology Department of Surgery, Orthopedics and Ophthalmology			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Fourth (IV)	Semester	Seventth (VII)
7.	Course load expressed in ECTS credits	2.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Velimir Stojkovski, PhD Prof. Ksenija Ilievska, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the				

	course			
11.	Objectives of the course program (competencies) and learning outcomes	Students learn about the impact of anesthetics on central nervous system neurodepression system through a detailed study of neurotransmission processes (inhibitory neurotransmission and excitatory neurotransmission). The biochemical mechanisms of action are also being studied general anesthetics in separate stages of anesthesia, different receptors and neuronal pathways. Students study the impact of anesthetics at the molecular and cellular level, through familiarization with their influence on glutamate, serotonin, norepinephrine, dopamine, acetylcholine, GABA, as well as the influence of free neurotransmitters on ion channel receptors and the control of the flow of ions.		
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	Construction of the neural synapse. Neurotransmitter receptors. Ionotropic receptors. Metabotropic receptors. The influence of anesthetics on neurotransmitter receptors. Glutamate receptors. Serotonin receptors. Norepinephrine receptors. Dopamine receptors. Acetylcholine receptors. GABA receptors. Ion channels. Callum ducts. Sodium channels. The influence of anesthetics on the lipid membrane. Neuromodulatory systems. Functional interactions between neuromodulatory systems.		
13.	Inter-connection with other subjects (courses)	Biochemistry, Clinical biochemistry and Anesthesia and Intensive Care		
14.	Detailed description of teaching and working methods for the subject	Theory classes: Interactive classes (lectures in large groups or mentored classes depending on the number of students, with discussion and active participation of the students,). Practicals: Practicals and other ways of work with smaller groups		
15.	Total available time	50 hours Theory classes: 1 hours/per week (15 hours) Project tasks: 1 hours/per week (15 hours)		
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	15
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours	
		16.3.	Practice: total hours	
17.	Other forms of activities	17.1.	Project assignments: hours	15
		17.2.	Individual tasks: hours	
		17.3.	Self-directed learning	20
18.	Conditions for receiving authorization	The presence of the student at theory classes and completed project tasks is a condition for obtaining a signature confirming attendance from the subject professor. Class attendance will not be counted if the student is absent for more than 30% of the classes. The student is exempt from the final exam by completed project tasks and earning a minimum score in each continuous test and achieving a total of at least 60 points across all assessments. The student can take the final exam by obtaining a signature confirming attendance in the theory and completed project tasks.		
19.	Assessment methods The student is obligated for active participation in all predicted activities for gaining points			

which are part of the final grading.
Tests (two): written
Final exam: oral or written

Type of activity	Points	
	minimum	maximum
Attendance on theory classes	6	10
Activity	6	10
Project tasks	6	10
Test I	12	20
Test II	12	20
Final exam	18	30
Total:	60	100

19.1.	Tests: points	
19.2.	Written essay/project assignment, oral or wrriten presentation: points	
19.3.	Final exam: points	

20.	Grading criteria (points/grade)	up to 59 points	5 (five) (F)
		60 to 68 points	6 (six) (E)
		69 to 76 points	7 (seven) (D)
		77 to 84 points	8 (eight) (C)
		85 to 92 points	9 (nine) (B)
		93 to 100 points	10 (ten) (A)
21.	Method of monitoring the quality of teaching process	Report from the Self-evaluation committee and anonymous student survey	

Literature

Mandatory literature

	No.	Author	Title	Publisher	Year
22.1.	1.		*Teaching materials prepared by the course teachers*		
	2.				
	3.				

Additional literature

	No.	Author	Title	Publisher	Year
22.	1.	Pickel V., Segal M.	*The synapse: Structure and function*	Elsevier	2014
22.2.	2.	Oliver Von Bohlen und Halbach, Dermietzel R.	*Neurotransmitters and Neuromodulators: Handbook of Receptors and Biological Effects, 2nd ed.*	Wiley-VCH	2006
	3.				

Attachment no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Veterinary Entomology**			
2.	Code	VME2023-28			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss. Cyril and Methodius University in Skopje Department of Parasitology and Parasitic Diseases			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Fourth (IV)	Semester	Eight (VIII)
7.	Course load expressed in ECTS credits	2.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Jovana Stefanovska, PhD Prof. Aleksandar Cvetkovikj, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course				
11.	Objectives of the course program (competencies) and learning outcomes	The course seminars aim to broaden the knowledge of students about the importance of arthropods as ectoparasites and vectors of infectious and parasitic disease agents in animals and humans. With the acquired knowledge, the students will be able to identify the most important taxonomic groups of arthropods of veterinary importance and will learn the arthropod control techniques in order to protect the human and animal population from vector-borne diseases.			
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	Seminars: Importance and diversity of arthropods. Insects with veterinary significance. Arachnids with veterinary significance. Direct impact of arthropods on the organism. Arthropods as vectors of diseases. Epidemiology and prevention of vector-borne diseases. Vector control. Control and treatment of ectoparasites.			
13.	Inter-connection with other subjects (courses)	Parasitology and Parasitic Diseases 1 and 2.			
14.	Detailed description of teaching and working methods for the subject	Seminars: interactive (lectures in large group with discussion and active participation of the students). Written essay: learning with use of referent textbooks and internet, preparing written essay; presentation and discussion about the written essay.			
15.	Total available time	50 hours Seminars: 2 hours/per week (30 hours)			
16.	Forms of teaching activities	16.1.	Seminars: hours		30
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours		
		16.3.	Practice: total hours		
17.	Other forms of activities	17.1.	Project assignments: hours		

		17.2.	Individual tasks: hours	
		17.3.	Self-directed learning	20
18.	Conditions for receiving authorization			
19.	Assessment methods			
	19.1.	Tests: points	Presence: 11-20 points	
	19.2.	Written essay/project assignment, oral or written presentation: points	15-30 points	
	19.3.	Final exam: points	34-50 points	
20.	Grading criteria (points/grade)		up to 59 points	5 (five) (F)
			60 to 68 points	6 (six) (E)
			69 to 76 points	7 (seven) (D)
			77 to 84 points	8 (eight) (C)
			85 to 92 points	9 (nine) (B)
			93 to 100 points	10 (ten) (A)
21.	Method of monitoring the quality of teaching process		Report from the Self-evaluation committee and anonymous student survey	

22. Literature

22.1. Mandatory literature

No.	Author	Title	Publisher	Year
1.	Gary R. Mullen, Lance A. Durden (editors)	*Medical and Veterinary Entomology, 3rd Edition*	Academic Press	2019
2.	Ralph E. Williams	*Veterinary Entomology - Livestock and Companion Animals*	CRC Press	2010
3.				

22.2. Additional literature

No.	Author	Title	Publisher	Year
1.	Richard Wall, David, Shearer	*Veterinary Ectoparasites: Biology, Pathology and Control, 2nd Edition*	Blackwell Science	2001
2.	Richard Wall, David, Shearer	*Veterinary Entomology - Arthropod Ectoparasites of Veterinary Importance.*	Chapman & Hall	1997

Attachement no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Rational Application of Antimicrobial Drugs**			
2.	Code	VME2023-29			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Pharmacology and Toxicology			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Fourth (IV)	Semester	Eight (VIII)
7.	Course load expressed in ECTS credits	2.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Romel Velev, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course				
11.	Objectives of the course program (competencies) and learning outcomes	The aim of this course is to acquaint the student the need for increased awareness in prescribing of antimicrobial drugs, to introduce the problem of antibiotic resistance and the basic principles of proper use of antimicrobial drugs integral as part of good veterinary practice.			
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	Introducing the European platform for responsible use of the drugs in animals. Legislative for introducing the antimicrobial drugs in market. Obtaining health for the animals. Principles of appropriate use of antimicrobial drugs. Choice of the appropriate antibiotic. Monitoring of the antibiotic use. Antibiotic resistance. Antibiotic alternative and integrated programs for control of the diseases.			
13.	Inter-connection with other subjects (courses)	General and Special Pharmacology			
14.	Detailed description of teaching and working methods for the subject	Seminars: discussion on topics from the course or written in the referent textbooks; active participation of the student (exposing personal opinions, ideas, discussion); oral presentation of a course's topic by the student's choice. Written assay: learning with use of referent textbooks and internet, preparing wtitten assay.			
15.	Total available time	50 hours Theory classes: 2 hours/per week (30 hours)			
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours		30
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours		
		16.3.	Practice: total hours		
17.	Other forms of activities	17.1.	Project assignments: hours		
		17.2.	Individual tasks: hours		

		17.3.	Self-directed learning	20
18.	Conditions for receiving authorization			
19.	Assessment methods The student is obligated for active participation in all predicted activities for gaining points which are part of the final grading.			
	19.1.	Tests: points		min.30 max.60
	19.2.	Written essay/project assignment, oral or wrriten presentation: points		min.6 max. 10
	19.3.	Final exam: points		Not predicted, except if student did not pass the test
20.	Grading criteria (points/grade)		up to 59 points	5 (five) (F)
			60 to 68 points	6 (six) (E)
			69 to 76 points	7 (seven) (D)
			77 to 84 points	8 (eight) (C)
			85 to 92 points	9 (nine) (B)
			93 to 100 points	10 (ten) (A)
21.	Method of monitoring the quality of teaching process		Report from the Self-evaluation committee and anonymous student survey	

22.

Literature

22.1. Mandatory literature

No.	Author	Title	Publisher	Year
1.	FVE	*Antibiotic Resistance & Prudent use of Antibiotics in Veterinary Medicine*		
2.	ERUMA	*Best Practice Framework for the use of Antimicrobials in Food-Producing Animals in the EU*		
3.				

22.2. Additional literature

No.	Author	Title	Publisher	Year
1.				
2.				
3.				

Attachment no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Veterinary Clinical Parasitology**			
2.	Code	VME2023-30			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss. Cyril and Methodius University in Skopje Department of Parasitology and Parasitic Diseases			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Fourth (IV)	Semester	Eight (VIII)
7.	Course load expressed in ECTS credits	2.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Jovana Stefanovska, PhD Prof. Aleksandar Cvetkovikj, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course				
11.	Objectives of the course program (competencies) and learning outcomes	The course seminars aim to broaden the knowledge of students for the morphological identification of the parasites causing diseases in animals, as well as the application of current parasitological, immunological and molecular methods in the diagnosis of diseases. With the acquired knowledge, the students will be able to independently perform laboratory diagnostics of the most important parasitic diseases in veterinary medicine.			
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	Seminars: Coprological examination for diagnosis of parasitoses. Detection of protozoa and helminths in the skin, eyes, urinary and genital system. Detection of parasites in the blood. Immunological and molecular diagnostic methods in veterinary parasitology. Diagnosis of arthropod parasites.			
13.	Inter-connection with other subjects (courses)	Parasitology and Parasitic Diseases 1 and 2.			
14.	Detailed description of teaching and working methods for the subject	Seminars: interactive (lectures in large group with discussion and active participation of the students). Written essay: learning with use of referent textbooks and internet, preparing written essay; presentation and discussion about the written essay.			
15.	Total available time	50 hours Seminars: 2 hours/per week (30 hours)			
16.	Forms of teaching activities	16.1.	Seminars: hours		30
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours		
		16.3.	Practice: total hours		
17.	Other forms of activities	17.1.	Project assignments: hours		
		17.2.	Individual tasks: hours		

		17.3.	Self-directed learning	20
18.	Conditions for receiving authorization			
19.	Assessment methods			
	19.1.	Tests: points	Presence: 11-20 points	
	19.2.	Written essay/project assignment, oral or written presentation: points	15-30 points	
	19.3.	Final exam: points	34-50 points	
20.	Grading criteria (points/grade)		up to 59 points	5 (five) (F)
			60 to 68 points	6 (six) (E)
			69 to 76 points	7 (seven) (D)
			77 to 84 points	8 (eight) (C)
			85 to 92 points	9 (nine) (B)
			93 to 100 points	10 (ten) (A)
21.	Method of monitoring the quality of teaching process		Report from the Self-evaluation committee and anonymous student survey	

22. Literature

22.1. Mandatory literature

No.	Author	Title	Publisher	Year
1.	Domenico Otranto, Richard Wall	*Veterinary Parasitology, 5th Edition*	Wiley Blackwell	2024
2.	Anne M. Zajac, Gary A. Conboy, Susan E. Little, Mason V. Reichard	*Veterinary clinical parasitology, 9th Edition*	Wiley Blackwell	2021
3.				

22.2. Additional literature

No.	Author	Title	Publisher	Year
1.	Dwight D. Bowman.	*Georgis' Parasitology for Veterinarians, 11th Edition*	Elsevier Inc.	2021
2.				

Attachement no. 3		**Integrated first and second cycle of studies**
1.	Program course title	**Companion Animal Anesthesia and Analgesia Techniques Under Specific Surgical Conditions**
2.	Code	VME2023-31
3.	Study program	Veterinary medicine
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Surgery,Oorthopedics and Opthalmology

5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Fourth (IV)	Semester	Eight (VIII)
7.	Course load expressed in ECTS credits	2.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Ksenija Ilievska, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course	Listened Anesthesia and Intensive care			
11.	Objectives of the course program (competencies) and learning outcomes	The aim of the course is to provide students with the opportunity expand and apply the basic knowledge they have gained in subjects Anatomy in animals, Genera surgery, General and Special Pharmacology and Anesthesia with intensive care. Through this course, students will deepen their knowledge and practical skills in veterinary anesthesiology techniques, particularly in relation to companion animals. They will have the opportunity to perform: independent clinical examination; application of different anesthesiology protocols and practical work on selected clinical problems.			
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	Anesthetic techniques and immobilization strategies for both companion animals (such as dogs and cats) and exotic pets (such as birds, reptiles, and small mammals) require tailored approaches based on the species, their physiology, and the type of procedure being performed. Key Considerations: **Species-Specific Risks:** Different species have unique physiological traits, such as respiratory rates, metabolic rates, and thermoregulation capabilities, which must be considered during anesthesia and immobilization. **Monitoring:** Close monitoring is essential for all species during anesthesia. For exotic pets, specific monitoring equipment such as pulse oximeters, capnography, and thermometers are vital due to their small size and unique anatomy.**Reversal Agents:** For animals undergoing sedation or immobilization, having access to reversal agents like **atipamezole (for alpha-2 agonists)** or **naloxone (for opioids)** can ensure a quick recovery. By tailoring anesthetic protocols and immobilization techniques to the specific needs of each species, students can provide safer and more effective care for both companion and exotic animals.			
13.	Inter-connection with other subjects (courses)	Anesthesia and Intensive care			
14.	Detailed description of teaching and working methods for the subject	Independently performing of surgical procedures under the qualified supervision and preparing the written assay by using referent textbooks and internet in order to encourage the student for independent work and research. Students will have the opportunity to participate in and to perform surgical procedures, starting with less complex operations, gradually progressing to more advanced surgeries as their skills develop. This practical experience is vital for building confidence and competence in the operating room under the supervision of veterinary surgeon and course teacher. By combining practical surgical experience with			

		theoretical knowledge, the course helps students to understand the true meaning of veterinary surgery.		
15.	Total available time	50 hours Practicals: 2 hours/per week (30 hours)		
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours	30
		16.3.	Practice: total hours	
17.	Other forms of activities	17.1.	Project assignments: hours	
		17.2.	Individual tasks: hours	
		17.3.	Self-directed learning	20
18.	Conditions for receiving authorization			
19.	Assessment methods The student is obligated for active participation in all predicted activities for gaining points which are part of the final grading.			
	19.1.	Tests: points		
	19.2.	Written essay/project assignment, oral or wrriten presentation: points		
	19.3.	Final exam: points		Not predicted
20.	Grading criteria (points/grade)		up to 59 points	5 (five) (F)
			60 to 68 points	6 (six) (E)
			69 to 76 points	7 (seven) (D)
			77 to 84 points	8 (eight) (C)
			85 to 92 points	9 (nine) (B)
			93 to 100 points	10 (ten) (A)
21.	Method of monitoring the quality of teaching process		Report from the Self-evaluation committee and anonymous student survey	

22. Literature

22.1. Mandatory literature

No.	Author	Title	Publisher	Year
1.	Lerche F., Aarne	*Handbook of Small Animal Regional Anesthesia and Analgesia techniques*	Willey Blackwell	2016
2.	Thurmon J.C., Tranquilli W.J., Benson G.J.Lumb & Jones	*Veterinary Anesthesia 3rd edition*	Williams &Wilkins	1996
3.				

22.2. Additional literature

		No.	Author	Title	Publisher	Year
		1.	AAHA	*Anesthesia and Monitoring Guidelines for Dogs and Cats*		
		2.	Johnston S.S.. Tobias K.M.	*Veterinary surgery, 2nd edition*	Elsevier	2017
		3.	Silverstein C.D., Hopper K.	*Small animal critical care medicine*	Saunders, Elsevier	2009
		4.	Fossum Theresa W.	*Small animal surgery, 5th edition*	Elsevier	2017

Attachement no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Surgical Skin Reconstruction Techniques**			
2.	Code	VME2023-32			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Surgery, Orthopedics and Opthalmology			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Fourth (IV)	Semester	Eight (VIII)
7.	Course load expressed in ECTS credits	2.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Plamen Trojachanec, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course	Listened General Surgery			
11.	Objectives of the course program (competencies) and learning outcomes	The aim of the course is to give the students a fundamental theory for implementation of specific surgical treatments of skin disease in daily practice. With this course students will be able to expand their previous knowledge of anatomy and general surgery. Students will have the opportunity to carry out individual examination and practical work on selected clinical problems			
12.	Detailed course content by chapter and unit with learning	Independently performing of surgical procedures under the qualified supervision and preparing the written assay by using			

	outcomes for each chapter	referent textbooks and internet in order to encourage the student for independent work and research.			
13.	Inter-connection with other subjects (courses)	Soft Tissue Surgery, Animal Clinical Anatomy			
14.	Detailed description of teaching and working methods for the subject				
15.	Total available time	50 hours Practicals: 2 hours/per week (30 hours)			
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours		
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours		30
		16.3.	Practice: total hours		
17.	Other forms of activities	17.1.	Project assignments: hours		
		17.2.	Individual tasks: hours		
		17.3.	Self-directed learning		20
18.	Conditions for receiving authorization				
19.	Assessment methods The student is obligated for active participation in all predicted activities for gaining points which are part of the final grading				
	19.1.	Tests: points		min.52 max.85	
	19.2.	Written essay/project assignment, oral or wrriten presentation: points			
	19.3.	Final exam: points		Not predicted	
20.	Grading criteria (points/grade)		up to 59 points	5 (five) (F)	
			60 to 68 points	6 (six) (E)	
			69 to 76 points	7 (seven) (D)	
			77 to 84 points	8 (eight) (C)	
			85 to 92 points	9 (nine) (B)	
			93 to 100 points	10 (ten) (A)	
21.	Method of monitoring the quality of teaching process	Report from the Self-evaluation committee and anonymous student survey			

22. Literature

22.1. Mandatory literature

No.	Author	Title	Publisher	Year
1.	Slatter Douglas	*Textbook of small animal surgery 2ndedition*	Sounders	2002
2.	Fossum Theresa W.	*Small animal surgery2nd ed.*	Mosby	2002
3.	Harari J.	*Small animal surgery*	Williams & Wilkins;	1996
4.	Binnington A.G	*Decision making ina small animal soft tissue surgery*		1988

		5.	Newton., Swaim S. F. Henderson R. A	*Small animal wound management*	Williams & Wilkins	1997
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year
		1.				
		2.				
		3.				

Attachement no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Veterinary Dentistry for Dogs and Cats**			
2.	Code	VMI2023-33			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Surgery, Orthopedics and Ophttalmology Department of Internal Diseases in Small Animals and Equides			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Fourth (IV)	Semester	Eight (VIII)
7.	Course load expressed in ECTS credits	2.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Assoc. Prof. Ksenija Ilievska, PhD Assoc. Prof. Elena Atanaskova Petrov, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course				
11.	Objectives of the course program (competencies) and learning outcomes	Veterinary dentistry is a relatively new and increasingly relevant clinical discipline in small practice. Everyday in clinical practice, the number of dogs and cats with diseases localized in the mouth is increasing cavities such as poly- and oligodontia, caries, tooth fractures, epulides, severe stomatitis and many others pathologies. This development of veterinary practice necessarily imposes the need for a study of this kind subject, in order to acquire additional knowledge and competence of future veterinarians. To work dentistry, a good knowledge of anatomy and the normal development of teeth is necessary dogs and cats, x-ray imaging			

		techniques, dental instruments, as well as anesthesiology and pathology of the oral cavity and teeth.		
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	A detailed description of the anatomy and physiology of canine and feline teeth, as well as topography. Methods of diagnosis of diseases in the oral cavity such as different types of stomatitis, gingivitis, occurrence of epulides, sialocele, neoplasms of the oral cavity, congenital anomalies of the teeth, occurrence of caries, fractures of teeth, calculus, prevention and treatment of periodontosis. Establishing a plan and treating diseases. It will also the most common surgical interventions such as tooth extraction, apical osteotomy, removal of tumors, tooth fractures, maxilla and mandible fracture, maxillectomy and mandibulectomy. Tracking of the latest trends in therapy and surgical treatments. In the practical part, students will actively participate in the diagnosis, planning and treatment ofndiseases, as well as during surgical interventions, gingival reconstruction, tooth extraction and local, regional anesthesia.		
13.	Inter-connection with other subjects (courses)	/		
14.	Detailed description of teaching and working methods for the subject	Seminars: work in a group. Practical teaching: direct participation in diagnostic procedures, therapies and surgical interventions. Independent performance of treatments under expert supervision and preparation of a seminar paper using expert literature and internet, in order to encourage the student to independent work and research.		
15.	Total available time	50 hours Practicals: 2 hours/per week (30 hours)		
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours	
		16.3.	Practice: total hours	30
17.	Other forms of activities	17.1.	Project assignments: hours	
		17.2.	Individual tasks: hours	
		17.3.	Self-directed learning	20
18.	Conditions for receiving authorization	The student gets authorisation if he/she has a minimum attendance of 70% of lectures and practical.		
19.	Assessment methods			
	19.1.	Tests: points		8-15
	19.2.	Written essay/project assignment, oral or wrriten presentation: points		52-85
	19.3.	Final exam: points		/
20.	Grading criteria (points/grade)		up to 59 points	5 (five) (F)
			60 to 68 points	6 (six) (E)
			69 to 76 points	7 (seven) (D)
			77 to 84 points	8 (eight) (C)
			85 to 92 points	9 (nine) (B)
			93 to 100 points	10 (ten) (A)
21.	Method of monitoring the quality of teaching process	Report from the Self-evaluation committee and anonymous student survey		
22.	Literature			

	22.1.	Mandatory literature				
		No.	Author	Title	Publisher	Year
		1.	Cedric Tutt, Judith Deeprose, David Crossley	*BSAVA Manual of Canine And Feline Dentistry 3rd Edition*	British Small Animal Veterinary Association	2008
		2.	Verstarete F., Lommer M., Arzi B.	*Oral and Maxyollfacial Surgery in Dogs and Cats*	Elsevier, second edition	2019
		3.				
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year
		1.	Lerche F., Aarne	*Handbook of Small Animal Regional Anesthesia and Analgesia Techniques*	Willey Blackwell	2016
		2.	Eichoff Marcus	*Alas of dentistry in cats and dogs*	Thieme Germany	2020
		3.	WSAVA	*Dental guidliness*		

Attachement no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Clinical Pharmacology**			
2.	Code	VME2023-34			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Pharmacology and Toxicology			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Fifth (V)	Semester	Ninth (IX)
7.	Course load expressed in ECTS credits	2.0			

8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Romel Velev, PhD		
9.	Teaching language	English		
10.	Necessary prerequisites for attending and passing the course	Listened General and Special pharmacology		
11.	Objectives of the course program (competencies) and learning outcomes	The aim of the course is to give students a theoretical basis for practical clinical pharmacology. Seminars include review of the fundamentals of pharmacokinetics, drug metabolism, mechanism of action of the drug receptor, interaction among drugs, and presentation of selected drugs commonly used in veterinary clinical practice. In this way students will be allowed to obtain performance of different groups of veterinary drugs. During the course clinical problems exposed in the form of examples from everyday veterinary practice will be resolved. Also the student will have an oral presentation to the chapter he/she chooses.		
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	*Seminars from the basic pharmacology*: The pharmacokinetic and dosing of drugs. The pharmacokinetic basis of species variations in drug disposition. The concept of bioavailability and application to veterinary dosage forms. Interpretation of changes in drug disposition and interspecies scaling. Some aspects of dosage, clinical selectivity and stereoisomerism. Drug permeation through the skin and topical preparations. Antimicrobial disposition, selection, administration and dosage. The bioavailability and disposition of antimicrobial agents in neonatal animals. Legal requirements for clinical examination of new veterinary drugs. Drug residues and the determining of the withdrawal period for drugs. *Seminars based on clinical practice cases*: Drugs acting on the digestive system and metabolism. Fluid and electrolyte therapy. Drugs acting on the heart and circulation. Antibiotics and chemotherapeutics. Anti-inflammatory drugs. Hypnotics, sedatives and anesthetics. Antihelminthics and ectoparasiticides. Hormones affecting reproduction. Dermatological drugs. Ophthalmic drugs. Analgesics.		
13.	Inter-connection with other subjects (courses)			
14.	Detailed description of teaching and working methods for the subject	Seminars: discussion on topics from the course or written in the referent textbooks; active participation of the student (exposing personal opinions, ideas, discussion); oral presentation of a course's topic by the student's choice. Written assay: learning with use of referent textbooks and internet, preparing wtitten assay.		
15.	Total available time	50 hours Seminars: 2 hours per week (30 hours)		
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours	30
		16.3.	Practice: total hours	
17.	Other forms of activities	17.1.	Project assignments: hours	
		17.2.	Individual tasks: hours	

		17.3.	Self-directed learning		20
18.	Conditions for receiving authorization				
19.	Assessment methods The student is obligated for active participation in all predicted activities for gaining points which are part of the final grading.				
	19.1.	Tests: points			min.30 max. 60
	19.2.	Written essay/project assignment, oral or wrriten presentation: points			min.6 max. 10
	19.3.	Final exam: points			
20.	Grading criteria (points/grade)		up to 59 points		5 (five) (F)
			60 to 68 points		6 (six) (E)
			69 to 76 points		7 (seven) (D)
			77 to 84 points		8 (eight) (C)
			85 to 92 points		9 (nine) (B)
			93 to 100 points		10 (ten) (A)
21.	Method of monitoring the quality of teaching process		Report from the Self-evaluation committee and anonymous student survey		

22. Literature

22.1. Mandatory literature

No.	Author	Title	Publisher	Year
1.	Booth D. M.	*Small animal Clinical Pharmacology, 2nd ed.*	Elsevier (Saunders)	2012
2.	Baggot, D. J.	*The Physiological Basis of Veterinary Clinical Pharmacology*	Blackwell Science Ltd	2001
3.				

22.2. Additional literature

No.	Author	Title	Publisher	Year
1.				
2.				
3.				

Attachement no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Clinical Nutrition in Dogs and Cats**			
2.	Code	VMI2023-35			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Internal Diseases in Small Animals and Equides			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Fifth (V)	Semester	Ninth (IX)
7.	Course load expressed in ECTS credits	2.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Assoc. Prof. Elena Atanaskova Petrov, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course				
11.	Objectives of the course program (competencies) and learning outcomes	The basic principles of clinical nutrition in dogs and in cats have developed and clarified in recent years. In view of the advanced information regarding the connection of clinical nutrition and metabolic needs in diseased dogs and cats, the need arose for the study of this subject after mastering the specific subjects with which diseases are studied in these types of animals. Of course, the topics studied will help the student to understand the basics principles of nutritionism in relation to the pathological condition that is present in the diseased animal, the way of application as well as the duration of the special type of diet.			
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	Theoretical part: Balanced nutrition and energy needs of dogs and cats in different developmental stages; Essential nutrients, supplements and nutritional supplements; Commercial and home-prepared foods; Body weight control through diet; Nutrition in patients with gastrointestinal diseases; Nutrition of patients with skin diseases; Nutrition of patients with diseases of hepatobiliary system; Nutrition of patients with pancreatic diseases; Nutrition of patients with kidney diseases; Nutrition of patients with urinary tract diseases Nutrition of patients with urinary tract diseases; Nutrition of patients with endocrine diseases; Nutrition of patients with cardiovascular diseases; Nutrition of patients with oncological diseases; Nutrition of patients with musculoskeletal diseases; Parenteral nutrition and tube feeding of patients. Practical part: Determination of the energy needs of the dog/cat; Determining the lack of essential nutrients, the need for supplements and food additives; Interpretation of labels and recommendations of commercial foods; Determination of calf weight index and nutrition recommendation.; preparation of prescriptions for patients			

		with gastrointestinal diseases; preparation of prescriptions for patients with skin diseases; preparation of prescriptions for patients with diseases of the hepatobiliary system; preparation of prescriptions for patients with diseases of pancreas; preparation of prescriptions for patients with kidney diseases; preparation of prescriptions for patients with diseases of the urinary tract; preparation of prescriptions for patients with endocrinological disorders; preparation of prescriptions for patients with cardiovascular diseases; preparation of prescriptions for patients with oncological diseases, preparation of prescriptions for patients with musculoskeletal diseases; Protocols for enteral and parenteral nutrition.		
13.	Inter-connection with other subjects (courses)	Internal Diseases of Small Animals and Equids 1 and 2, Anestesia ad Intensive Care		
14.	Detailed description of teaching and working methods for the subject	Interactive lectures and practical; discussions about different internal diseases and their nutritional management, presentation of different nutritional protocols.		
15.	Total available time	50 h hours Theory classes: 1 hour/per week (15 hours)		
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	15
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours	
		16.3.	Practice: total hours	15
17.	Other forms of activities	17.1.	Project assignments: hours	10
		17.2.	Individual tasks: hours	10
		17.3.	Self-directed learning	
18.	Conditions for receiving authorization	The student gets authorisation if he/she has a minimum attendance of 70% of lectures and practical.		
19.	Assessment methods			
	19.1.	Tests: points		
	19.2.	Written essay/project assignment, oral or wrriten presentation: points		5-15
	19.3.	Final exam: points		60-100
20.	Grading criteria (points/grade)		up to 59 points	5 (five) (F)
			60 to 68 points	6 (six) (E)
			69 to 76 points	7 (seven) (D)
			77 to 84 points	8 (eight) (C)
			85 to 92 points	9 (nine) (B)
			93 to 100 points	10 (ten) (A)
21.	Method of monitoring the quality of teaching process	Report from the Self-evaluation committee and anonymous student survey		

22.	Literature					
	22.1.	Mandatory literature				
		No.	Author	Title	Publisher	Year
		1.	Fascetti, A.J. and Delaney, S.J.	*Applied veterinary clinical nutrition*.	John Wiley & Sons	2012
		2.				

		3.				
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year
		1.	P.J. Markwell & K. Hurley	*Applied clinical nutrition of the dog an cat*	Waltham	2001
		2.				
		3.				

Attachement no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Case Studies in Veterinary Clinical Immunology**			
2.	Code	VME2023-36			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Microbiology and Immunology			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Fifth (V)	Semester	Ninth (IX)
7.	Course load expressed in ECTS credits	2.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Prof.Slavcho Mrenoshki, PhD Prof. Iskra Cvetkovikj, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course	Enrolled semester in which the course is taken			
11.	Objectives of the course program (competencies) and learning outcomes	The goal of this course is to expand knowledge of veterinary immunology through the presentation of practical clinical cases.			
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	Case presentations of immune-mediated diseases in animals (immunodeficiencies, autoimmune diseases, and hypersensitivity reactions) from the perspective of the immunological mechanisms of disease development, diagnostic approach, and treatment.			
13.	Inter-connection with other subjects (courses)	Veterinary Immunology			
14.	Detailed description of teaching and working methods for the subject	Seminars: discussion on topics from the program or read in professional literature; active participation of students (expressing opinions, ideas, discussion); oral presentation on a chapter chosen by the student.			

		Seminar paper: learning with the use of professional literature and the internet; preparation of a seminar paper.			
15.	Total available time	50 hours Seminars: 2 hours/per week (30 hours)			
16.	Forms of teaching activities	16.1.	Seminars: hours		30
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours		
		16.3.	Practice: total hours		
17.	Other forms of activities	17.1.	Project assignments: hours		
		17.2.	Individual tasks: hours		
		17.3.	Self-directed learning		20
18.	Conditions for receiving authorization				
19.	Assessment methods				
	19.1.	Tests: points		Presence/activity: 15-30	
	19.2.	Written essay/project assignment, oral or wrriten presentation: points		25-40	
	19.3.	Final exam: points		20-30	
20.	Grading criteria (points/grade)		up to 59 points	5 (five) (F)	
			60 to 68 points	6 (six) (E)	
			69 to 76 points	7 (seven) (D)	
			77 to 84 points	8 (eight) (C)	
			85 to 92 points	9 (nine) (B)	
			93 to 100 points	10 (ten) (A)	
21.	Method of monitoring the quality of teaching process		Report from the Self-evaluation committee and anonymous student survey		

22.	Literature					
	22.1.	Mandatory literature				
		No.	Author	Title	Publisher	Year
		1.	Gershwin J.L.	*Case studies in veterinary immunology*	Garland Science	2017
		2.				
		3.				
		4.				
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year
		1.				
		2.				
		3.				

Attachement no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Case Studies in Veterinary Clinical Microbiology**			
2.	Code	VME2023-37			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Microbiology and Immunology			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Fifth (V)	Semester	Ninth (IX)
7.	Course load expressed in ECTS credits	2.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Prof.Slavcho Mrenoshki, PhD Prof. Iskra Cvetkovikj, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course	Enrolled semester in which the course is taken			
11.	Objectives of the course program (competencies) and learning outcomes	The goal of this course is to expand knowledge of veterinary microbiology from a clinical perspective.			
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	Case presentations in animals caused by bacteria, fungi, and viruses with a focus on diagnostic and therapeutic treatment.			
13.	Inter-connection with other subjects (courses)	Microbiology 1 and Microbiology 2			
14.	Detailed description of teaching and working methods for the subject	Seminars: discussion on topics from the program or read in professional literature; active participation of students (expressing opinions, ideas, discussion); oral presentation on a chapter chosen by the student. Seminar paper: learning with the use of professional literature and the internet; preparation of a seminar paper.			
15.	Total available time	50 hours Seminars: 2 hours/per week (30 hours)			
16.	Forms of teaching activities	16.1.	Seminars: hours		30
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours		
		16.3.	Practice: total hours		
17.	Other forms of activities	17.1.	Project assignments: hours		
		17.2.	Individual tasks: hours		
		17.3.	Self-directed learning		20
18.	Conditions for receiving authorization				

19.	Assessment methods				
	19.1.	Tests: points			Presence/activity: 15-30
	19.2.	Written essay/project assignment, oral or wrriten presentation: points			25-40
	19.3.	Final exam: points			20-30
20.	Grading criteria (points/grade)		up to 59 points		5 (five) (F)
			60 to 68 points		6 (six) (E)
			69 to 76 points		7 (seven) (D)
			77 to 84 points		8 (eight) (C)
			85 to 92 points		9 (nine) (B)
			93 to 100 points		10 (ten) (A)
21.	Method of monitoring the quality of teaching process		Report from the Self-evaluation committee and anonymous student survey		
22.	Literature				
	22.1.	Mandatory literature			
		No.	Author	Title	Publisher	Year
		1.	Markey B., Leonard F., Archambault M., Culinane A., Maguire D.	*Clinical veterinary microbiology*	Elsevier	2013
		2.				
		3.				
		4.				
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year
		1.				
		2.				
		3.				

Attachement no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Ultrasound Diagnostics of Reproduction Disorders**			
2.	Code	VME2023-38			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Reproduction			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Fifth	Semester	Ninth (IX)

			(V)		
7.	Course load expressed in ECTS credits	2.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Toni Dovenski, PhD Assoc. prof. Branko Atanskov, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course	Listned Reproduction 1 and Reproduction 2			
11.	Objectives of the course program (competencies) and learning outcomes	The aim of the course is to give students possibilities for practical application of ultrasonic diagnosis of the causes and forms of reproductive pathology in cows. The subject aim is to enable students to expand previously acquired knowledge in the field of reproduction. Students will have the opportunity independently to perform diagnosis and treatment of the common reproductive disorders in cows.			
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	Basic principles of ultrasound diagnosis of reproductive disorders in cows. Diagnosis of disorders of ovarian function. Diagnosis of pathology of the uterus. Treatment methods for reproductive disorders.			
13.	Inter-connection with other subjects (courses)	Reproduction 1 and Reproduction 2			
14.	Detailed description of teaching and working methods for the subject	Independently performing treatments under expert supervision and preparation of paper work using professional textbooks and internet, in order to encouraging the student for independent work and research.			
15.	Total available time	50 hours Practicals: 2 hours/per week (30 hours)			
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours		
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours		
		16.3.	Practice: total hours		30
17.	Other forms of activities	17.1.	Project assignments: hours		
		17.2.	Individual tasks: hours		
		17.3.	Self-directed learning		20
18.	Conditions for receiving authorization				
19.	Assessment methods The student is obligated for active participation in all predicted activities for gaining points which are part of the final grading				
	19.1.	Tests: points			
	19.2.	Written essay/project assignment, oral or wrriten presentation: points			
	19.3.	Final exam: points			
20.	Grading criteria (points/grade)		up to 59 points		5 (five) (F)
			60 to 68 points		6 (six) (E)
			69 to 76 points		7 (seven) (D)
			77 to 84 points		8 (eight) (C)
			85 to 92 points		9 (nine) (B)
			93 to 100 points		10 (ten) (A)
21.	Method of monitoring the quality of teaching process	Report from the Self-evaluation committee and anonymous student survey			

22.	Literature					
	22.1.	Mandatory literature				
		No.	Author	Title	Publisher	Year
		1. *Arthur's veterinary reproduction and obstetrics by David E. Noakes, Geoffrey H. Arthur, Timothy J. Parkinson, Gary C. W. England Contributor David E. Noakes, Geoffrey H. Arthur, Timothy J. Parkinson, Gary C. W. England Edition: 8, illustrated, Published by Elsevier Health Sciences, 2001 ISBN 0702025569, 9780702025563* 2. *T. Dovenski, P. Trojacanec, Lj. Kocoski, V. Petkov, Lj. Mickov , B. Atanasov; Use of ultrasound imaging of the ovaries for early pregnancy diagnosis in dairy cows, Proceedings of the 1st Conference of the Balkan Network for the Animal Reproduction Biotechnology, 2009.*				
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year
		1.				
		2.				
		3.				

Attachement no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Cynology**			
2.	Code	VME2023-39			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Internal Diseases in Small Animals and Equides			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Sixth (VI)	Semester	Eleventh (XI)
7.	Course load expressed in ECTS credits	2.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Assoc. Prof. Elena Atanaskova Petrov, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course				
11.	Objectives of the course program (competencies) and learning outcomes	Through this subject, the student gains knowledge in the field of cynology related to the history of cynological organized work in the world and in our country, cynological societies, division of races, breeding of dogs, hygiene, prevention, diet, accommodation.			

		The existence of the various groups of dogs according to their international classification, the specificity by groups, as well as the specificity of each breed individually. Such an approach allows the student to get to know and differentiate diseases better related to breed characteristics.		
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	Theoretical part: Introduction to cynology; Breeding and breeding of dogs; Genetic defects and other congenital defects diseases in dogs; Breeding of dogs; Nutrition of dogs; Dog breeds according to FCI part 1; Breeds of dogs according to FCI part 2; Dog breeds according to FCI part 3; Dog breeds according to FCI part 4; Macedonian dog breeds: dog training and training; The most common diseases of a non-infectious nature in dogs; The most common infectious diseases in dogs; Cynological societies, organizations; Kennel shows and judging. Practical part: Film terminology; Reproductive cycle in dogs; Research data from literature on congenital and genetic defects in dogs; Presentation of dog breeding standards; Most common mistakes and food poisoning in dogs through practical examples; Standards of individual FCI dog groups; Types of dog training and training; examination of patients, sampling for analysis, interpretation of laboratory results; Dog vaccination protocols; Process of evaluation of dogs, by visiting international dog show.		
13.	Inter-connection with other subjects (courses)			
14.	Detailed description of teaching and working methods for the subject	Interactive lectures and developing discussions, use of video materials. Active participation in the exercises, presentation of their research and presence of canine exhibition showes.		
15.	Total available time	50 hours Theory classes: 1 hour/per week (15 hours) Practicals: 1 hour/per week		
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	15
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours	15
		16.3.	Practice: total hours	
17.	Other forms of activities	17.1.	Project assignments: hours	
		17.2.	Individual tasks: hours	10
		17.3.	Self-directed learning	10
18.	Conditions for receiving authorization	The student gets authorisation if he/she has a minimum attendance of 70% of lectures and practical.		
19.	Assessment methods			
	19.1.	Tests: points		
	19.2.	Written essay/project assignment, oral or wrriten presentation: points		5-15
	19.3.	Final exam: points		55-100
20.	Grading criteria (points/grade)		up to 59 points	5 (five) (F)
			60 to 68 points	6 (six) (E)
			69 to 76 points	7 (seven) (D)
			77 to 84 points	8 (eight) (C)
			85 to 92 points	9 (nine) (B)
			93 to 100 points	10 (ten) (A)
21.	Method of monitoring the quality of teaching process	Report from the Self-evaluation committee and anonymous student survey		

22.	Literature					
	22.1.	Mandatory literature				
		No.	Author	Title	Publisher	Year
		1.	Rosie Pilbeam	*The Complete Book of Dogs: Breeds, Training, Health Care: A Comprehensive Encyclopedia Of Dogs With A Fully Illustrated Guide To 230 Breeds And Over 1500 Photographs*	Lorenz books	2017
		2.	Dan Rice	*The Complete Book of Dog Breeding*	Sourcebooks	2008
		3.				
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year
		1.				
		2.				
		3.				

Attachement no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Bacterial Resistance to Antibiotics**			
2.	Code	VME2023-40			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Microbiology and Immunology			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Sixth (VI)	Semester	Eleventh (XI)
7.	Course load expressed	2.0			

	in ECTS credits			
8.	Teacher (leading teacher, in case of multiple teacher)	Prof.Slavcho Mrenoshki, PhD Prof. Iskra Cvetkovikj, PhD		
9.	Teaching language	English		
10.	Necessary prerequisites for attending and passing the course	Enrolled semester in which the course is taken		
11.	Objectives of the course program (competencies) and learning outcomes	The goal of this course is to expand the knowledge of bacterial resistance to antibiotics, the modes of monitoring the development and the trends in resistance as well as the possibilities for alternative antimicrobial therapy.		
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	Mechanism of development of resistance of bacteria to antibiotics. Guidelines and instructions for the use of antibiotics in certain animal species. Monitoring the use of antibiotics in animals. Surveillance of antibiotic resistance in animals. Types of alternative therapy.		
13.	Inter-connection with other subjects (courses)	Microbiology 2		
14.	Detailed description of teaching and working methods for the subject	Seminars: discussion on topics from the program or read in professional literature; active participation of students (expressing opinions, ideas, discussion); oral presentation on a chapter chosen by the student. Seminar paper: learning with the use of professional literature and the internet; preparation of a seminar paper.		
15.	Total available time	50 hours Seminars: 2 hours/per week (30 hours)		
16.	Forms of teaching activities	16.1.	Seminars: hours	30
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours	
		16.3.	Practice: total hours	
17.	Other forms of activities	17.1.	Project assignments: hours	
		17.2.	Individual tasks: hours	
		17.3.	Self-directed learning	20
18.	Conditions for receiving authorization			
19.	Assessment methods			
	19.1.	Tests: points		Presence/activity: 15-30
	19.2.	Written essay/project assignment, oral or wrriten presentation: points		25-40
	19.3.	Final exam: points		20-30
20.	Grading criteria (points/grade)		up to 59 points	5 (five) (F)
			60 to 68 points	6 (six) (E)
			69 to 76 points	7 (seven) (D)
			77 to 84 points	8 (eight) (C)
			85 to 92 points	9 (nine) (B)
			93 to 100 points	10 (ten) (A)
21.	Method of monitoring the quality of teaching process		Report from the Self-evaluation committee and anonymous student survey	
22.	Literature			
	22.1.	Mandatory literature		

		No.	Author	Title	Publisher	Year
		1.	Schwarz S., Cavaco L.M., Shen J.	*Antimicrobial resistance in bacteria from Livestock and companion animals*	ASM press	2018
		2.	Capelo-Martinez J-L., Igrejas G	*Antibiotic drug resistance*	Wiley	2020
		3.	Guardabassi L., Jensen L.B., Kruse H.	*Guide to Antimicrobial Use in animals*	Blackwell Publishing	2008
		4.				
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year
		1.				
		2.				
		3.				

Attachement no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Administrative Procedure in Veterinary Activities**			
2.	Code	VME2023-41			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine - Skopje, Ss Cyril and Methodius University in Skopje Department of Veterinary Administrative Legislation			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Fifth (V)	Semester	Ninth (IX)
7.	Course load expressed in ECTS credits	2.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Elena Davitkovska, PhD			

9.	Teaching language	English		
10.	Necessary prerequisites for attending and passing the course	Listened General and Special Pharmacology, Parasitology and Parasitic Diseases 1 and 2, Animal Clinical Anatomy, Clinical and Laboratory Diagnostics in Companion and Equines, Clinical and Laboratory Diagnostics in Farm Animals, Visual Diagnostic Methods and Physical Therapy, Clinical biochemistry		
11.	Objectives of the course program (competencies) and learning outcomes	The subject of administrative procedure in veterinary activity aims to teach students how the veterinary service is implemented as part of the executive branch and refers to the enforcement of laws and implementation of government policies, solving administrative cases, conducting administrative supervision, performing of normative activity (when it adopts general administrative acts), and the like.		
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	**Theory** • Defining the administrative procedure • Types of administrative procedures • Basic principles of administrative procedure • Competencies in the administrative procedure • Parties in administrative procedure • Communication between public authorities and parties • First-instance procedure • Legal protection • Misdemeanor procedure • Second-instance procedure and judicial protection **Practical instruction** Initiating and conducting general administrative procedure, adoption of general and specific administrative acts, initiating administrative dispute, etc. Veterinary documents and acts in slaughterhouses, dairies, processing facilities and all veterinary control places. Organization and documentation of the measures covered by the Annual Animal Health Program. Organization, obligations and duties for the implementation of multiannual programs for the suppression of various diseases. Visual teaching methods, projection of films and using internet information		
13.	Inter-connection with other subjects (courses)			
14.	Detailed description of teaching and working methods for the subject	Theoretical teaching: Interactive (large group lectures with discussion and student engagement) Practical teaching: Exercises and other forms of work in smaller groups, as well as preparation for the adoption of specific administrative acts in the field of veterinary activity. Research paper: learning using professional literature and the internet, preparing research paper (paper/poster); Presentation and discussion of the research paper.		
15.	Total available time	50 hours Theory classes: 2 hours/week (30 hours) Practicals: 1 hour/per week (15 hours)		
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	30
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours	15
		16.3.	Practice: total hours	
17.	Other forms of activities	17.1.	Project assignments: hours	

		17.2.	Individual tasks: hours	
		17.3.	Self-directed learning	5
18.	Conditions for receiving authorization	The condition for obtaining the signature of the course teacher at the end of the semester: In addition to the presence on theoretical and practical classes is a mastered knowledge check during the semester with a minimum of 30 points. The final exam is oral. A student who has not shown success in the knowledge check during the semester should take one of the corrective knowledge checks in the exam sessions.		
19.	Assessment methods			
	19.1.	Tests: points		60
	19.2.	Written essay/project assignment, oral or wrriten presentation: points		30
	19.3.	Attendance and participation		10
20.	Grading criteria (points/grade)		up to 59 points	5 (five) (F)
			60 to 68 points	6 (six) (E)
			69 to 76 points	7 (seven) (D)
			77 to 84 points	8 (eight) (C)
			85 to 92 points	9 (nine) (B)
			93 to 100 points	10 (ten) (A)
21.	Method of monitoring the quality of teaching process		Report from the Self-evaluation committee and anonymous student survey	

22.

Literature

22.1. Mandatory literature

No.	Author	Title	Publisher	Year
1.	Elena Davitkovska and Ivana Shumanovska-Spasovska	*Administrative Procedures*	Faculty of Law - Skopje, Ss Cyril and Methodius University in Skopje	2021
2.	Borche Davitkovski and Ana Pavlova Daneva	*Administrative Law – part two (procedure law)*	Faculty of Law - Skopje, Ss Cyril and Methodius University in Skopje	2020

22.2. Additional literature

No.	Author	Title	Publisher	Year

		1.	Borche Davitkovski and Ana Pavlova Daneva	*Administrative Law – part one (material law)*	Faculty of Law - Skopje, Ss Cyril and Methodius University in Skopje	2018
		2.	Elena Davitkovska	*Veterinary Administrative Legislation*	Faculty of veterinary medicine - Skopje, Ss Cyril and Methodius University in Skopje	2022
		3.	*Law on Veterinary Health* *Law on Welfare and Protection of Animals* *Animal Identification and Registration Law* *Law on by-products of animal origin* *Law on Veterinary - Medical Preparations* *Food Safety Law* *www.oie.int*			

Attachement no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Poultry Production Technology Processes**			
2.	Code	VME2023-42			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Avian Diseases			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Sixt (VI)	Semester	Eleventh (XI)
7.	Course load expressed in ECTS credits	2.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Aleksandar Dodovski, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and	Attended all courses from V till VIII semester.			

	passing the course					
11.	Objectives of the course program (competencies) and learning outcomes	The aim of the course is to give students a theoretical basis for the practical way of managing poultry and familiarization with the technological processes in all stages of breeding in different economic categories. The seminars include a presentation of the basic technological processes in different types of farms, starting from the parent flock, through the hatchery station and day-old chicks, up to commercial farms for breeding and exploitation of broilers and layers for the production of table eggs. During the teaching, clinical problems will be solved in groups, presented in the form of examples from everyday veterinary practice.				
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	Technological processes in parent flock breeding: broilers and layers. Technological processes in hatchery station. Technological processes during breeding. Technological processes in laying hens production. Technological processes in breeding broilers. Poultry farm record keeping				
13.	Inter-connection with other subjects (courses)	Animal hygiene 1 and 2, Animal husbandry 1 and 2, Pathophysiology 1 and 2, General and Special Veterinary Pathology, Infectious Diseases in Domestic Animals 1 and 2				
14.	Detailed description of teaching and working methods for the subject	Seminars: discussion of topics mentioned in the lectures or read in the professional literature; active participation of students (expression of opinions, ideas, discussion); Project assignment: learning using professional literature and the Internet, writing an essay/poster				
15.	Total available time	50 hours Practicals: 2 hours/per week (30 hours)				
16.	Forms of teaching activities	16.1.	Practical lectures (laboratory, auditorial), seminars, team work: hours	30		
17.	Other forms of activities	17.1.	Project assignments: hours	20		
18.	Conditions for receiving authorization	In order to be able to take the final exam the student must have passed the exams of the following courses: Patophysiology 1 and 2 and Speciial veterinary pathology.				
19.	Assessment methods					
	19.1.	Activity and attending classses		30-50		
	19.3.	Written essay/project assignment, oral or wrriten presentation: points		30-50		
20.	Grading criteria (points/grade)		up to 59 points	5 (five) (F)		
			60 to 68 points	6 (six) (E)		
			69 to 76 points	7 (seven) (D)		
			77 to 84 points	8 (eight) (C)		
			85 to 92 points	9 (nine) (B)		
			93 to 100 points	10 (ten) (A)		
21.	Method of monitoring the quality of teaching process	Report from the Self-evaluation committee and anonymous student survey				
22.	Literature					
	22.1.	Mandatory literature				
		No.	Author	Title	Publisher	Year

		1.	Donald D. Bell William D. Weaver, Jr. (Eds.)	*Commercial chicken meat and egg production, 5th Edition*	Kluwer Academic Publishers	2002
		2.	Miscellanous	*Manuals from breeding companies (ISA, Lohmann, Ross, Cobb)*	Breeding companies	2015 onwards

Attachment no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Parasitology in Public Health**			
2.	Code	VME2023-43			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss. Cyril and Methodius University in Skopje Department of Parasitology and Parasitic Diseases			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Sixth (VI)	Semester	Eleventh (XI)
7.	Course load expressed in ECTS credits	2.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Jovana Stefanovska, PhD Prof. Aleksandar Cvetkovikj, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course				
11.	Objectives of the course program (competencies) and learning outcomes	Through the course seminars the students will learn about the clinical approach and laboratory diagnosis of parasitic diseases that are significant zoonoses and are of great importance in public health.			
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	Seminars: Definition of zoonosis. The role of parasitic zoonoses in world health. Epidemiology and prevalence of the parasitic zoonoses. Protozoa: giardiosis, balantidosis, entamoebosis, toxoplasmosis, cryptosporidiosis and pneumocystosis, random protozoan infestations in humans. Trematoda: fasciolosis and dicrocoeliosis. Cestoda: teniasis and cysticercosis, hydatidosis and cenurosis, diphylobotriosis, hymenolepodosis and accidental cestodal infections in humans. Nematoda: trichinelosis, visceral and cutaneous larva migrans syndrome, strongyloidosis, anisakidosis and accidental nematodal infections in humans. Arthropoda: infestations with ticks mites, fleas, lice and trombiculid mites; accidental infestations of humans with other ectoparasites from animals and allergic reactions in humans; myasis.			
13.	Inter-connection with other subjects (courses)	Parasitology and parasitic diseases 1 and 2			

14.	Detailed description of teaching and working methods for the subject	Seminars: interactive (lectures in large group with discussion and active participation of the students). Written essay: learning with use of referent textbooks and internet, preparing written essay; presentation and discussion about the written essay.			
15.	Total available time	50 hours Seminars: 2 hours/per week (30 hours)			
16.	Forms of teaching activities	16.1.	Seminars: hours	30	
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours		
		16.3.	Practice: total hours		
17.	Other forms of activities	17.1.	Project assignments: hours		
		17.2.	Individual tasks: hours		
		17.3.	Self-directed learning	20	
18.	Conditions for receiving authorization				
19.	Assessment methods				
	19.1.	Tests: points		Presence: 11-20 points	
	19.2.	Written essay/project assignment, oral or written presentation: points		15-30 points	
	19.3.	Final exam: points		34-50 points	
20.	Grading criteria (points/grade)		up to 59 points	5 (five) (F)	
			60 to 68 points	6 (six) (E)	
			69 to 76 points	7 (seven) (D)	
			77 to 84 points	8 (eight) (C)	
			85 to 92 points	9 (nine) (B)	
			93 to 100 points	10 (ten) (A)	
21.	Method of monitoring the quality of teaching process	Report from the Self-evaluation committee and anonymous student survey			

22. Literature

22.1. Mandatory literature

No.	Author	Title	Publisher	Year
1.	Domenico Otranto, Richard Wall	*Veterinary Parasitology, 5th Edition*	Wiley Blackwell	2024
2.	Rohela Mahmud, Yvonne Ai Lian Lim, Amirah Amir	*Medical parasitology - A textbook*	Springer International Publishing AG	2017
3.				

22.2. Additional literature

No.	Author	Title	Publisher	Year

		1.	Alvin A. Gajadhar (Editor)	*Foodborne Parasites in the Food Supply Web - Occurrence and Control*	Elsevier Ltd.	2015
		2.				

Attachement no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Veterinary Inspection**			
2.	Code	VME2023-44			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Food safety and Veterinary Public Health			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Sixth (VI)	Semester	Eleventh (XI)
7.	Course load expressed in ECTS credits	2.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Pavle Sekulovski, PhD Prof. Dean Jankuloski, PhD Prof. Sandra Mojsova, PhD Prof. Mirko Prodanov, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course				
11.	Objectives of the course program (competencies) and learning outcomes	Through this course, students are introduced to contemporary principles, setting, and functioning of Veterinary and sanitary control in accordance with the Macedonian national legislation in the field of veterinary public health, food safety and EU legislation. The aim is to develop separate chapters of the veterinary health law, the public veterinary health law, the food safety law, the consumer protection law and related bylaws. To introduce students to their practical application			

<table>
<tr><td>12.</td><td>Detailed course content by chapter and unit with learning outcomes for each chapter</td><td colspan="3">Seminars - organization of veterinary inspection (state administration bodies responsible for veterinary inspection), structure and organization of the Veterinary Administration. Organization and legal competences in veterinary sanitary supervision, control and reviews of veterinary inspection in the EU (DG SANCO, Food and Veterinary Office FVO). Conducting veterinary inspections in the production and marketing of products of animal origin and regulations relating to food safety under the Public Veterinary Health Law and the Food Safety Law. Analysis, management, and communication of risks in veterinary inspection.
Practical application of the powers, duties and responsibilities of the official and authorized veterinarian in the performance of inspection work: content of inspection supervision, taking samples for individual laboratory tests, preparation of documentation and acts (minutes, cover letters, findings and decisions). Certification and regulations for the identification and declaration of animal food products (labels, quality and origin).
Work of the State Veterinary Inspection at the border, document review, identification and physical inspection of consignments of animals and products of animal origin. Consumer Protection Act, role of the Directorate of Food.
Practical Teaching
Practical familiarity with the work of veterinary inspection in the production and circulation of products of animal origin (practice of slaughterhouse, dairy, processing facilities, terminal and in circulation)</td></tr>
<tr><td>13.</td><td>Inter-connection with other subjects (courses)</td><td colspan="3"></td></tr>
<tr><td>14.</td><td>Detailed description of teaching and working methods for the subject</td><td colspan="3">Seminars: group work with discussion and student engagement.
Practical Teaching: Laboratory exercises in food microbiology; Active participation of students in laboratory work on isolation and identification of microorganisms.
Term paper: learning using professional literature and the Internet; Drafting a Term Paper</td></tr>
<tr><td>15.</td><td>Total available time</td><td colspan="3">50 hours
Practicals: 1 hour/per week (15 hours)</td></tr>
<tr><td rowspan="3">16.</td><td rowspan="3">Forms of teaching activities</td><td>16.1.</td><td>Theoretical lectures: hours</td><td></td></tr>
<tr><td>16.2.</td><td>Practical lectures (laboratory, auditorial), seminars, team work: hours</td><td>15</td></tr>
<tr><td>16.3.</td><td>Practice: total hours</td><td></td></tr>
<tr><td rowspan="3">17.</td><td rowspan="3">Other forms of activities</td><td>17.1.</td><td>Project assignments: hours</td><td></td></tr>
<tr><td>17.2.</td><td>Individual tasks: hours</td><td></td></tr>
<tr><td>17.3.</td><td>Self-directed learning</td><td>35</td></tr>
<tr><td>18.</td><td>Conditions for receiving authorization</td><td colspan="3"></td></tr>
<tr><td rowspan="5">19.</td><td colspan="4">Assessment methods
The student is required to actively monitor all scheduled activities by which he earns points as part of the final assessment.
Continuous Knowledge Testing (two): written
Final Exam: Oral or written (including one continuous testing)</td></tr>
<tr><td>19.1.</td><td colspan="2">Tests: points</td><td>Min. 40 max. 60</td></tr>
<tr><td>19.2.</td><td colspan="2">Written essay/project assignment, oral or wrriten presentation: points</td><td>Min. 5 max. 10</td></tr>
<tr><td>19.3.</td><td colspan="2">Activity and participation</td><td>Min. 15 max. 30</td></tr>
<tr><td>20.</td><td colspan="2">Grading criteria (points/grade)</td><td>up to 59 points</td><td>5 (five) (F)</td></tr>
</table>

		60 to 68 points	6 (six) (E)
		69 to 76 points	7 (seven) (D)
		77 to 84 points	8 (eight) (C)
		85 to 92 points	9 (nine) (B)
		93 to 100 points	10 (ten) (A)
21.	Method of monitoring the quality of teaching process	Report from the Self-evaluation committee and anonymous student survey	

22. Literature

Mandatory literature

No.	Author	Title	Publisher	Year
1.		*Collection of Veterinary Health Laws*	Official Gazette of the RM	
2.		*Food Safety Law*	Official Gazette of the RM	
3.		*Consumer Protection Law*	Official Gazette of the RM	
4.	Sava Buncic	*Integrated Food Safety and Veterinary Public Health*	COBI	2006
5.	Wilson W. G	*Wilson's practical meat inspection*	Wiley	1997
6.	Bremner, A., Johnston, M.	*Poultry Meat Hygiene and Inspection*	W. B. Saunders Company Ltd.	1996
7.	www.pravo.org			
8.	http://vetlex.taeix.be/			

Attachement no. 3		**Integrated first and second cycle of studies**
1.	Program course title	**Husbandry and Diseases of in Non-poultry Avian Species**
2.	Code	VME2023-45
3.	Study program	Veterinary medicine
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Avian Diseases
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies

6.	Academic year / semester	Year	Sixth (VI)	Semester	Eleventh (XI)
7.	Course load expressed in ECTS credits	2.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Aleksandar Dodovski, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course	Attended all courses from V till VIII semester.			
11.	Objectives of the course program (competencies) and learning outcomes	The aim of the course is to give students a theoretical basis for the method of breeding and diseases in non-poultry bird species (pigeons, ostriches and others). The seminars include a presentation of the basics of the structure and function of organic systems, methods of cultivation, prevention of the introduction of infectious diseases into the farm, specific immunoprophylaxis and familiarization with diseases of different etiological nature and their possible treatment. During the teaching, clinical problems will be solved in groups, presented in the form of examples from everyday veterinary practice.			
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	Basics of Ostrich Anatomy and Physiology. Breeding of ostriches. Breeding of ostriches. Egg incubation procedures. Breeding of juveniles. Biosecurity measures in breeding ostriches. Bacterial diseases. Viral diseases. Fungal diseases. Parasitic diseases. Avitaminoses. Metabolic disorders. Poisonings Fundamentals of Pigeon Anatomy and Physiology. Ways of breeding pigeons. Biosecurity measures in pigeon breeding. Bacterial diseases. Viral diseases. Fungal diseases. Parasitic diseases. Avitaminoses. Metabolic disorders. Poisonings			
13.	Inter-connection with other subjects (courses)	Animal hygiene 1 and 2, Animal husbandry 1 and 2, Pathophysiology 1 and 2, General and Veterinary Special Pathology, Infectious Diseases in Domestic Animals 1 and 2			
14.	Detailed description of teaching and working methods for the subject	Seminars: discussion of topics mentioned in the lectures or read in the professional literature; active participation of students (expression of opinions, ideas, discussion); Project assignment: learning using professional literature and the Internet, writing an essay/poster			
15.	Total available time	50 hours Practicals: 2 hpurs/per week (30 hours)			
16.	Forms of teaching activities	16.1.	Practical lectures (laboratory, auditorial), seminars, team work: hours	30	
17.	Other forms of activities	17.1.	Project assignments: hours	20	
18.	Conditions for receiving authorization	In order to be able to take the final exam the student must have passed the exams of the following courses: Patophysiology 1 and 2 and General and Speciial Veterinary Pathology.			
19.	Assessment methods				
	19.1.	Activity and attending classses		30-50	
	19.3.	Written essay/project assignment, oral or wrriten presentation: points		30-50	
20.	Grading criteria (points/grade)	up to 59 points		5 (five) (F)	
		60 to 68 points		6 (six) (E)	
		69 to 76 points		7 (seven) (D)	
		77 to 84 points		8 (eight) (C)	

			85 to 92 points	9 (nine) (B)	
			93 to 100 points	10 (ten) (A)	
21.	Method of monitoring the quality of teaching process		Report from the Self-evaluation committee and anonymous student survey		
22.	Literature				
	22.1.	Mandatory literature			
		No.	Author	Title	Publisher	Year
		1.	DC Deeming (Ed.)	*The Ostrich Biology, Production and Health*	CABI Publishing	1999
		2.	Al-Saeidi AK	*Manual of pigeon diseases*		

Attachment no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Aquaculture**			
2.	Code	VME2023-46			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss. Cyril and Methodius University in Skopje, Department of Biology and Pathology of Bees, Fish and Games			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Sixth (VI)	Semester	Eleventh (XI)
7.	Course load expressed in ECTS credits	2.0			
8.	Teacher (leading teacher, in case of multiple teachers)	Appointed teacher by the Teaching Scientific council			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course				
11.	Objectives of the course program (competencies) and learning outcomes	The course seminars aim to broaden the knowledge of students about the concepts and importance of aquaculture, the ecology in aquatic ecosystems, the farming of the commercially most important species of warm-water and cold-water freshwater fish, the health protection of fish in aquaculture production and farming of crabs and frogs. Through the field practice (visiting different types of fish farms), students will practically get acquainted with the selection on fishpond location, quality and quantity of water for aquaculture, fishpond sizing, planning of fish production, fish nutrition and transport of fish and reproductive material. In this manner, the future doctor of veterinary medicine will acquire broader knowledge about the farming techniques of the most			

		important warm-water and cold-water species of fish, the principles of health protection of fish and farming of crabs and frogs, as well as with the ability to give the advice aimed at promoting optimal aquaculture production and fish health.		
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	Seminars: General concepts of aquaculture. Ecology in aquatic ecosystems. Specific concepts of aquaculture. Farming of warm-water fish species. Farming of cold-water fish species. Fish species farmed in the Republic of North Macedonia. Basic anatomical and physiological characteristics of fish. Fish farm location. Water quality for aquaculture. Quantity of water for aquaculture. Dimensioning of a fish farm. Planning of fish production. Fish nutrition. Transport of fish and reproductive material. Health protection of fish in aquaculture production. Crayfish farming. Frog farming. Field practice: Visit to an earthen fish pond for carp farming. Visit to a cage fish farm for farming carp/trout. Visit to a trout fish farm (raceway design).		
13.	Inter-connection with other subjects (courses)	Biology and pathology of fish		
14.	Detailed description of teaching and working methods for the subject	Seminars: interactive (lectures in large group with discussion and active participation of the students). Field practice: fish farm visits and practical work with small groups of students. Written essay: learning with use of referent textbooks and internet, preparing written essay; presentation and discussion about the written essay.		
15.	Total available time	50 hours		
16.	Forms of teaching activities	16.1.	Seminars: hours	24
		16.2.	Field practice: hours	6
		16.3.	Practice: total hours	
17.	Other forms of activities	17.1.	Project assignments: hours	
		17.2.	Individual tasks: hours	
		17.3.	Self-directed learning	20
18.	Conditions for receiving authorization	The student is responsible for actively following all the activities that earn points as part of the final assessment. The student can be excused from classes up to 30% of the total hours.		
19.	Assessment methods			
	19.1.	Tests: points		2 tests, each with min. 15, max. 30 points.
	19.2.	Written essay/project assignment, oral or written presentation: points		min. 6, max. 10 points.
	19.3.	Final exam: points		30-60 points.
20.	Grading criteria (points/grade)		up to 59 points	5 (five) (F)
			60 to 68 points	6 (six) (E)
			69 to 76 points	7 (seven) (D)
			77 to 84 points	8 (eight) (C)
			85 to 92 points	9 (nine) (B)
			93 to 100 points	10 (ten) (A)
21.	Method of monitoring the quality of teaching process	Report from the Self-evaluation committee and anonymous student survey		
22.	Literature			
	22.1.	Mandatory literature		

		No.	Author	Title	Publisher	Year
		1.	John S. Lucas (Editor), Paul C. Southgate (Editor), Craig S. Tucker (Editor)	*Aquaculture: Farming Aquatic Animals and Plants, 3rd Edition*	Wiley-Blackwell	2018
		2.				
		3.				
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year
		1.	T. V. R. Pillay, M. N. Kutty	*Aquaculture: Principles and Practices, 2nd Edition*	Wiley-Blackwell	2005
		2.				
		3.				

Attachement no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Changes in Laboratory Profiles of Companion Animal Diseases**			
2.	Code	VME2023-47			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Internal Diseases in Small Animals and Equides			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Sixth (VI)	Semester	Twelfth (XII)
7.	Course load expressed in ECTS credits	2.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Assoc. Prof. Elena Atanaskova Petrov, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course				
11.	Objectives of the course program (competencies) and learning	This course will give future practitioners a basis to integrate clinical signs and laboratory findings in order to obtain			

	outcomes	a comprehensive diagnosis. One of the most important elements that future clinicians will be introduced to is the difference between static and dynamic testing.		
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	Theoretical part: Serum tests 1 part; Serum tests part 2; Serum tests part 3; Hematological analyses; Urine analysis; Digestion Tests 1 part; Digestion Tests Part 2; Blood coagulation tests; Veterinary Medicine Faculty of Veterinary Medicine - Skopje Special serological tests 1; Special serological tests part 2; Laboratory profiles of certain diseases in dogs and cats (endocrinological); Laboratory profiles of certain diseases in dogs and cats (pancreas and liver); Laboratory profiles of certain diseases in dogs and cats (gastrointestinal and urinary); Laboratory profiles of certain immunological and infectious diseases in dogs and cats; Laboratory profiles of certain diseases in dogs and cats (respiratory and cardiac) Practical part: Interpretation of laboratory analyzes in dogs and cats; Interpretation of laboratory analyzes in dogs and cats part 2; Interpretation of laboratory analyzes in dogs and cats part 3; Interpretation of hematological analyzes in dogs and cats; Interpretation of urine tests in dogs and cats; Interpretation of digestion test results (part 1 and 2); Interpretation of hemostasis; Interpretation of results of special serological tests (part 1 and 2); Diagnostics based on clinical findings and laboratory results (endocrinological); Diagnosis based on clinical findings and laboratory results (pancreas and liver); Diagnostics based on clinical findings and laboratory results (gastrointestinal and urinary); Diagnostics based on clinical findings and laboratory results (immunological, infectious, poisonings); Diagnostics based on clinical findings and laboratory results (respiratory and cardiovascular).		
13.	Inter-connection with other subjects (courses)	Internal Diseases of Small Animals and Equids 1 and 2		
14.	Detailed description of teaching and working methods for the subject	Interactive lectures and developing discussions about different internal diseases and their implication on the laboratory analyses.		
15.	Total available time	50 hours Theory classes: 1 hour/week (15 hours) Practicals: 1 hour/week (15 hours)		
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	15
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours	15
		16.3.	Practice: total hours	
17.	Other forms of activities	17.1.	Project assignments: hours	
		17.2.	Individual tasks: hours	10
		17.3.	Self-directed learning	10
18.	Conditions for receiving authorization	The student gets authorisation if he/she has a minimum attendance of 70% of lectures and practical.		
19.	Assessment methods			
	19.1.	Tests: points		
	19.2.	Written essay/project assignment, oral or wrriten presentation: points		5-15
	19.3.	Final exam: points		60-100

20.	Grading criteria (points/grade)			up to 59 points	5 (five) (F)	
				60 to 68 points	6 (six) (E)	
				69 to 76 points	7 (seven) (D)	
				77 to 84 points	8 (eight) (C)	
				85 to 92 points	9 (nine) (B)	
				93 to 100 points	10 (ten) (A)	
21.	Method of monitoring the quality of teaching process			Report from the Self-evaluation committee and anonymous student survey		
22.	Literature					
	22.1.	Mandatory literature				
		No.	Author	Title	Publisher	Year
		1.	Willard, M.D. and Tvedten, H.	*Small animal clinical diagnosis by laboratory methods*	Elsevier Health Sciences	2011
		2.	Sodikoff, C.H.	*Laboratory profiles of small animal diseases: a guide to laboratory diagnosis*	Mosby Inc.	2001
		3.				
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year
		1.				
		2.				
		3.				

Attachement no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Clinical Pathophysiology**			
2.	Code	VME2023-48			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Pathophysiology			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Sixth (VI)	Semester	Twelfth (XII)
7.	Course load expressed in ECTS credits				
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Igor Ulchar, PhD Prof. Irena Celeska, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course	For attending: Decision on Study Rules for first and second cycle integrated studies (undergraduate studies) and second cycle studies (postgraduate studies) at FVMS (UG 554, 26.07.2021).			

		For passing the course: All prerequisite courses mentioned in point 13 + Pathophysiology 1 and Pathophysiology 2, and propositions described in point 18.
11.	Objectives of the course program (competences) and learning outcomes	led knowledge of laboratory methods for detection of hysiological disorders and their practical use in diagnostics. es competencies for: principles of preanalytic, analytic and alytic stage in laboratory diagnostics; diagnostics of inopathies; diagnostics of cancer and monitoring of chemotherapy; stics of health and production status in farm animals.
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	**Seminars: teaching chapter (learning outcome)** 1.-4. Taking and proper handling with blood samples (knowledge of principles of preanalytic stage of laboratory diagnostics) 5.-8. Performance of laboratory tests and their verification and validation (knowledge of principles of analytic stage of laboratory diagnostics) 9.-12. Principles of work with laboratory equipment, handling with testing reagents (knowledge of principles of analytic stage of laboratory diagnostics13.-16. Interpretation of result as biomarkers for diagnostic of certain disease (knowledge of principles of postanalytic stage of laboratory diagnostics) 17.-20. Enocrinopathies in small animals and parameter used for their examination (knowledge with diagnostics of endocrinopathies) 21.-24. Biomarkers in oncological patients and monitoring of chemotherapy (knowledge with diagnostics and monitoring of cancer) 25-28. Metabolic status in farm animals (knowledge of diagnostics of health and production status in farm animals) 29.-30. Heat stress and biomarkers in inflammatory reaction in farm animals (knowledge of diagnostics of health and production status in farm animals)
13.	Inter-connection with other subjects (courses)	Complementary: Pathophysiology 1-2
14.	Detailed description of teaching and working methods for the subject	**Seminars** Work in small group of students with their active participation (interactive teaching): sharing opinions, ideas, discussion. **Project assignments – supervised group work** Teaching sessions directed towards a smaller group of students during which they work as a team, on part of the theoretical aspects, prepared from manuscript notes, photocopied documents, articles and bibliographic references. Information is illustrated and knowledge extended by the oral presentation of audio-visual material, with opportunity for discussion with other students. **Individual tasks – supervised individual work** Teaching sessions directed towards a individual students during which they work on their own, on part of the theoretical aspects, prepared from manuscript notes, photocopied documents, articles and bibliographic references. Information is illustrated and knowledge extended by the oral presentation of audio-visual material, with opportunity for discussion with other students. **Self-directed learning – supervised self-learning** Sessions of individual students making use of defined teaching material provided by the Faculty or by course teacher(s). Gained knowledge is presented with written assay, which is matter of assessment by the course teacher. Supervised group or individual work (project assignments, individual tasks and self-directed learning) is mandatory additional student activity, as optional opportunity for extending student's knowledge about predicted learning outcomes. The type

		of this additional activity is chosen by students by their own, with consultation with course teacher(s), also the topic which would be concerned within this work. One student could realise various types of additional activities, but the total score of points gained with these activities could not be higher than maximal point score predicted for such activities in course programme. For realising additional activities, students have to use various digital teaching aids (e-learning) provided by the course teacher(s), or available on Faculty's digital platform and from referent on-line databases, with access provided by the Faculty. With additional activity student not expands his/her knowledge in certain learning outcome(s), but also improves his/her skills concerning information literacy and data management. All types of teaching (seminars, additional activity) are in general organised with physical presence, but if necessary, they could be organised on-line or hybrid (physical presence + on-line).		
15.	Total available time	50 hours Practicals: 2 hours/week (30 hours)		
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours	30
		16.3.	Practice: total hours	
17.	Other forms of activities	17.1.	Project assignments: hours	20
		17.2.	Individual tasks: hours	
		17.3.	Self-directed learning	
18.	Conditions for receiving authorization	The minimum allowed number of unearned points due to justified absences according to Article 8 of the Decision on Study Rules for first and second cycle integrated studies (undergraduate studies) and second cycle studies (postgraduate studies) at FVMS (UG 554, 26.07.2021) is 4.5 points from seminars. The student could earn these points in agreement with the course teachers by completing homework assigned by the course teachers.		

19.	Assessment methods		
	19.1.	Attendance and activity on seminars: points	Attendance on seminars: 15 points Activity on seminars: 15 points
	19.2.	Written essay/project assignment, oral or writen presentation: points	Project assignments / Individual tasks / Self-directed learning: 10 points
	19.3.	Final test: points	Final test (written): maximum 60 points

20.	Grading criteria (points/grade)	up to 59 points	5 (five) (F)
		60 to 68 points	6 (six) (E)
		69 to 76 points	7 (seven) (D)
		77 to 84 points	8 (eight) (C)
		85 to 92 points	9 (nine) (B)
		93 to 100 points	10 (ten) (A)
21.	Method of monitoring the quality of teaching process	Report from the Self-evaluation committee and anonymous student survey	
22.	Literature		
	22.1.	Mandatory literature	

		No.	Author	Title	Publisher	Year
		1.	KS Latimer (ed.)	*Duncan and Prasse's Veterinary Laboratory Medicine – Clinical Pathology (5th Ed.)*	Wiley-Blackwell	2011
		2.	MG Kerr	*Veterinary Laboratory Medicine (2nd Ed.)*	Blackwell Science	2002
		3.		*Teaching aids in textual form prepared by the course teachers*		
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year
		1.	JM Dobson, BDX Lascelles (eds.)	*BSAVA Manual of Canine and Feline Oncology (2nd Ed.)*	BSAVA	2003
		2.	A Aggarwal, R Upadhyay	*Heat Stress and Animal Productivity*	Springer India	2013
		3.				

Attachment no. 3		**Integrated first and second cycle of studies**
1.	Program course title	**Parasitological Cases**
2.	Code	VME2023-49
3.	Study program	Veterinary medicine
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss. Cyril and Methodius University in Skopje Department of Parasitology and Parasitic Diseases
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies

6.	Academic year / semester	Year	Sixth (VI)	Semester	Twelfth (XII)
7.	Course load expressed in ECTS credits	2.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Jovana Stefanovska, PhD Prof. Aleksandar Cvetkovikj, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course				
11.	Objectives of the course program (competencies) and learning outcomes	Through the course seminars the students will broaden the knowledge about clinical cases in veterinary medicine of parasitic etiology.			
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	Seminars: Case reports in various domestic animals caused by protozoa, trematodes, cestodes, nematodes, acanthocephala and arthropods with emphasis on clinical diagnosis, parasitological diagnosis, differential diagnosis, radiological analyses, blood count and biochemical blood analyses, urinalysis and therapeutic approach.			
13.	Inter-connection with other subjects (courses)	Parasitology and Parasitic Diseases 1 and 2.			
14.	Detailed description of teaching and working methods for the subject	Seminars: interactive (lectures in large group with discussion and active participation of the students). Written essay: learning with use of referent textbooks and internet, preparing written essay; presentation and discussion about the written essay.			
15.	Total available time	50 hours Seminars: 2 hours/per week (30 hours)			
16.	Forms of teaching activities	16.1.	Seminars: hours		30
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours		
		16.3.	Practice: total hours		
17.	Other forms of activities	17.1.	Project assignments: hours		
		17.2.	Individual tasks: hours		
		17.3.	Self-directed learning		20
18.	Conditions for receiving authorization				
19.	Assessment methods				
	19.1.	Tests: points		Presence: 11-20 points	
	19.2.	Written essay/project assignment, oral or written presentation: points		15-30 points	
	19.3.	Final exam: points		34-50 points	
20.	Grading criteria (points/grade)	up to 59 points		5 (five) (F)	
		60 to 68 points		6 (six) (E)	
		69 to 76 points		7 (seven) (D)	
		77 to 84 points		8 (eight) (C)	
		85 to 92 points		9 (nine) (B)	
		93 to 100 points		10 (ten) (A)	
21.	Method of monitoring the quality of teaching process	Report from the Self-evaluation committee and anonymous student survey			
22.	Literature				

	22.1.	Mandatory literature				
		No.	Author	Title	Publisher	Year
		1.	Anne M. Zajac, Gary A. Conboy, Susan E. Little, Mason V. Reichard	*Veterinary clinical parasitology, 9th Edition*	Wiley Blackwell	2021
		2.	Hany Elsheikha, Jon Patterson	*Veterinary Parasitology - Self Assessment Color Review*	Manson Publishing Ltd.	2013
		3.				
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year
		1.	Peter D. Constable, Kenneth W. Hinchcliff, Stanley H. Done, Walter Gruenberg	*Veterinary Medicine - A textbook of the diseases of cattle, horses, sheep, pigs and goats, 11th ed.*	Elsevier Ltd.	2017
		2.				

Attachement no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Advanced Reproductive Endocrinology**			
2.	Code	VME2023-50			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Reproduction			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Sixth (VI)	Semester	Twelfth (XII)
7.	Course load expressed in ECTS credits	2.0			
8.	Teacher (leading	Prof. Toni Dovenski, PhD			

	teacher, in case of multiple teacher)	Prof. Branko Atanasov, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course				
11.	Objectives of the course program (competencies) and learning outcomes	The aim of the course is to obtain fundamenals for possibilities of practical application of reproductive endocrinology. The students will upgrade their previous knowledge from the course Reproduction 1 and 2. They will be able for individual work in realization of individual treatments for estrus synchronization and ovulation, partus synchronization, induction of lactation, superovulation treatments etc.			
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	Estrus and ovulation synchronization methods. Partus synchronization methods. Superovulation provocation methods.			
13.	Inter-connection with other subjects (courses)	Rerpoduction 1 and 2			
14.	Detailed description of teaching and working methods for the subject	Independently performing treatments under expert supervision and preparation of seminar paper using professional literature and internet, in order to encouraging the student for independent work and research.			
15.	Total available time	50 hours Practricals: 2 hours/week (30 hours)			
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours		
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours		30
		16.3.	Practice: total hours		
17.	Other forms of activities	17.1.	Project assignments: hours		
		17.2.	Individual tasks: hours		
		17.3.	Self-directed learning		20
18.	Conditions for receiving authorization				
19.	Assessment methods The student is obligated for active participation in all predicted activities for gaining points which are part of the final grading.				
	19.1.	Tests: points			
	19.2.	Written essay/project assignment, oral or wrriten presentation: points			
	19.3.	Final exam: points			
20.	Grading criteria (points/grade)		up to 59 points		5 (five) (F)
			60 to 68 points		6 (six) (E)
			69 to 76 points		7 (seven) (D)
			77 to 84 points		8 (eight) (C)
			85 to 92 points		9 (nine) (B)
			93 to 100 points		10 (ten) (A)
21.	Method of monitoring the quality of teaching process		Report from the Self-evaluation committee and anonymous student survey		
22.	Literature				
	22.1.	Mandatory literature			
		No.	Author	Title	Publisher	Year

		1.				
		2.	I. Gordon,	Laboratory Production of Cattle Embryos	Published by CABI Publishing	2004
		3.				
		4.				
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year
		1.				
		2.				
		3.				

Attachement no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Pet Bird Husbandry and Diseases**			
2.	Code	VME2023-51			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Avian Diseases			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Sixth (VI)	Semester	Twelfth (XII)
7.	Course load expressed in ECTS credits	2.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Aleksandar Dodovski, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course	All courses attended from V till VIII semester.			
11.	Objectives of the course program (competencies) and learning outcomes	The aim of the course is to give students a theoretical basis for breeding methods and diseases in caged bird species. The seminars include a presentation of the basics of the structure and function of organic systems, methods of cultivation, prevention of the introduction of infectious diseases into the farm, specific immunoprophylaxis and familiarization with diseases of different etiological nature and their possible treatment. During the teaching, clinical problems will be solved in groups, presented in the form of examples from everyday veterinary practice.			
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	Anatomical and physiological peculiarities of caged birds. Husbandry. Clinical examination. Viral diseases. Bacterial diseases. Fungal diseases. Parasitic diseases. Deficiencies. Metabolic diseases. Poisonings. Behavioral disorders. Dosage and method of application			

		of drugs.			
13.	Inter-connection with other subjects (courses)	Pathophysiology 1 and 2, General and Special Veterinary Pathology, Infectious Diseases in Domestic Animals 1 and 2			
14.	Detailed description of teaching and working methods for the subject	Seminars: discussion of topics mentioned in the lectures or read in the professional literature; active participation of students (expression of opinions, ideas, discussion); Project assignment: learning using professional literature and the Internet, writing an essay/poster			
15.	Total available time	50 hours Practicals: 2 hours/per week (30 hours)			
16.	Forms of teaching activities	16.1.	Practical lectures (laboratory, auditorial), seminars, team work: hours	30	
17.	Other forms of activities	17.1.	Project assignments: hours	20	
18.	Conditions for receiving authorization	In order to be able to take the final exam the student must have passed the exams of the following courses: Patophysiology and Pathology.			
19.	Assessment methods				
	19.1.	Activity and attending classses		30-50	
	19.3.	Written essay/project assignment, oral or wrriten presentation: points		30-50	
20.	Grading criteria (points/grade)		up to 59 points	5 (five) (F)	
			60 to 68 points	6 (six) (E)	
			69 to 76 points	7 (seven) (D)	
			77 to 84 points	8 (eight) (C)	
			85 to 92 points	9 (nine) (B)	
			93 to 100 points	10 (ten) (A)	
21.	Method of monitoring the quality of teaching process	Report from the Self-evaluation committee and anonymous student survey			

22.	Literature					
	22.1.	Mandatory literature				
		No.	Author	Title	Publisher	Year
		1.	J. Samour (Ed.)	*Avian Medicine 3rd edition*	Elsevier	2015
		2.	Robert E. Schmidt, Drury R. Reavill, David N. Phalen (Eds.)	*Pathology of Pet and Aviary Birds, 2nd edition*	Willey Blackwell	2015

Attachement no. 3		**Integrated first and second cycle of studies**
1.	Program course title	**Selected Techniques for Surgical Fracture Reduction**
2.	Code	VME2023-52
3.	Study program	Veterinary medicine

4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Surgery, Orthopedics and Ophtlamology			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Sixth (VI)	Semester	Twelfth (XII)
7.	Course load expressed in ECTS credits	2.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Plamen Trojachanec, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course	Listend General surgery, Soft tissue surgery and Orthopedics and Rehabilitation			
11.	Objectives of the course program (competencies) and learning outcomes	The aim of the course is to enable the students to expand and apply their previously acquired knowledge of anatomy, general surgery and orthopedics. Students will have the opportunity to gain appropriate knowledge necessary for proper diagnosis and treatment of injuries at the locomotory system and practical work in selected clinical problems.			
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	Surgical fracture reduction in small animals (dogs, cats, and other small mammals) is a critical aspect of orthopedic surgery. The goal of fracture reduction is to restore normal alignment, function, and stability to fractured bones while minimizing complications. Different techniques are used based on the type, location, and severity of the fracture: Indications and procedures for closed reduction and internal fixation (CRIF), Indications and procedures for open reduction and internal fixation (ORIF), Indications and procedures for external fixation, Indications and procedures for bone plate fixation, Indications and procedures for intramedular pinning, Fracture repair in small exotic pets			
13.	Inter-connection with other subjects (courses)	Orthopedics and Rehabilitation, Soft Tissue Surgery			
14.	Detailed description of teaching and working methods for the subject	Independently performing of surgical procedures under the qualified supervision and preparing the written assay by using referent textbooks and internet in order to encourage the student for independent work and research.			
15.	Total available time	Practicals: 2 hours/per week (30 hours)			
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours		
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours		
		16.3.	Practice: total hours		30
17.	Other forms of activities	17.1.	Project assignments: hours		
		17.2.	Individual tasks: hours		
		17.3.	Self-directed learning		20
18.	Conditions for receiving authorization				
19.	Assessment methods The student is obligated for active participation in all predicted activities for gaining points which are				

	part of the final grading				
	19.1.	Tests: points			
	19.2.	Written essay/project assignment, oral or wrriten presentation: points			
	19.3.	Final exam: points			
20.	Grading criteria (points/grade)		up to 59 points	5 (five) (F)	
			60 to 68 points	6 (six) (E)	
			69 to 76 points	7 (seven) (D)	
			77 to 84 points	8 (eight) (C)	
			85 to 92 points	9 (nine) (B)	
			93 to 100 points	10 (ten) (A)	
21.	Method of monitoring the quality of teaching process		Report from the Self-evaluation committee and anonymous student survey		
22.	Literature				
	22.1.	Mandatory literature			
		No.	Author	Title	Publisher	Year
		1.	Johnston S.S.. Tobias K.M.	*Veterinary surgery, 2nd edition*	Elsevier	2017
		2.	Fossum Theresa W.	*Small animal surgery, 5th edition*	Elsevier	2018
		3.	DeCamp Charles E.	*Brinker, Piermattei and Flo's Handbook of Small Animal Orthopedics and Fracture, 5th Edition*	Elsevier	2015
		4.	Lindley S., Watson P.	*BSAVA Manual of Canine and Feline Rehabilitation, Supportive and Palliative*	BSAVA	2010
		5.	Johnson Ann L., Houlton John E.F., Vannini Ricco	*AO Principles in the Fracture management in the Dog an Cat*	Thieme	2005
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year
		1.				
		2.				
		3.				

Attachement no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Food Microbiology**			
2.	Code	VME2023-53			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Food safety and Veterinary Public Health			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Sixth (VI)	Semester	Twelfth (XII)
7.	Course load expressed in ECTS credits	2.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Pavle Sekulovski, PhD Prof. Dean Jankuloski, PhD Prof. Sandra Mojsova, PhD Prof. Mirko Prodanov, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course				
11.	Objectives of the course program (competencies) and learning outcomes	The aim of the course is to provide students with an in-depth theoretical and practical knowledge of food microbiology. Lectures include an overview of the fundamentals of food microbiology, the metabolism of microorganisms, the mechanisms of their growth, reproduction, and death, and the factors influencing them. Students learn in detail about the types of microorganisms and their characteristics and the dangers they pose to human health. In hands-on instruction, students are introduced to routine and advanced methods for detecting microorganisms, as well as rapid and automated methods in food microbiology			
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	Seminars Development and evolution of food microbiology. General principles of the growth and development of microorganisms. Dynamic growth factors of microorganisms. Dynamics of microorganism death. Interaction between factors affecting the survival of microorganisms. Microorganisms that spoil food. Food poisoning. Pathogenic bacteria in food. Mycotoxinogenic molds. Viruses. Parasites in food and water. Indicator microorganisms. Food fermentation. Microbial quality control and food safety. Microbiological criteria. Routine			

		methods in food microbiology. Fast methods and automation. Advanced Methods in Food Microbiology			
13.	Inter-connection with other subjects (courses)				
14.	Detailed description of teaching and working methods for the subject	Seminars: group work with discussion and student engagement. Practical Teaching: Laboratory exercises in food microbiology; Active participation of students in laboratory work on isolation and identification of microorganisms. Term paper: learning using professional literature and the Internet; Drafting a term paper			
15.	Total available time	50 hours Seminars: 1 hour/per week (15 hours) Practical instruction: 1 hour/per week (15 hours)			
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours		
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours		30
		16.3.	Practice: total hours		
17.	Other forms of activities	17.1.	Project assignments: hours		
		17.2.	Individual tasks: hours		
		17.3.	Self-directed learning		20
18.	Conditions for receiving authorization				
19.	Assessment methods The student is required to actively monitor all scheduled activities by which he earns points as part of the final assessment. Continuous knowledge testing (two): written First check: Fundamentals of Food Microbiology Second check: Advanced Food Microbiology Final exam: oral or written (includes one Continuous Inspection)				
	19.1.	Tests: points			Min. 40 max. 60
	19.2.	Written essay/project assignment, oral or wrriten presentation: points			Min. 5 max. 10
	19.3.	Activity and participation			Min. 15 max. 30
20.	Grading criteria (points/grade)		up to 59 points		5 (five) (F)
			60 to 68 points		6 (six) (E)
			69 to 76 points		7 (seven) (D)
			77 to 84 points		8 (eight) (C)
			85 to 92 points		9 (nine) (B)
			93 to 100 points		10 (ten) (A)
21.	Method of monitoring the quality of teaching process		Report from the Self-evaluation committee and anonymous student survey		
22.	Literature				
	22.1	Mandatory literature			
		No.	Author	Title	Publisher	Year

		1.	Eley, A. R.	*Microbial Food Poisoning*	Springer	1996
		2.	Garbutt, J	*Essentials of Food Microbiology*	Hodder Arnold	1997
		3.	Doyle, M.P., Beuchat, L.R., Montville, T.J	*Food Microbiology: Fundamentals and Frontiers*	ASM Press	2007

Attachment no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Chemistry of Food Quality**			
2.	Code	VME2023-54			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Chemistry			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year	Year	Sixth (VI)	Semester Summer	Twelfth (XII)
7.	Course load expressed in ECTS credits.	2.0			
8.	Teacher (leading teacher, in case of multiple teachers)	Prof. Zehra Hajrulai –Musliu, PhD Assis. prof. Risto Uzunov, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course				
11.	Objectives of the course program (competencies) and learning outcomes	As one of the most significant parts of food science, food chemistry aims to introduce students to the role and significance of the composition and properties of nutritional components, chemical changes that affect time the storage and preparation process, familiarization with the nutritional values, quality, and safety of foods all to understand that the quality and safety of food depend on the chemical and physical processes.			
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	The curriculum of the Food Chemistry course is designed to provide students with knowledge of chemical aspects of food composition, with particular emphasis on the functional properties and chemical reactions of the main ones Food components include carbohydrates, lipids, proteins, and water. Students will learn about food analysis and its components (water, amino acids, peptides, etc.). proteins, carbohydrates, polysaccharides, lipids, vitamins, minerals); reactions of food components during its processing (Maillard reaction, etc.); non-microbial contaminants (such as heavy metals and pesticides), colors, aromatic compounds, artificial sugars, preservatives, and fats. It will also be notable that the section on the interpretation of			

		the food legislation prescribed by the Code of Food Standards be processed to ensure compliance with the analysis of crucial food components. Students will gain practical experience in analyzing some of the components of food through organoleptic examination (taste, aroma, color, texture), as well as for the chemical composition of food products (milk and milk products, meat and meat products, honey, caffeine, water, ash, lipids, carbohydrates, calcium, sodium, proteins and compounds for flavor enhancement). The course is intended to give students an overview of the chemical and physical properties of the major and minor food components and their changes during the product's processing, handling, and storage. The course covers analyses of water, carbohydrates, proteins, lipids, minerals, vitamins, enzymes, dyes, flavor enhancers, and additives. Emphasis will be placed on applied aspects of food chemistry using examples from practice and laboratory experiments. **Practical teaching** Through practical teaching, the student will acquire the knowledge to distinguish nutrients to compare different types of food, discuss the composition of different food products - to calculate energy values of various food products; to carry out analyses for the determination of the essential ingredients in food products; to determine by analysis basic ingredients in different food products; - to identify obtained results and, based on them, judge the quality of the given product; - to use methods for determination of carbohydrates, fats, proteins, vitamins, and mineral substances in different food stuffs products (oils, fats,milk, and dairy products from meat, cereals, alcoholic beverages, fruits, and vegetables); -to keep a laboratory diary.		
13.	Inter-connection with other subjects (courses)	Listened all subjects up to III semester		
14.	Detailed description of teaching and working methods for the subject	Theoretical teaching: interactive (lectures in a large group with discussion and engagement of students) Practical teaching: exercises and other forms of work in small groups **Seminar work:** learning using professional literature and the Internet, preparation of a seminar paper (essay/poster); presentation and discussion of the seminar work		
15.	Total available time	50 hours Theory classes: 1 hour/week (15 hours) Practicals: 1 hour/week (15 hours)		
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	15
		16.2.	Practical lectures (laboratory, auditorial), seminars, teamwork: hours	
		16.3.	Practice: total hours	15
17.	Other forms of activities	17.1.	Project assignments: hours	
		17.2.	Individual tasks: hours	
		17.3.	Self-directed learning	20
18.	Conditions for receiving authorization	To take the final exam, the student must score at least 45 points from the theoretical, practical teaching, and the four continuous tests. Suppose the student, through the constant knowledge check, did not show the result of one knowledge check and won points only for theoretical and practical teaching. In that case, he approaches a complete final exam.		

		The student must have passed chemistry and biochemistry to take the final exam.			
19.	Assessment methods				
	19.1.	Tests: points		Continuous checks (two) min 15(x2)=30 max30(x2)=60 Total30-60	
	19.2.	Written essay/project assignment, oral or written presentation: points		Attendance at seminars 12- 15 Presence and activity (knowledge) of practical teaching 12- 15 Seminar Paper 6 -10	
	19.3.	Final exam: points		Not predicted	
20.	Grading criteria (points/grade)		up to 59 points	5 (five) (F)	
			60 to 68 points	6 (six) (E)	
			69 to 76 points	7 (seven) (D)	
			77 to 84 points	8 (eight) (C)	
			85 to 92 points	9 (nine) (B)	
			93 to 100 points	10 (ten) (A)	
21.	Method of monitoring the quality of teaching process		Report from the Self-evaluation committee and anonymous student survey		

22.						
	Literature					
	22.1.	Mandatory literature				
		No.	Author	Title	Publisher	Year
		1.	Yeshajahu Pomeranz Clifton E. Meloan	*Foood Analysis Theory and practice Third edition*	Longman, London	2021
		2.	Vassilis Kontogiorgos	*Introduction to Food Chemistry*	Springer	2021
		3.	Jan Velisek, Richard Koplik, Karel Cejpek	*The Chemistry of Food, 2nd Edition*	Wiley-Blackwell	2020
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year
		1.				
		.2.				

Attachment no. 3		**Integrated first and second cycle of studies**
1.	Program course title	**Residues and Contaminants in Food**
2.	Code	VME2023-55
3.	Study program	Veterinary medicine

4.	Organizer of the study program (unit, i.e., institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Chemistry			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year/semester	Year	Sixth (VI)	Semester	Twelfth (XII)
7.	Course load expressed in ECTS credits.	2.0			
8.	Teacher (leading teacher, in case of multiple teachers)	Prof. Zehra Hajrulai –Musliu, PhD Assist. prof Risto Uzunov, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course				
11.	Objectives of the course program (competencies) and learning outcomes	The course aims for students to gain in-depth knowledge of residue monitoring and contaminants in human food. They will familiarize themselves with the European and domestic legal framework that refers to the presence of these substances in food, as well as the control of their use and the penal provisions in case of exceeding the legal provisions. In the practical part, students will attend and take an active part in laboratory analyses to prove certain residues and contaminants in food.			
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	Content of the subject program Legal framework for controlling residues and contaminants in food of animal origin. Division of residues and pollutants according to European legislation. Stilbeny. Thyrostatics. Steroids. Resorcil lactones acid. Beta agonists. Other substances - Group A6. Antimicrobial substances. Veterinary drugs (anthelmintics, coccidiostats, carbamates and pyrethroids, sedatives, NSAIDs, other pharmacologically active substances). Organochlorine pesticides and PCBs. Organophosphorus pesticides. Toxic elements. Mycotoxins. Colors. MRL, ADI. Specific control measures. Monitoring and control plans for residues. Detection methods and quantification. Laboratory network, interlaboratory testing, accreditation			
13.	Inter-connection with other subjects (courses)	Listened all subjects up to the VI semester			
14.	Detailed description of teaching and working methods for the subject	Theoretical teaching: interactive (lectures in a large group with discussion and engagement of students) Practical teaching: exercises and other forms of work in small groups **Seminar work:** learning using professional literature and the Internet, preparation of a seminar paper (essay/poster); presentation and discussion of the seminar work			
15.	Total available time	50 hours Theory classes: 1 hour/week (15 hours) Practicals: 1 hour/week (15 hours)			
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours		15
		16.2.	Practical lectures (laboratory, auditorial), seminars, teamwork: hours		

		16.3.	Practice: total hours	15
17.	Other forms of activities	17.1.	Project assignments: hours	
		17.2.	Individual tasks: hours	
		17.3.	Self-directed learning	20
18.	Conditions for receiving authorization	To take the final exam, the student must score at least 45 points from the theoretical, practical teaching, and the four continuous tests. Suppose the student, through the constant knowledge check, did not show the result of one knowledge check and won points only for theoretical and practical teaching. In that case, he approaches a complete final exam. The student must have passed chemistry and biochemistry to take the final exam.		

19.	Assessment methods		
	19.1.	Tests: points	Continuous checks (two) min 15(x2)=30 Max 30(x2)=60 Total 30-60
	19.2.	Written essay/project assignment, oral or written presentation: points	Attendance at seminars 12- 15 Presence and activity (knowledge) of practical teaching 12- 15 Seminar Paper 6 -10
	19.3.	Final exam: points	Not predicted

20.	Grading criteria (points/grade)	up to 59 points	5 (five) (F)
		60 to 68 points	6 (six) (E)
		69 to 76 points	7 (seven) (D)
		77 to 84 points	8 (eight) (C)
		85 to 92 points	9 (nine) (B)
		93 to 100 points	10 (ten) (A)
21.	Method of monitoring the quality of teaching process	Report from the Self-evaluation committee and anonymous student survey	

22. Literature

22.1. Mandatory literature

No.	Author	Title	Publisher	Year
1.	D Schrenk, Alexander Cartus:	*Chemical Contaminants and Residues in Food: Second Edition*	Woodhead Publishing, Series in food science, Technology and Nutrition	2017
2.	D. Watson:	*Food chemical safety-volume1 Contaminants*	Woodhead Publishing, Series in food science, Technology and Nutrition	2001

		3.	Franco Pedreschi Plasencia, Zuzana Ciesarova:	*Chemical food safety Chemistry, Food Science and Technology*	Food Science and Technology, Public Health in the 21st Century	2022
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year

Attachement no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Current Food Safety Systems**			
2.	Code	VME2023-56			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Food Safety and Veterinary Public Health			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	VI (Sixth)	Semester	Twelfth (XII)
7.	Course load expressed in ECTS credits	2.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Pavle Sekulovski, PhD Prof. Dean Jankuloski, PhD Prof. Sandra Mojsova, PhD Prof. Mirko Prodanov, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and				

	passing the course			
11.	Objectives of the course program (competencies) and learning outcomes	The aim of the course is to provide students with an in-depth knowledge of modern food safety systems. During the lectures, students will get acquainted with all contamporary food safety systems such as: GMP, GHP, GAP, HACCP, TQM, LISA. Practical examples will show the implementation of these systems in different branches of the food industry and will have the opportunity to develop individual HACCP plans through seminar papers.		
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	Modern food safety systems. Good production practice. Good hygiene practice. Good Agricultural Practice. Origins of the HACCP system. Objectives of the HACCP system. The Seven Principles of HACCP. Generic HACCP plans. Implementation of the HACCP system on farms. Implementation of the HACCP system in slaughterhouses. Implementation of the HACCP system in the production of meat products. Implementation of the HACCP system in dairies. Implementation of the HACCP system in the fish and seafood industry. The relationship between HACCP and TQM. HACCP - TQM for retail and catering. HACCP and consumers. Predictive Microbiology and HACCP. Risk Analysis, HACCP and Microbiological Criteria in Food Production		
13.	Inter-connection with other subjects (courses)			
14.	Detailed description of teaching and working methods for the subject	Theoretical instruction: interactive (large-group lectures with discussion and student engagement) Practical Instruction: Exercises and other forms of small-group work Term paper: learning using professional literature and the Internet, drafting a term paper (essay/poster); Presentation and discussion of the seminar paper		
15.	Total available time	50 hours Seminars: 2 hour/per week (30 hours)		
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	
		16.2.	*Practical lectures (laboratory, auditorial), seminars, team work: hours*	30
		16.3.	*Practice: total hours*	
17.	Other forms of activities	17.1.	*Project assignments: hours*	
		17.2.	*Individual tasks: hours*	
		17.3.	*Self-directed learning*	20
18.	Conditions for receiving authorization			
19.	Assessment methods The student is required to actively monitor all scheduled activities by which he earns points as part of the final assessment. Continuous knowledge testing (two): written Final exam: oral or written (includes one Continuous Inspection)			
	19.1.	Tests: points		Min. 40 max. 60
	19.2.	Written essay/project assignment, oral or wrriten presentation: points		Min. 5 max. 10
	19.3.	Activity and participation		Min. 15 max. 30
20.	Grading criteria (points/grade)		up to 59 points	5 (five) (F)
			60 to 68 points	6 (six) (E)
			69 to 76 points	7 (seven) (D)

		77 to 84 points	8 (eight) (C)
		85 to 92 points	9 (nine) (B)
		93 to 100 points	10 (ten) (A)
21.	Method of monitoring the quality of teaching process	Report from the Self-evaluation committee and anonymous student survey	

22.	Literature					
	22.1	Mandatory literature				
		No.	Author	Title	Publisher	Year
		1.	Forsythe, S. J., Hayes, P.R.	*Food Hygiene, Microbiology and HACCP*	Springer	1998
		2.	Morrtimore, S., Wallace, C.	*HACCP A practical Approach*	Springer	1998
		3.	Pearson, A.M., Dutson, T.R.	*HACCP in Meat, Poultry and Fish Processing: Advances in Meat Research Series Vol.10*	S[ringer	
		4.				
		5.				

Attachement no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Advanced Andrology and Cryobiology**			
2.	Code	VME2023-57			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Reproduction			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Sixth (VI)	Semester	Twelfth (XII)
7.	Course load expressed in ECTS credits	2.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Toni Dovenski, PhD Prof. Branko Atanasov, PhD			
9.	Teaching language	English			
10.	Necessary prerequisites for attending and passing the course	Reproduction 1 and 2			

11.	Objectives of the course program (competencies) and learning outcomes	The aim of the course is to enable and introduce the students with the evements in andrology and cryobiology, and to present the basic ters that can be examined from the genetic material by sophisticated ory methods. The course includes a presentation and demonstration of dern methods used for testing the quality of genetic material prepared lication in the recipients, the latest procedures and protocols for its tion and cryo-conservation, detailed introduction of the media used for rpose and finally address its national and European legislation that es this field of veterinary medicine During the course, the most current methods will be present theoretically, for examine the quality of genetic material, production and cryo-conservation of deep-frozen semen from different farms animals and associated animal and also practical insight into the intended curriculum material through laboratory practicals.		
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	Biochemical and physical properties of ejaculate. Microscopic and ultramicroscopic structure of spermatozoa. Assessment of basic quantitative parameters of the ejaculate. Examination of the spermatozoa motility. Techniques for measuring the spermatozoa motility. Photo-electric and -electronic methods for examine the qualitative parameters of the ejaculates (CASA systems). Methods for testing the fertilize ability of the spermatozoa (hamster test, hypo-osmotic test, induction acrosomal reaction, induced agglutination of the sperm. Introduction to local and EU legislation governing the quality of genetic material. *Cryobiology*: Media types for maintaining the ejaculates. Fundamentals of biophysics cryobiology. Methods for cryopreservation of ejaculates (emphasis on the development of this discipline). Cryopreservation of ejaculate from ruminants, boars, stallions, carnivores. A brief review of the methods for cryopreservation of ejaculates from other animals for commercial purposes.		
13.	Inter-connection with other subjects (courses)	Reproduction 1 and 2		
14.	Detailed description of teaching and working methods for the subject	Independently performing treatments under expert supervision and preparation of paper work using professional textbooks and internet, in order to encouraging the student for independent work and research.		
15.	Total available time	50 hours Practicals: 2 hours/week (30 hours)		
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours	
		16.3.	Practice: total hours	30
17.	Other forms of activities	17.1.	Project assignments: hours	
		17.2.	Individual tasks: hours	
		17.3.	Self-directed learning	20
18.	Conditions for receiving authorization			
19.	The student is obligated for active participation in all predicted activities for gaining points which are part of the final grading.			
	19.1.	Tests: points		
	19.2.	Written essay/project assignment, oral or wrriten presentation: points		min 52 max 85 points
	19.3.	Final exam: points		Not predicted

20.	Grading criteria (points/grade)		up to 59 points	5 (five) (F)	
			60 to 68 points	6 (six) (E)	
			69 to 76 points	7 (seven) (D)	
			77 to 84 points	8 (eight) (C)	
			85 to 92 points	9 (nine) (B)	
			93 to 100 points	10 (ten) (A)	
21.	Method of monitoring the quality of teaching process		Report from the Self-evaluation committee and anonymous student survey		
22.	Literature				
	22.1.	Mandatory literature			
		No.	Author	Title	Publisher	Year
		1.	Hafez E.S.E.	*Reproduction in Farm Animals, 6thEdition*	Lea & Febiger, Philadelphia	1993
		2.	Ian R. Gordon	*Reproductive technologies in farm animals*	Published by CABI,ISBN 0851998623 , 9780851998626	2004
		3.				
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year
		1.				
		2.				
		3.				

Attachement no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Wildlife Zoology**			
2.	Code	VME2023-58			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Sixth (VI)	Semester	Twelve (XII)
7.	Course load expressed in ECTS credits	2.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Appinted teacher by the Teaching Scientific council			

9.	Teaching language	English		
10.	Necessary prerequisites for attending and passing the course			
11.	Objectives of the course program (competencies) and learning outcomes	The aim of the course is to introduce the students with the basics of biological characteristics of wildlife in RNM. It includes the role of wildlife in the ecosystem, taxonomy, biological characteristics and conservation methods of wildlife. During the seminars the types of wildlife in Republic of Macedonia will be examined in groups.		
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	The role of wildlife in the ecosystem. Taxonomy and division of wildlife. Biological characteristics of wildlife in Republic of Macedonia: wild fowl, wild leporides and rodents, wild hoofed animals, wild carnivores. Endangered species. Wildlife protection measures.		
13.	Inter-connection with other subjects (courses)			
14.	Detailed description of teaching and working methods for the subject	Seminars: discussion on topics from the course or written in the referent textbooks; active participation of the student (exposing personal opinions, ideas, discussion); oral presentation of a course's topic by the student's choice. Written assay: learning with use of referent textbooks and internet, preparing wtitten assay.		
15.	Total available time	50 hours Seminars: 2 hours/week (30 hours)		
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours	30
		16.3.	Practice: total hours	
17.	Other forms of activities	17.1.	Project assignments: hours	
		17.2.	Individual tasks: hours	
		17.3.	Self-directed learning	20
18.	Conditions for receiving authorization			
19.	With gaining up to 60 points from attendance on seminars, written assay and two tests, student gets right to take grade mark without reaching the complete final exam. Complete final exam is required for the student who did not pass one of the two tests during the semester, or if he/she did not gained minimal 60 points.			
	19.1.	Tests: points		min 30 max 60
	19.2.	Written essay/project assignment, oral or wrriten presentation: points		min 6 max 10
	19.3.	Final exam: points		Not predicted
20.	Grading criteria (points/grade)		up to 59 points	5 (five) (F)
			60 to 68 points	6 (six) (E)
			69 to 76 points	7 (seven) (D)
			77 to 84 points	8 (eight) (C)
			85 to 92 points	9 (nine) (B)
			93 to 100 points	10 (ten) (A)
21.	Method of monitoring the quality of teaching process	Report from the Self-evaluation committee and anonymous student survey		
22.	Literature			
	22.1.	Mandatory literature		

		No.	Author	Title	Publisher	Year
		1.	Hawksworth L.D.and Bull T.A.	*Biodiversity and Conservation in Europe.*	Springer	2008
		2.	Hawksworth L.D.and Bull T.A.	*Vertebrate Conservation andBiodiversity.*	Springer	2007
		3.		*Grzimek's Animal Life Encyclopedia – Birds.*	Thomson-Gale	2003
		4.		*Grzimek's Animal Life Encyclopedia – Mammals*	Thomson-Gale	2004
		5.				
		6.				
		7.				
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year
		1.				
		2.				
		3.				

Attachement no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Poisonous Plant Toxicology**			
2.	Code	VME2023-59			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of pharmacology and toxicology			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Sixth (VI)	Semester	Twelfth (XII)
7.	Course load expressed in ECTS credits	2.0			
8.	Teacher (leading teacher, in case of multiple teacher)	Prof. Romel Velev, PhD			

9.	Teaching language	English		
10.	Necessary prerequisites for attending and passing the course	Listened General and Special Pharmacology and Veterinary Toxicology		
11.	Objectives of the course program (competencies) and learning outcomes	Aim of this course is to acquaint the student with systematic and morphological characteristics of plants whose effects in the animal organism is harmful or toxic, their prevalence in nature, active components that contain and which lead to intoxication, effects and symptoms that they manifest among individual animals, with pathomorphological changes and practical significance of poisoning with these plants. With the course will be processed poisoning in domestic animals caused by certain algae, fungi, ferns, and gymnosperms and angiosperms which the student is given the opportunity to visualize the different types of poisonous plants. Different types of poisonous plants and plant toxins will be exhibited in the form of examples of routine veterinary practice.		
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	*General part*: Factors affecting the toxicity of the plant. Signs of intoxication with poisonous plants. Diagnosis of intoxication with poisonous plants. Practical significance of plant poisoning. Prevention of intoxication with poisonous plants. Treatment of animals intoxicated with poisonous plants. *Special part*: Poisoning of animals caused by certain species of algae. Poisoning of animals caused by certain species of fungi. Poisoning of animals caused by certain species of ferns. Poisoning of animals caused by certain species of gymnosperms. Poisoning of animals caused by certain species of angiosperms (monocots and dicots).		
13.	Inter-connection with other subjects (courses)			
14.	Detailed description of teaching and working methods for the subject	Seminars: discussion on topics from the course or written in the referent textbooks; active participation of the student (exposing personal opinions, ideas, discussion); oral presentation of a course's topic by the student's choice. Written assay: learning with use of referent textbooks and internet, preparing wtitten assay.		
15.	Total available time	50 hours Seminars: 2 hours/per week (30 hours)		
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours	30
		16.3.	Practice: total hours	
17.	Other forms of activities	17.1.	Project assignments: hours	
		17.2.	Individual tasks: hours	
		17.3.	Self-directed learning	20
18.	Conditions for receiving authorization			
19.	Assessment methods Final exam is not predicted, except if student did not pass one of the tests.			
	19.1.	Tests: points	min 30 max 60	
	19.2.	Written essay/project assignment, oral or wrriten presentation: points	min 6 max 10	
	19.3.	Final exam: points		
20.	Grading criteria (points/grade)	up to 59 points	5 (five) (F)	
		60 to 68 points	6 (six) (E)	

		69 to 76 points	7 (seven) (D)
		77 to 84 points	8 (eight) (C)
		85 to 92 points	9 (nine) (B)
		93 to 100 points	10 (ten) (A)
21.	Method of monitoring the quality of teaching process	Report from the Self-evaluation committee and anonymous student survey	

22.

Literature

22.1. Mandatory literature

No.	Author	Title	Publisher	Year
1.	Randall C Moore, Darrell S Vodopich, W Dennis Clark, Kingsley R Stern	*Botany*	McGraw-Hill Higher Education	1995
2.	Wynn, S.G., Fougere B.J.	*Veterinary herbal medicine*	Mosby Elsevier	2007
3.				

22.2. Additional literature

No.	Author	Title	Publisher	Year
1.				
2.				
3.				

Attachement no. 3		**Integrated first and second cycle of studies**			
1.	Program course title	**Oncology**			
2.	Code	VME2023-60			
3.	Study program	Veterinary medicine			
4.	Organizer of the study program (unit, i.e. institute, department, section)	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje Department of Pathology and Forensic Medicine			
5.	Degree of education (first, second, third cycle)	Integrated first and second cycle of studies			
6.	Academic year / semester	Year	Sixth (VI)	Semester	Twelfth (XII)
7.	Course load expressed in ECTS credits	2.0			
8.	Teacher (leading teacher,	Prof. Dr. Trpe Ristoski, PhD			

	in case of multiple teacher)	Assoc. Prof. Ivica Gjurovski, PhD		
9.	Teaching language	English		
10.	Necessary prerequisites for attending and passing the course	Successfully validated attendance of all of the subjects Basic Pathology and Special Veterinary Pathology		
11.	Objectives of the course program (competencies) and learning outcomes	Considering the growing importance of tumors in everyday veterinary practice, as well as the numerous complications that arise when they occur, it is necessary for the students to get to know the pathogenesis, diagnostics and treatment of tumors in more detail. In addition to theoretical lectures, during the course, students will have the opportunity to get acquainted with the pathology of the tumors Applying the latest tumor classification, this course will cover the tumors in all the organ systems, with special reference to skin tumors and mammary gland tumors in dogs. Also tumors in domestic animals represent a very significant part of veterinary pathology and from the point of view of comparative oncology because of the great similarity with human tumors		
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	Nomenclature of tumors. Characteristics of benign and malignant tumors. Carcinogenesis: molecular basis of tumors. Etiology of tumors. Classification of tumors: tumors of mesenchymal tissue, tumors of epithelial tissue. Clinical characteristics of tumors. Laboratory diagnosis of tumors. Treatment of the tumors.		
13.	Inter-connection with other subjects (courses)			
14.	Detailed description of teaching and working methods for the subject	Theoretical teaching: a combination of interactive theoretical teaching (lectures in a large group with discussion and engagement of students), review and discussion of clinical cases, morphological and pathological characteristics of the skin; pathohistological and cytological diagnosis of skin changes; differential diagnosis and treatment of skin changes. Seminar paper: learning by using professional literature and the Internet, preparation of a seminar paper (essay/poster); presentation and discussion of the seminar paper.		
15.	Total available time	50 hours Theory classes: 2 hours/week (30 hours)		
16.	Forms of teaching activities	16.1.	Theoretical lectures: hours	30
		16.2.	Practical lectures (laboratory, auditorial), seminars, team work: hours	
		16.3.	Practice: total hours	
17.	Other forms of activities	17.1.	Project assignments: hours	20
		17.2.	Individual tasks: hours	
		17.3.	Self-directed learning	
18.	Conditions for receiving authorization	The student is responsible for actively following all the planned activities with which he earns points as part of the final assessment. Preparation of a seminar paper and presentation on the topic: Nomenclature of tumors. Characteristics of benign and malignant tumors. Carcinogenesis: molecular basis of tumors. Etiology of tumors. Classification of tumors: tumors of mesenchymal tissue, tumors of epithelial tissue. Clinical characteristics of tumors. Laboratory diagnosis of tumors. Treatment of the tumors. Final oral exam		
19.	Assessment methods			
	19.1.	Tests:		
	19.2.	Written essay/project assignment, oral or wrriten		Minimum 5,

		presentation: points		Maximum 10 points
	19.3.	Final exam: points		Minimum 50 Maximum 80 points
20.	Grading criteria (points/grade)		up to 59 points	5 (five) (F)
			60 to 68 points	6 (six) (E)
			69 to 76 points	7 (seven) (D)
			77 to 84 points	8 (eight) (C)
			85 to 92 points	9 (nine) (B)
			93 to 100 points	10 (ten) (A)
21.	Method of monitoring the quality of teaching process		Report from the Self-evaluation committee and anonymous student survey	

22. Literature

22.1. Mandatory literature

No.	Author	Title	Publisher	Year
1.	Kumar, Cotran, Robbins	*Basic Pathology, 7th edition*	Saunders Ltd. Philadephia	2003
2.	Jubb K., Kennedy P., Plummer N	*Pathology of domestic animals*	Saunders Ltd. Philadephia	1992
	Donald J. Meuten	*Tumors in domestic Animals 5th edition*	Wiley & Sons, Inc.	2016

22.2. Additional literature

No.	Author	Title	Publisher	Year
1.				
2.				
3.				

All types of teaching (theory classes, practicals, additional activity) are in general organized with physical presence, but if necessary, they could be organized on-line or hybrid (physical presence + on-line).

ANEX NO 4

No: 1	**Data for teaching staff and mentors of 3rd cycle of studies (PhD)**			
1.	Name and surname	**Velimir Stojkovski**		
2..	Date of birth	7.02.1966		
3.	Level of education	VIII		
4.	Title of teaching-scientific, teaching-professional, teaching, scientific and associate titles	PhD, Doctor in Biological science Full professor		
5.	Data on completed education, i.e. acquired academic and scientific degrees	Education	Year	Institution
		B.Sc. in Biology (biochemistry and physiology)	1990	Faculty of Natural Sciences and Mathematics, Ss. Cyril and Methodius University, Skopje
		M.Sc. in Biology (biochemistry and physiology)	1992 VIII, Ph.D.	Faculty of Natural Sciences and Mathematics, Ss. Cyril and Methodius University, Skopje
		Ph.D. in Biological sciences	1995	Faculty of Natural Sciences and Mathematics, Ss. Cyril and Methodius University, Skopje
6.	Area, field and area of the scientific degree master's studies	Area	Field	Discipline
		1	106	1.06.00.03
7.	Field, field and area of the scientific degree Doctor of Science with the corresponding code number of the scientific field of the doctorate thesis according to the International Frascati Classification of 2015 and relevant domestic acts that determine the scientific research fields of the third level - areas	Area	Field	Discipline
		1	106	1.06.00.03
8.	If he/she is employed, name of the	Institution	Title in which he was elected	Scientific field

	institution where he/she works, title and scientific field in which he/she was elected, according the appropriate code number of the International Frascati Classification from 2015 and relevant domestic acts that determines the scientific research fields of the third level - fields		Faculty of veterinary medicine, Ss. Cyril and Methodius Universit in Skopje	Full professor	1.06.00.03, 1.06.00.01

9.	List of courses that the teacher leads separately for the first, second and third cycle of studies			
	9.1.	List of courses taught by the teacher in the first cycle of studies		
		No	Course program title	Study program / Institution
		1.	Cell Biology	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		2.	Biochemistry	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		3.	Clinical Biochemistry	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		4.	Molecular Mechanisms of General Anesthesia	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		5.	Biochemical Ecotoxicology	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		6.		
		7.		
	9.2.	List of courses taught by the teacher in the second cycle of studies		
		No	Course program title	Study program / Institution
		1.		
		2.		
	9.3.	List of courses taught by the teacher in the third cycle of studies		
		No	Course program title	Study program / Institution
		1.	Comparative biochemistry	Doctoral studies in veterinary medicine, Faculty of Veterinary Medicine, Ss. Cyril and Methodius University, Skopje
		2.	Biochemical methods	Doctoral studies in veterinary medicine, Faculty of Veterinary Medicine, Ss. Cyril and Methodius University, Skopje
		3.	Neurobiochemistry	Doctoral studies in veterinary medicine, Faculty of Veterinary Medicine, Ss. Cyril and Methodius University, Skopje

		4.	Molecular cell biology	Doctoral studies in veterinary medicine, Faculty of Veterinary Medicine, Ss. Cyril and Methodius University, Skopje
		5.	Chemistry and biochemistry of food	Doctoral studies in food safety, Faculty of Veterinary Medicine, Ss. Cyril and Methodius University, Skopje
		6.	Molecular principles of genetical engineering	Doctoral studies in food safety, Faculty of Veterinary Medicine, Ss. Cyril and Methodius University, Skopje

10. Selected results in the last five years

10.1. Relevant published scientific papers (maximum 5)

No	Author	Title	Publisher / Year
1.	Hajrulai-Musliu, Z., Uzunov, R., Jovanov, S., Jankuloski, D., Stojkovski, V., Pendovski, L. and Jacob Sasanya, J.	A new LC–MS/MS method for multiple residues/contaminants in bovine meat.	BMC Chemistry 15:62, 2021. IF 3.92
2.	Hajrulai-Musliu, Z., Uzunov, R., Jovanov, S., Jankuloski, D., Stojkovski, V. Pendovski, L., Jacob Sasanya, J.	Development of a New LC–MS/MS Method for Multiple Residues/Contaminants in Bovine Meat.	Research Aspects in Biological Science 5:4, 2022.
3.	Hajrulai-Musliu, Z., Uzunov, R., Jovanov, S., Kerluku, M., Jankuloski, D., Stojkovski, V., Pendovski, L. and Jacob Sasanya, J.	Determination of veterinary drug residues, mycotoxins, and pesticide residues in bovine milk by liquid chromatography electrospray ionisation –tandem mass spectrometry.	Journal of Veterinary Research 66:2, 2022. IF 3.68
4.	Popova-Labachevska, M., Panovska-Stavridis, I., Trajkova, S., Ridova, N., Staninova, M., Stojanovska-Jakimovska, S., Pivkova-Veljanovska, A., Stojanovski, Z., Stojkovski, V.	Molecular profiling of BCR-ABL negative myeloproliferative neoplasms, going beyond driver mutations, single center experience.	Journal of Morphological Sciences. May 2023 6(1):8-16

		5.	Hajrulai-Musliu, Z., Uzunov, R., Krluku, M., Jovanov, S., Stojkovski, V., Arapcheska, M., Musliu, D., Sasanya, J.J.	Determination of Multi-Class Antimicrobial Residues and Antimicrobial Resistance in Cow Milk and Feces Samples during Withdrawal Period.	Animals, 13, 3603, (2023) https://doi.org/10.3390/ani13233603
	10.2.	Participation in national and international scientific-research projects (maximum 5)			
		No	Role in the project (project manager or participant)	Title	Time duration of the project The institution from which everything is organized, financed, implemented
		1.	IAEA	Integrated radiometric and complementary techniques from mix contaminants and residues in food.	(Project code DS2041, 2017-2021), International Atomic Energy Agency
		2.			
		3.			
		4.			
		5.			
		6.			
	10.3.	Published books in the last five years (maximum 5)			
		No	Author	Title	Publisher / Year
		1.			
		2.			
		3.			
		4.			
		5.			
	10.4.	Published professional papers in the last five years (maximum 5)			
		No	Author	Title	Publisher / Year
		1.			
		2.			
		3.			
		4.			
		5.			
		6.			
11.	Mentoring undergraduate, postgraduate and doctoral students				
	11.1.	Diploma works			
	11.2.	Master theses			
	11.3.	Doctoral dissertations		2	
12.	For mentors of PhD studies, selected results in the last four/five years				
	12.1.	Evidence of printed scientific papers in international scientific journals in the field (maximum 6) in the last five years			
		No	Author	Title	Publisher / Year

		1.	Sabriu-Haxhijaha, A., Stojkovski, V., Ilievska, G., Jankuloski, D., Blagoevska, K.	Rnase A Enzyme Modification of Optimized SDS Protocol for DNA Extraction Suitable for Real-Time PCR Screening of GMOs.	Macedonian Veterinary Review, 45(1), 2021.
		2.	Hajrulai-Musliu, Z., Uzunov, R., Jovanov, S., Jankuloski, D., Stojkovski, V., Pendovski, L. and Jacob Sasanya, J.	A new LC–MS/MS method for multiple residues/contaminants in bovine meat.	BMC Chemistry 15:62, 2021. IF 3.92
		3.	Hajrulai-Musliu, Z., Uzunov, R., Jovanov, S., Jankuloski, D., Stojkovski, V. Pendovski, L., Jacob Sasanya, J.	Development of a New LC–MS/MS Method for Multiple Residues/Contaminants in Bovine Meat.	Research Aspects in Biological Science 5:4, 2022.
		4.	Hajrulai-Musliu, Z., Uzunov, R., Jovanov, S., Kerluku, M., Jankuloski, D., Stojkovski, V., Pendovski, L. and Jacob Sasanya, J.	Determination of veterinary drug residues, mycotoxins, and pesticide residues in bovine milk by liquid chromatography electrospray ionisation – tandem mass spectrometry.	Journal of Veterinary Research 66:2, 2022. IF 3.68
		5.	Popova-Labachevska, M., Panovska-Stavridis, I., Trajkova, S., Ridova, N., Staninova, M., Stojanovska-Jakimovska, S., Pivkova-Veljanovska, A., Stojanovski, Z., Stojkovski, V.	Molecular profiling of BCR-ABL negative myeloproliferative neoplasms, going beyond driver mutations, single center experience.	Journal of Morphological Sciences. 6(1):8-16, 2023.
		6.	Hajrulai-Musliu, Z., Uzunov, R., Krluku, M., Jovanov, S., Stojkovski, V., Arapcheska, M., Musliu, D., Sasanya, J.J.	Determination of Multi-Class Antimicrobial Residues and Antimicrobial Resistance in Cow Milk and Feces Samples during Withdrawal Period.	Animals, 13, 3603, (2023) https://doi.org/10.3390/ani13233603

12.2. Evidence of at least two printed scientific papers in scientific journals with impact factor in the field in the last five years

No	Author	Title	Publisher / Year
1.	Hajrulai-Musliu, Z., Uzunov, R., Jovanov, S., Jankuloski, D., Stojkovski, V., Pendovski, L. and Jacob Sasanya, J.	A new LC–MS/MS method for multiple residues/contaminants in bovine meat.	BMC Chemistry 15:62, 2021. IF 3.92
2.	Hajrulai-Musliu, Z., Uzunov, R., Jovanov, S., Kerluku, M., Jankuloski, D., Stojkovski, V., Pendovski, L. and Jacob Sasanya, J.	Determination of veterinary drug residues, mycotoxins, and pesticide residues in bovine milk by liquid chromatography electrospray ionisation – tandem mass spectrometry.	Journal of Veterinary Research 66:2, 2022. IF 3.68
3.	Hajrulai-Musliu, Z., Uzunov, R., Krluku, M., Jovanov, S., Stojkovski, V., Arapcheska, M., Musliu, D., Sasanya, J.J.	Determination of Multi-Class Antimicrobial Residues and Antimicrobial Resistance in Cow Milk and Feces Samples during Withdrawal Period.	Animals, 13, 3603, 2023. IF 3.0 https://doi.org/10.3390/ani13233603
4.			

12.3. Evidence of at least three participations on international meetings in last five years

No.	Author	Title	International meeting/ conference	Year
1.	Стойковски, В., Йованов, С., Хайрулаи-Муслиу, З., Узунов, Р., Янкулоски, Д., Пендовски, Л.	Определение пищевых добавок в продуктах питания методом высокоэффективной жидкостной хроматографии (ВЭЖХ-ДАД).	Международная конференция «Ветеринарно-санитарная безопасность продовольствия — основа здоровья человека», Глобальный продовольственный форум 2021, Москва, 20 мая 2021.	2021
2.	Jovanov, S., Uzunov, R., Nestorovski, T., Hajrulai-Musliu, Z., Stojkovski, V.	Proposed chemical substances as quality parameters of chocolate.	Book of Abstracts. 9th International Scientific Meeting “Days of Veterinary Medicine 2022”, 22-25th September 2022, Ohrid, R. N. Macedonia	2022

		3.	Uzunov, R., Hajrulai-Musliu, Z., Jovanov, S., Dimitrieska-Stojkovikj, E., Angeleska, A., Stojanovska-Dimzoska, B., Stojkovsk, V.	Validation of the rapid ELISA method for determination of methyltestosterone in urine and muscle based on the new regulation (EU) 2021/808.	Book of Abstracts. 9th International Scientific Meeting "Days of Veterinary Medicine 2022", 22-25th September 2022, Ohrid, R. N. Macedonia	2022
		4.	Stojkovski, V., Milkovska, H., Gjorgjievska, S., Shakjiri, L., Jovanovski, M., Atanasovski, G.	Serum fructosamine concentration as a valuable marker for diagnosis and control of diabetes mellitus in cats and dogs.	10th International scientific meeting Days of veterinary medicine – 2024 and 2nd European conference on veterinary and medical education, 22-25th September 2024, Ohrid, R. N. Macedonia, Book of abstracts, p. 126.	2024
		5.	Jovanov, S., Hajrulai Musliu, Z., Uzunov, R., Nestorovski, T., Stojkovski, V., Chrcheva Nikolovska, R.	Determination of commonly used artificial colors in meat and meat products using HPLC-DAD method	10th International scientific meeting Days of veterinary medicine – 2024 and 2nd European conference on veterinary and medical education, 22-25th September 2024, Ohrid, R. N. Macedonia, Book of abstracts, p. 79.	2024

No: 2	**Data for teaching staff and mentors of 3rd cycle of studies (PhD)**		
1.	Name and surname	**Toni Dovenski**	
2..	Date of birth	06.09.1962	
3.	Level of education	VIII	
4.	Title of teaching-scientific, teaching-professional, teaching, scientific and associate titles	PhD, Doctor of Veterinary sciences Full professor	
5.	Data on completed education,	Education	Year / Institution

	i.e. acquired academic and scientific degrees	Higher education	1987	Faculty of veterinary medicine, University of Belgrade
		Master studies	1993	Faculty of veterinary medicine, University of Zagreb
		Doctoral studies	1998	Faculty of veterinary medicine, University of Zagreb
6.	Area, field and area of the scientific degree master's studies	Area	Field	Discipline
		4 Agricultural and veterinary sciences	4.03 Veterinary sciences	4.03.00.19 Reproduction in animals (Animal reproduction)
7.	Field, field and area of the scientific degree Doctor of Science with the corresponding code number of the scientific field of the doctorate thesis according to the International Frascati Classification of 2015 and relevant domestic acts that determine the scientific research fields of the third level - areas	Area	Field	Discipline
		4 Agricultural and veterinary sciences	4.03 Veterinary sciences	4.03.00.19 Reproduction in animals (Animal reproduction)
8.	If he/she is employed, name of the institution where he/she works, title and scientific field in which he/she was elected, according the appropriate code number of the International Frascati Classification from 2015 and relevant domestic acts that determines the scientific research fields of the third level - fields	Institution	Title in which he was elected	Scientific field
		Faculty of veterinary medicine, Ss. Cyril and Methodius University in Skopje	Full professor	4.03 Veterinary sciences

9. List of courses that the teacher leads separately for the first, second and third cycle of studies

9.1. List of courses taught by the teacher in the first cycle of studies

No	Course program title	Study program / Institution
1.	Reproduction 1	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
2.	Reproduction 2	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
3.	Introduction to Veterinary Medicine	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje

		4.	Advanced reproductive endocrinology	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		5.	Ultrasoned diagnostics of reproductive disorders	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		6.	Advanced andrology and cryobiology	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		7.		
	9.2.	List of courses taught by the teacher in the second cycle of studies		
		No	Course program title	Study program / Institution
		1.		
		2.		
	9.3.	List of courses taught by the teacher in the third cycle of studies		
		No	Course program title	Study program / Institution
		1.	Reproductive biotechnology	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje
		2.	Diagnostics and treatment of infertility in domestics animals	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje
		3.	Herd health management in dairy cows	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje
		4.	Mammary gland diseases	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje
		5.	Ultrasonic diagnostics in pets	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje
		6.	Herd health and production management in dairy farms	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje
		7.	Methodology of scientific research	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje
		8.	Management of postpartum uterine infections in domestic animals	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje
10.	Selected results in the last five years			
	10.1.	Relevant published scientific papers (maximum 5)		
		No	Author	Title	Publisher / Year

		1.	Ciani E., Mastrangelo S., Da Silva A., Marroni F., Ferenčaković M., Ajmone-Marsan P., Baird H., Mario Barbato, Licia Colli, Chiara Delvento, Dovenski T., Gorjanc G.,. Hall J. G S., Hoda A., Li Meng-Hua, Marković B., McEwan J., Moradi H. M., Ruiz-Larrañaga O., Ružić-Muslić D., Šalamon D., Simčič M., Stepanek O., Econogene Consortium, Sheephapmap Consortium, Curik I., Cubric-Curik V. and Lenstra A. J.,	On the origin of European sheep as revealed by the diversity of the Balkan breeds and by optimizing population-genetic analysis tools	Genet Sel Evol 52:25 (2020) (IF 4.297)
		2.	Atanasov B, Dovenski T, Celeska I, Stevenson JS.	Luteolysis, progesterone, and pregnancy per insemination after modifying the standard 7-day Ovsynch program in Holstein-Friesian and Holstein cows.	J Dairy Sci. 2021 Jun; 104(6):7272-7282 (IF 4.225)
		3.	Dovenska M., Atanasov Branko, Benc Michal, Nikolovski Martin, Pendovski Lazo, Laurincik Jozef, Dovenski T., Adamov N., Popovska-Percinic F.	Brilliant cresyl blue staining enhances the morphological quality evaluation of porcine oocytes-a preliminary study	Macedonian Veterinary Review, vol.46, no.2, 2023, pp.137-145 (IF 0.4)
		4.	Stojanov B., Atanasov B., Grizelj J., Vince S., Ilievska K., Nikolovski M., Dovenski T. Samardžija M.	External progesterone supplementation during the Ovsynch protocol reduces the incomplete luteolysis in dairy cows under heat stress	Macedonian Veterinary Review, Vol.47 (Issue 1), pp. 45-50 (IF 0.4)
		5.	Nikolovski M., Dovenska M; Petkov V., Popovska Percinic F., Dovenski T.	Glutathione and seminal plasma supplemented prior cryopreservation increase viable ram spermatozoa population with nonhyperactivated motility	Reproduction in Domestic Animals Vol. 54, 3 September 2019, 76-77
	10.2.	Participation in national and international scientific-research projects (maximum 5)			
		No	Role in the project (project manager or participant)	Title	Time duration of the project The institution from which everything is organized, financed, implemented

		1.	participant	Program for the protection of biological diversity in livestock farming	2011-2023 Ministry of Agriculture, Forestry and Water Management
		2.	MC member	Epigenetics and Periconception Environment	COST Action FA1201
		3.	UKIM	Influence of seminal plasma and reduced glutathione in the preservation of sperm biological integrity in cryopreserved ejaculates from Ovchepolska Pramenka sheep	1.2.2016-1.2.2017
		4.	AUF project (Agence Universitaire de la Francophonie)	L'optimisation des paramètres de reproduction, de génétique et de santé pour l'amélioration de la production des troupeaux de chèvres.	2017-2018
		5.	FVMS-IPR-02	Molecular studies of eggs with different developmental capacity	1.1.2020-31.12.2021
		6.	AUF project (Agence Universitaire de la Francophonie)	Étude sur les intentions entrepreneuriales des étudiants en médecine vétérinaire: innovation, transfert de connaissances et contributions au développement durable dans la Région ECO (ETUDEVET)	01.06.2024 - 31.08.2025
	10.3.	Published books in the last five years (maximum 5)			
		No	Author	Title	Publisher / Year
		1.			
		2.			
		3.			
		4.			
		5.			
	10.4.	Published professional papers in the last five years (maximum 5)			
		No	Author	Title	Publisher / Year

		1.	Dovenski Toni, Grizelj Juraj, Ilievska Ksenija, Atanasov Branko, Vince Silvijo, Nikolovski Martin, Dovenska Monika, Janevski Aleksandar, Nektarios D. Giadinis	Mastitis in small ruminants, etiology, prevalence and management	10. Scientific symposium reproduction of domestic animals and mammary gland diseases, Proceedings, 143-152; Divcibare 2019
		2.	Atanasov Branko, Adamov Nikola, Celeska Irena, Ilievska Ksenija, Mickov Ljupcho, Dovenski Toni	Comparison of two ovulation synchronization protocols to evaluate luteolysis, progesterone concentration and fertility rate in dairy cows	12. Scientific symposiu reproduction of domestic animals and mammary gland diseases, Proceedings, 91-99; Divcibare 2021
		3.	Dovenski Toni, Nikolovski Martin, Atanasov Branko, Popovska Perčinić Florina, Petkov Vladimir Dovenska Monika, Mickov Ljupčo, Kočoski Ljupce, Vince Silvijo, Juraj Grizelj	Recent advances in sheep and goat reproduction	13. Scientific symposium „Reproduction of domestic animals" p. 117-128, Divcibare 2022
		4.	Atanasov B., Murdjeva E., Nikolovski M., Mickov Lj., Ilievska K., Esmerov I., Dovenski T	Implementation of the short synch protocol to increase the conception rate in small-scale cow dairy farms	14. Scientific symposium „Reproduction of domestic animals" p.53-69, Divcibare 2023
		5.	Dovenski Toni, Petkov Vladimir, Trojacanec Plamen, Nikolovski Martin, Atanasov Branko, Popovska Perčinić Florina, Dovenska Monika, Dimitrievski Zoran, Dzabirski Vladimir.	Our experiences in the ex-situ conservation process of indigenous breeds of domestic animals using assisted reproduction tehnologies (ART)	4. Symposium Protection of agrobiodiversity and presevation of autochthonous breeds of domestic animals, Dimitrovgrad, Serbia, 85-97
		6.			
11.	Mentoring undergraduate, postgraduate and doctoral students				
	11.1.	Diploma works		18	
	11.2.	Master theses		1	
	11.3.	Doctoral dissertations		6	
12.	For mentors of PhD studies, selected results in the last four/five years				
	12.1.	Evidence of printed scientific papers in international scientific journals in the field (maximum 6) in the last five years			
		No	Author	Title	Publisher / Year

		1.	Angjelovski B., Radeski M., Djadjovski I., Mitrov D., Bojkovski J., Adamov N., Dovenski T.	Prevalence and clinical signs of Postpartum Dysgalactia Syndrome at the first day after farrowing in farmed sows in the Republic of Macedonia	Mac Vet Rev 2019; 42 (1): 79-86
		2.	Ilievska Ksenija, Branko Atanasov, Toni Dovenski, Ozren Smolac, Boris Stojanov, Plamen Trojachanec,	Acute phase proteins – as indicators of claw diseases in dairy cattle,	Mac Vet Rev 2019; 42 (1): 95-100
		3.	Nikolovski Martin, Monika Dovenska, Ksenija Ilievska, Nikola Adamov, Branko Atanasov, Miroslav Radeski, Daniela Kirovski, Vladimir Petkov, Toni Dovenski	Homologous seminal plasma and glutathione promote pre- capacitation motility and structural stability of cryopreserved ram spermatozoa	Mac Vet Rev 2019; 42 (2): 169 - 179
		4.	Stojanov Boris, Branko Atanasov, Juraj Grizelj, Silvio Vince, Martin Nikolovski, Miroslav Kjosevski, Toni Dovenski, Nikola Adamov, Ksenija Ilievska, Marko Samardzija	Induction and formation of accessory corpus luteum after artificial insemination (AI) might increase pregnancy rate per AI in heat stressed dairy cows	Mac Vet 2 020 43(1):37-43
		5.	Atanasov B., Adamov N., Celeska I., Ilievska K., Angjelovski B., Trbogazov Z., Davkov F., Dovenski T., Opsomer G., Stevenson J	Modification of the standard 7-day OVSYNCH protocol to increase the luteolytic and synchronization risks in dairy cows	Mac Vet Rev 2020; 43 (2): 161-167
		6.	Dovenski T., Trojacanec P., Atanasov B., Nikolovski M., Petkov V., Popovska-Percinic F., Dovenska M., Grizelj J., Vince S.	Novelties in ovine assisted reproductive technologies – a review,	Mac Vet Rev 2022, 45 (2) 109-125
	12.2.	Evidence of at least two printed scientific papers in scientific journals with impact factor i field in the last five years			
		No	Author	Title	Publisher / Year

		1.	Ciani E., Mastrangelo S., Da Silva A., Marroni F., Ferenčaković M., Ajmone-Marsan P., Baird H., Mario Barbato, Licia Colli, Chiara Delvento, Dovenski T., Gorjanc G.,. Hall J. G S., Hoda A., Li Meng-Hua, Marković B., McEwan J., Moradi H. M., Ruiz-Larrañaga O., Ružić-Muslić D., Šalamon D., Simčič M., Stepanek O., Econogene Consortium, Sheephapmap Consortium, Curik I., Cubric-Curik V. and Lenstra A. J.,	On the origin of European sheep as revealed by the diversity of the Balkan breeds and by optimizing population-genetic analysis tools	Genet Sel Evol 52:25 (2020) (IF 4.297)
		2.	Atanasov B, Dovenski T, Celeska I, Stevenson JS.	Luteolysis, progesterone, and pregnancy per insemination after modifying the standard 7-day Ovsynch program in Holstein-Friesian and Holstein cows.	J Dairy Sci. 2021 Jun; 104(6):7272-7282 (IF 4.225)
		3.	Stojanov B., Atanasov B., Grizelj J., Vince S., Ilievska K., Nikolovski M., Dovenski T. Samardžija M.	External progesterone supplementation during the Ovsynch protocol reduces the incomplete luteolysis in dairy cows under heat stress	Macedonian Veterinary Review, Vol.47 (Issue 1), pp. 45-50 (IF 0.4)
		4.	Nikolovski M., Dovenska M; Petkov V., Popovska Percinic F., Dovenski T.	Glutathione and seminal plasma supplemented prior cryopreservation increase viable ram spermatozoa population with nonhyperactivated motility	Reproduction in Domestic Animals Vol. 54, 3 September 2019, 76-77
	12.3.	Evidence of at least three participations on international meetings in last five years				
		No.	Author	Title	International meeting/ conference	Year

		1.	Dovenski Toni	Applicability of Assisted Reproductive Techniques (ART) in ruminants: (1. part Bovine MOET programe) & (2. part Small Ruminants Gamete Preservation	IVSA and Turkish Society of Veterinary Gynaecology Congres, Kayseri- TURKEY	2020
		2.	Nikolovski M., Dovenska M; Petkov V., Popovska Percinic F., Dovenski T.	Glutathione and seminal plasma supplemented prior cryopreservation increase viable ram spermatozoa population with nonhyperactivated motility	ESDAR Reproduction in Domestic Animals Vol. 54 Supplement 3 , 76-77	2019
		3.	Nikolovski M.; Dovenska M.; Bozhinovski D.; Jovanov S.; Atanasov B.; Petkov V.; Dovenski T.,	Separate and combined supplementation of tris and seminal plasma during equilibration of ram ejaculates yields different sperm viabiilty and motility patterns	Reproduction in Domestic Animals Volume 58, Issue S2, Special Issue:1st European Symposium on Animal Reproduction, 21st – 23rd Sept. 2023, Nantes, France, p.250	2023

No: 3	**Data for teaching staff and mentors of 3rd cycle of studies (PhD)**			
1.	Name and surname	**Vlatko Ilieski**		
2..	Date of birth	24.01.1966		
3.	Level of education	VIII		
4.	Title of teaching-scientific, teaching-professional, teaching, scientific and associate titles	DipECAWBM, PhD, Msc, DVM, PhD, Doctor of Veterinary sciences Full professor		
5.	Data on completed education, i.e. acquired academic and scientific degrees	Education	Year	Institution
		Higher education	1991	Veterinary Faculty Zagreb, University of Zagreb, Croatia
		Master studies	1997	Medicine Faculty University Ss Cyril and Methodius Skopje N. Macedonia
		Doctoral studies	1999	Faculty for veterinary medicine Skopje University Ss Cyril and Methodius Skopje N. Macedonia
6.	Area, field and area of	Area	Field	Discipline

	the scientific degree master's studies	4	4.03	4.03.00.01
7.	Field, field and area of the scientific degree Doctor of Science with the corresponding code number of the scientific field of the doctorate thesis according to the International Frascati Classification of 2015 and relevant domestic acts that determine the scientific research fields of the third level - areas	Area	Field	Discipline
		4	4.03	4.03.00.01
8.	If he/she is employed, name of the institution where he/she works, title and scientific field in which he/she was elected, according the appropriate code number of the International Frascati Classification from 2015 and relevant domestic acts that determines the scientific research fields of the third level - fields	Institution	Title in which he was elected	Scientific field
		Faculty of veterinary medicine, Ss. Cyril and Methodius University in Skopje	Full professor	4.03 Veterinary sciences

9.	List of courses that the teacher leads separately for the first, second and third cycle of studies			
	9.1.	List of courses taught by the teacher in the first and second cycle of studies		
		No	Course program title	Study program / Institution
		1.	Animal Anatomy 1	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		2.	Animal Anatomy 2	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		3.	Animal Behavior and Welfare	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		4.	Animal Clinical Anatomy	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		5.	Laboratory and Exotic Animal Anatomy and Welfare	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		6.		
	9.2.	List of courses taught by the teacher in the second cycle of studies		
		No	Course program title	Study program / Institution
		1.		

		2.		
	9.3.	List of courses taught by the teacher in the third cycle of studies		
		No	Course program title	Study program / Institution
		1.	Using of animals in scientific porpuses	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje
		2. 3. 4	Comparative morphology of mammals Aplied morphology in mammals Welfare and behavioral medicine	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje
10.	Selected results in the last five years			
	10.1.	Relevant published scientific papers (maximum 5)		

No	Author	Title	Publisher / Year
1.	Tefik Jashari, Sokol Duro, Ozan Gündemir, Tomasz Szara, **Vlatko Ilieski,** Dashmir Mamuti, Om Prakash Choudhary (2021)	Morphology, morphometry and some aspects of clinical anatomy in the skull and mandible of Sharri sheep;	Biologia https://doi.org/10.1007/s11756-021-00955-y Received: 10 May 2021 / Accepted: 28 October 2021 © The Author(s) 2021
2.	Lazo Pendovski,Dimitar Bozhinovski, Ksenija Ilievska,Plamen Trojachanec, Vlatko Ilieski	Computer tomography (CT) scans as a diagnostic tool for interpretation of S10 plastinated slides from dog cadaver	Mac Vet Rev 2022; 45 (2): 127 - 135 10.2478/macvetrev-2022-0020
3.	Miroslav KjosevskiJ, Martin Nikolovski, Ksenija Ilievska, Lazo Pendovski, **Vlatko Ilieski** (2021	The three pillars of applied farm animal welfare	Veterinarski Glasnik 2021, 00, 1-13 UDC: https://doi.org/10.2298/VETGL210629014K
4.	A. Prunier1, X. Averos, I. Dimitrov, S. A. Edwards, E. Hillmann, M. Holinger, **V. Ilieski** R. Leming, C. Tallet, S. P. Turner, M. Zupan and I. Camerlink (2019)	Review: Early life predisposing factors for biting in pigs. Animal, page 1 of 18	The Animal Consortium 2019doi:10.1017/S1751731119001940 (Received 6 March 2019; Accepted 16 July 2019

		5.	Nakov D, Hristov S, Stankovic B, Pol F, Dimitrov I, **Ilieski V,** Mormede P,Hervé J, Terenina E, Lieubeau B,Papanastasiou DK, Bartzanas T,Norton T, Piette D, Tullo E and van Dixhoorn IDE (2019)	Methodologies for Assessing Disease Tolerance in Pigs.	Front. Vet. Sci. 5:329.doi:
	10.2.	Participation in national and international scientific-research projects (maximum 5)			
		No	Role in the project (project manager or participant)	Title	Time duration pf the project The institution from which everything is organized, financed, implemented
		1.	Senior Non-Key Expert (SNKE) on Veterinary Surgeon/ Medicine Profession	**Project Title**: Support to recognition of professional qualificationsTask 1 Harmonize the legislative and regulatory framework on the recognition of professional qualification with that of the EU Acquis and develop secondary legislation for the implementation of the Law on regulated profession	Number: NEAR/PRN/2022/EA-RP/0083 1 024-15 June 2024 We Global SRL weglobal.org

		2.	National consultant on Animal welfare	To carry out duties to support the Livestock Production Specialist and the FAO Country office in North Macedonia. Review and ensure correct terminology of the Farm animal welfare in North Macedonia: analysis of the animal farming sector, governance mechanisms and animal welfare legislative framework organized report	FAO/Regional representative for Europe and Central Asia March-July 2023
		3.			
		4.			
		5.			
	10.3.	Published books in the last five years (maximum 5)			
		No	Author	Title	Publisher / Year
		1.			
		2.			
		3.			
		4.			
		5.			
	10.4.	Published professional papers in the last five years (maximum 5)			
		No	Author	Title	Publisher / Year
		1.			
		2.			
		3.			
		4.			
		5.			
		6.			
11.	Mentoring undergraduate, postgraduate and doctoral students				
	11.1.	Diploma works			
	11.2.	Master theses			
	11.3.	Doctoral dissertations			
12.	For mentors of PhD studies, selected results in the last four/five years				
	12.1.	Evidence of printed scientific papers in international scientific journals in the field (maximum 6) in the last five years			
		No	Author	Title	Publisher / Year
		1.			
		2.			
		3.			
		4.			
		5.			

		6.				
	12.2.	Evidence of at least two printed scientific papers in scientific journals with impact factor in th field in the last five years				
		No	Author	Title	Publisher / Year	
		1.				
		2.				
	12.3.	Evidence of at least three participations on international meetings in last five years				
		No.	Author	Title	International meeting/ conference	Year
		1.				
		2.				

No: 4	**Data for teaching staff and mentors of 3rd cycle of studies (PhD)**			
1.	Name and surname	**Vladimir Petkov**		
2..	Date of birth	11.01.1964		
3.	Level of education	VIII		
4.	Title of teaching-scientific, teaching-professional, teaching, scientific and associate titles	PhD, Doctor of Veterinary sciences Full professor		
5.	Data on completed education, i.e. acquired academic and scientific degrees	Education	Year	Institution
		Higher education	1990	Faculty of Veterinary Medicine, University of Zagreb
		Master studies	1992	Faculty of Veterinary Medicine, University of Zagreb
		Doctoral studies	2000	Faculty of Veterinary Medicine in Skopje, Ss. Cyril and Methodius University in Skopje
6.	Area, field and area of the scientific degree master's studies	Area	Field	Discipline
		4 Agricultural and veterinary sciences	4.03 Veterinary sciences	4.03.00.03 Phisiology
7.	Field, field and area of the	Area	Field	Discipline

<table>
<tr><td></td><td colspan="3">scientific degree Doctor of Science with the corresponding code number of the scientific field of the doctorate thesis according to the International Frascati Classification of 2015 and relevant domestic acts that determine the scientific research fields of the third level - areas</td><td>4
Agricultural and veterinary sciences</td><td>4.03
Veterinary sciences</td><td>4.03.00.03
Physiology</td></tr>
<tr><td rowspan="2">8.</td><td colspan="3" rowspan="2">If he/she is employed, name of the institution where he/she works, title and scientific field in which he/she was elected, according the appropriate code number of the International Frascati Classification from 2015 and relevant domestic acts that determines the scientific research fields of the third level - fields</td><td>Institution</td><td>Title in which he was elected</td><td>Scientific field</td></tr>
<tr><td>Faculty of veterinary medicine, Ss. Cyril and Methodius University in Skopje</td><td>Full professor</td><td>4.03
Veterinary sciences</td></tr>
<tr><td rowspan="20">9.</td><td colspan="5">List of courses that the teacher leads separately for the first, second and third cycle of studies</td></tr>
<tr><td rowspan="8">9.1.</td><td colspan="4">List of courses taught by the teacher in the first cycle of studies</td></tr>
<tr><td>No</td><td colspan="2">Course program title</td><td>Study program / Institution</td></tr>
<tr><td>1.</td><td colspan="2">Animal Physiology 1</td><td>Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje</td></tr>
<tr><td>2.</td><td colspan="2">Animal Physiology 2</td><td>Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje</td></tr>
<tr><td>3.</td><td colspan="2">Exotic Animals Physiology</td><td>Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje</td></tr>
<tr><td>4.</td><td colspan="2">Comparative Physiology</td><td>Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje</td></tr>
<tr><td>5.</td><td colspan="2"></td><td></td></tr>
<tr><td>6.</td><td colspan="2"></td><td></td></tr>
<tr><td rowspan="4">9.2.</td><td colspan="4">List of courses taught by the teacher in the second cycle of studies</td></tr>
<tr><td>No</td><td colspan="2">Course program title</td><td>Study program / Institution</td></tr>
<tr><td>1.</td><td colspan="2"></td><td></td></tr>
<tr><td>2.</td><td colspan="2"></td><td></td></tr>
<tr><td rowspan="3">9.3.</td><td colspan="4">List of courses taught by the teacher in the third cycle of studies</td></tr>
<tr><td>No</td><td colspan="2">Course program title</td><td>Study program / Institution</td></tr>
<tr><td>1.</td><td colspan="2">Selected topics in animal physiology</td><td>Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje</td></tr>
</table>

		2.	Selected topics in fish physiology	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje	
		3.	Selected topics in avian physiology	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje	
10.	Selected results in the last five years				
	10.1.	Relevant published scientific papers (maximum 5)			
		No	Author	Title	Publisher / Year
		1.	Nikolovski, M., Dovenska, M., Bozhinovski, D., Mickov, L., Atanasov, B., Porchu, K., Dzabirski, V., Petkov, V., Dovenski, T.	The effect of extending ram sperm before and after cryopreservation on their viability and velocity	Journal of Agricultural, Food and Environmental Sciences (Faculty of Agricultural Sciences and Food in Skopje) 2022
		2.	Dovenski T., Trojacanec P., Atanasov B., Nikolovski M., Petkov V., Popovska-Percinic F., Dovenska M., Grizelj J., Vince S.	Novelties in ovine assisted reproductive technologies – a review	Macedonian Veterinary Review (FVMS, UKIM) 2022
		3.	Adamov, N., Atanasov, B., Ilievska, K., Nikolovski, M., Dovenska, M., Petkov, V., & Dovenski, T.	Allele and genotype frequencies of the κappa-casein (CSN3) locus in Macedonian Holstein-Friesian cattle	Macedonian Veterinary Review (FVMS, UKIM) 2022
		4.	Nikolovski, M., Dovenska, M., Ilievska, K., Adamov, N., Atanasov, B., Radeski, M., Kirovski, D., Petkov, V., & Dovenski, T.	Homologous seminal plasma and glutathione promote pre-capacitation motility and structural stability of cryopreserved ram spermatozoa.	Macedonian Veterinary Review (FVMS, UKIM) 2019
		5.			
	10.2.	Participation in national and international scientific-research projects (maximum 5)			
		No	Role in the project (project manager or participant)	Title	Time duration of the project The institution from which everything is organized, financed, implemented

		1.	Participant	Validation of 19 microsatellite DNA markers for individual identification and testing of paternity and maternity in dogs (*Canis lupus familiaris*)	12 months Ss. Cyril and Methodius University in Skopje, Faculty of Veterinary Medicine – Skopje
		2.	Participant	Cryoconservation of dog sperm, endoscopic examination and transcervical endoscopic insemination	12 months Ss. Cyril and Methodius University in Skopje
		3.	Participant	Determination of prevalence and incidence of abortion caused by *Neospora caninum* in dairy farms in R. N. Macedonia	24 months Ss. Cyril and Methodius University in Skopje, Faculty of Veterinary Medicine – Skopje
		4.			
		5.			
	10.3.	Published books in the last five years (maximum 5)			
		No	Author	Title	Publisher / Year
		1.			
		2.			
		3.			
		4.			
		5.			
	10.4.	Published professional papers in the last five years (maximum 5)			
		No	Author	Title	Publisher / Year
		1.			
		2.			
		3.			
		4.			
		5.			
		6.			
11.	Mentoring undergraduate, postgraduate and doctoral students				
	11.1.	Diploma works			
	11.2.	Master theses		/	
	11.3.	Doctoral dissertations		/	
12.	For mentors of PhD studies, selected results in the last four/five years				
	12.1.	Evidence of printed scientific papers in international scientific journals in the field (maximum 6) in the last five years			
		No	Author	Title	Publisher / Year

		1.	Nikolovski, M., Dovenska, M., Bozhinovski, D., Mickov, L., Atanasov, B., Porchu, K., Dzabirski, V., Petkov, V., Dovenski, T.	The effect of extending ram sperm before and after cryopreservation on their viability and velocity		Journal of Agricultural, Food and Environmental Sciences (Faculty of Agricultural Sciences and Food in Skopje) 2022
		2.	Dovenski T., Trojacanec P., Atanasov B., Nikolovski M., Petkov V., Popovska-Percinic F., Dovenska M., Grizelj J., Vince S.	Novelties in ovine assisted reproductive technologies – a review		Macedonian Veterinary Review (FVMS, UKIM) 2022
		3.	Adamov, N., Atanasov, B., Ilievska, K., Nikolovski, M., Dovenska, M., Petkov, V., & Dovenski, T.	Allele and genotype frequencies of the κappa-casein (CSN3) locus in Macedonian Holstein-Friesian cattle		Macedonian Veterinary Review (FVMS, UKIM) 2022
		4.	Nikolovski, M., Dovenska, M., Ilievska, K., Adamov, N., Atanasov, B., Radeski, M., Kirovski, D., Petkov, V., & Dovenski, T.	Homologous seminal plasma and glutathione promote pre-capacitation motility and structural stability of cryopreserved ram spermatozoa.		Macedonian Veterinary Review (FVMS, UKIM) 2019
		5.				
		6.				
	12.2.	Evidence of at least two printed scientific papers in scientific journals with impact fa field in the last five years				
		No	Author	Title		Publisher / Year
		1.				
		2.				
	12.3.	Evidence of at least three participations on international meetings in last five years				
		No.	Author	Title	International meeting/ conference	Year
		1.	Nikolovski, M., Dovenska, M., Bozhinovski, D., Mickov, Lj., Atanasov, B., Dzabirski, V., Porchu, K., Petkov, V., Dovenski, T.	The effect of extending ram sperm before and after cryopreservation on their viability and velocity	IV International Symposium for Agriculture and Food	2022

		2.	Nikolovski, M., Dovenska, M., Bozhinovski, D., Mickov, Lj., Atanasov, B., Adamov, N., Dovenski, T., & Petkov, V.	The effect of homologous seminal plasma and reduced glutathione on thawed ram sperm viability and motility	XIII Scientific symposium "Reproduction of domestic animals"	2022
		3.	Nikolovski, M., Dovenska, M., Petkov, V., Popovska-Percinic, F., & Dovenski, T.	Glutathione and seminal plasma supplemented prior cryopreservation increase viable ram spermatozoa population with non-hyperactivated motility	23-rd annual ESDAR conference 2019, St. Petersburg, Russia	2019

No: 5	**Data for teaching staff and mentors of 3rd cycle of studies (PhD)**			
1.	Name and surname	**Plamen Trojachanec**		
2..	Date of birth	06.09.1964		
3.	Level of education	VIII		
4.	Title of teaching-scientific, teaching-professional, teaching, scientific and associate titles	PhD, Doctor of Veterinary sciences Full professor		
5.	Data on completed education, i.e. acquired academic and scientific degrees	Education	Year	Institution
		Higher education	1990	Faculty of veterinary medicine, University of Zagreb
		Master studies	1993	Faculty of veterinary medicine, University of Zagreb
		Doctoral studies	2000	Faculty of Veterinary Medicine-Skopje, Ss. Cyril and Methodius University in Skopje,
6.	Area, field and area of the scientific degree master's studies	Area	Field	Discipline
		4 Agricultural and veterinary sciences	4.03 Veterinary sciences	4.03.00.17 Surgery, orthopedics and opthalmology
7.	Field, field and area of the	Area	Field	Discipline

	scientific degree Doctor of Science with the corresponding code number of the scientific field of the doctorate thesis according to the International Frascati Classification of 2015 and relevant domestic acts that determine the scientific research fields of the third level - areas	4 Agricultural and veterinary sciences	4.03 Veterinary sciences	4.03.00.17 Surgery, orthopedics and opthalmology
8.	If he/she is employed, name of the institution where he/she works, title and scientific field in which he/she was elected, according the appropriate code number of the International Frascati Classification from 2015 and relevant domestic acts that determines the scientific research fields of the third level - fields	Institution	Title in which he was elected	Scientific field
		Faculty of veterinary medicine-Skopje, Ss. Cyril and Methodius University in Skopje	Full professor	4.03 Veterinary sciences

9. List of courses that the teacher leads separately for the first, second and third cycle of studies

9.1. List of courses taught by the teacher in the first cycle of studies

No	Course program title	Study program / Institution
1.	Anesthesia and Intensive Care	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
2.	General Surgery	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
3.	Soft Tissue Surgery	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
4.	Orthopedics and Rehabilitation	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
5.	Ophthalmology	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
6.	Communication in Veterinary Practice	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
7.	Selected Techniques for Surgical Fracture Reduction	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje

		7.	Surgical Skin Reconstruction Techniques	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
	9.2.	List of courses taught by the teacher in the second cycle of studies		
		No	Course program title	Study program / Institution
		1.		
		2.		
	9.3.	List of courses taught by the teacher in the third cycle of studies		
		No	Course program title	Study program / Institution
		1.	Surgical techniques in companion animals	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje
		2.	Surgical techniques in farm animals	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje
		3.	Special orthopedic diseases	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje

10.	Selected results in the last five years				
	10.1.	Relevant published scientific papers (maximum 5)			
		No	Author	Title	Publisher / Year
		1.	Ksenija Ilievska, Branko Atanasov, Toni Dovenski, Ozren Smolac, Boris Stojanov, Plam enTrojachanec	Acute phase proteins – as indicators of claw diseases in dairy cattle	Macedonian Veterinary Review / 2019
		2.	Dovenski T., Trojacanec P., Atanasov B., Nikolovski, M., Petkov V., Popovska- Percinic F., Dovenska M., Grizelj J., Vince S.	Novelties in ovine assisted reproductive technologies – a review	Macedonian Veterinary Review /
		3.	Dovenski T., Trojacanec P., Atanasov B., Nikolovski M., Petkov V., Popovska-Percinic F., Dovenska M., Grizelj J., Vince S.	Novelties in ovine assisted reproductive technologies – a review	Macedonian Veterinary Review (FVMS, UKIM) 2022
		4.			
		5.			
	10.2.	Participation in national and international scientific-research projects (maximum 5)			

		No	Role in the project (project manager or participant)	Title	Time duration of the project The institution from which everything is organized, financed, implemented
		1.	Participant	Validation of 19 microsatellite DNA markers for individual identification and testing of paternity and maternity in dogs (*Canis lupus familiaris*)	12 months Ss. Cyril and Methodius University in Skopje, Faculty of Veterinary Medicine – Skopje
		2.	Participant	Cryoconservation of dog sperm, endoscopic examination and transcervical endoscopic insemination	12 months Ss. Cyril and Methodius University in Skopje
		3.			
		4.			
		5.			
	10.3.	Published books in the last five years (maximum 5)			
		No	Author	Title	Publisher / Year
		1.			
		2.			
		3.			
		4.			
		5.			
	10.4.	Published professional papers in the last five years (maximum 5)			
		No	Author	Title	Publisher / Year
		1.			
		2.			
		3.			
		4.			
		5.			
		6.			
11.	Mentoring undergraduate, postgraduate and doctoral students				
	11.1.	Diploma works			
	11.2.	Master theses			
	11.3.	Doctoral dissertations			
12.	For mentors of PhD studies, selected results in the last four/five years				
	12.1.	Evidence of printed scientific papers in international scientific journals in the field (maximum 6) in the last five years			
		No	Author	Title	Publisher / Year
		1.	Ilievska Ksenija, Branko Atanasov, ToniDovenski, Ozren Smolac, Boris Stojanov, Plamen Trojachanec,	Acute phase proteins – as indicators of claw diseases in dairy cattle,	Mac Vet Rev 2019; 42 (1): 95-100

		2.	Dovenski T., Trojacanec P., Atanasov B., Nikolovski M., Petkov V., Popovska-Percinic F., Dovenska M., Grizelj J., Vince S.	Novelties in ovine assisted reproductive technologies – a review	Macedonian Veterinary Review (FVMS, UKIM) 2022
		3.			
		4.			
		5.			
		6.			
	12.2.	Evidence of at least two printed scientific papers in scientific journals with impact field in the last five years			
		No	Author	Title	Publisher / Year
		1.			
		2.			
	12.3.	Evidence of at least three participations on international meetings in last five years			
		No.	Author	Title	International meeting/ conference / Year
		1.			
		2.			
		3.			

No: 6	**Data for teaching staff and mentors of 3rd cycle of studies (PhD)**			
1.	Name and surname	**Zehra Hajrulai-Musliu**		
2..	Date of birth	10.08.1967		
3.	Level of education	PhD, Doctor of Veterinary sciences		
4.	Title of teaching-scientific, teaching-professional, teaching, scientific and associate titles	Full professor		
5.	Data on completed education, i.e. acquired academic and scientific degrees	Education	Year	Institution
		Higher education	1988	Faculty of chemistry, University of Pristina, Kosovo
		Master studies	1992	Faculty of natural sciences, university of Zagreb
		Doctoral studies	2001	Faculty of veterinary medicine-Skopje, Ss. Cyril and Methodius University in Skopje
6.	Area, field, and area of	Area	Field	Discipline

	the scientific degree master's studies	1	1.04	1.04.00.01
7.	Field, field, and area of the scientific degree Doctor of Science with the corresponding code number of the scientific field of the doctorate thesis according to the International Frascati Classification of 2015 and relevant domestic acts that determine the scientific research fields of the third-level - areas	Area	Field	Discipline
		1	1.04 Chemical sciences	1.04.00.01 Chemistry
8.	If he/she is employed, the name of the institution where he/she works, title, and scientific field in which he/she was elected, according to the appropriate code number of the International Frascati Classification from 2015 and relevant domestic acts that determines the scientific research fields of the third level - fields	Institution	Title in which he was elected	Scientific field
		Faculty of veterinary medicine-Skopje, Ss. Cyril and Methodius University in Skopje	Full professor	1.04.00.01 Chemistry

9. List of courses that the teacher leads separately for the first, second, and third cycle of studies

9.1. List of courses taught by the teacher in the first cycle of studies

No	Course program title	Study program / Institution
1.	Chemistry	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
2.	Analytical Chemistry of Food	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
3.	Biochemical Ecotoxicology	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
4.	Chemistry of Natural Compounds	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
5.	Chemistry of Food Quality	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
6.	Residues and Contaminants in Food	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje

9.2. List of courses taught by the teacher in the second cycle of studies

No	Course program title	Study program / Institution
1.	Food chemistry and analytics	Food safety and quality, FVMS

		2.	Instrumental methods for food analysis	Food safety and quality, FVMS	
		3.	Residues and contaminants in food	Food safety and quality, FVMS	
	9.3.	List of courses taught by the teacher in the third cycle of studies			
		No	Course program title	Study program / Institution	
		1.	Food chemistry and biochemistry	Food Safety, third cycle of studies, Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje	
		2.	Veterinary residues drugs and contaminants in the food	Food Safety, third cycle of studies, Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje	
		3.	Instrumental methods for food analyses	Food Safety, third cycle of studies, Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje	
		4.	Food chemistry and analytics	Food Safety, third cycle of studies, Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje	
		5.	Residues and contaminants such as chemical safety risks of the food	Food Safety, third cycle of studies, Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje	
		6.	Analytical methods for monitoring of food safety	Food Safety, third cycle of studies, Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje	
10.	Selected results in the last five years				
	10.1.	Relevant published scientific papers (maximum 5)			
		No	Author	Title	Publisher / Year
		1.			
		2.			
		3.			
		4.			
		5.			
	10.2.	Participation in national and international scientific research projects (maximum 5)			
		No	Role in the project (project manager or participant)	Title	Time duration of the project The institution from which everything is organized, financed, implemented
		1.	Project manager from FVM	*IAEA Coordinated Research Project D52041: "(Development, Validation and application of isotope Based Chromatographic/Spectrometric techniques for Mixed Contaminants Including anabolic steroids in Foods and Biological matrices)", IAEA Research Contract No: 22184.*	IAEA /17.03.2017-31.05.2023
		2.	Participant	Digital education in veterinary studies (DEVET)	ERASMUS+ 01.03.2020-31.05. 2021

		3.	Project manager from FVM	*IAEA Coordinated Research Project D52043: „(Depletion of veterinary pharmaceuticals and radiometric analysis of their residues in animal matrices“). (IAEA Research Contract No.: 24676).*	IAEA /03.03.2020-01.06. 2025
		4.	Participant	*Reviving of Farriery: Disappearing Profession Erasmus Plus Programme / KA2 – Cooperation and Innovation for Good Practices Strategic Partnerships for Adult Education*	ERASMUS+/ 01.09.2018-31.08. 2020
		5.	Project manager from FVM	*, Development and validation of multiresidual and multiclass analytical methods for the determination of residues of veterinary drugs and contaminants in animal food origin using isotopic marked internal standards and application of the LC-Q/TOF technique."*	Ministry of education and science/2021 Agreement no. 15-15590/47 from 22.11.2021
	10.3.	Published books in the last five years (maximum 5)			
		No	Author	Title	Publisher / Year
		1.	Pendovski, L., Starič, J., Biricik, H. S., Kjosevski, M., Ulchar, I., Musliu, Z. H., ... & Popovska-Percinic, F.	*Animal Management in Disasters: Basic Principles.*	Ss. Cyril and Methodium University in Skopje, Faculty of Veterinary Medicine. 2023
		2.	Hajrulai-Musliu , Zehra, Risto Uzunov, Stefan Jovanov, Dean Jankuloski, Velimir Stojkovski, Lazo Pendovski, and James Jacob Sasanya.	*Development of a New LC–MS/MS Method for Multiple Residues/Contaminants in Bovine Meat*	Research Aspects in Biological Science Vol. 5, 5 July 2022 , Page 52-82
		3.			
		4.			
		5.			
	10.4.	Published professional papers in the last five years (maximum 5)			
		No	Author	Title	Publisher / Year

		1.	Hajrulai-Musliu, Zehra, Risto Uzunov, Maksud Krluku, Stefan Jovanov, Velimir Stojkovski, Mila Arapcheska, Dea Musliu, and James Jacob Sasanya.	*Determination of Multi-Class Antimicrobial Residues and Antimicrobial Resistance in Cow Milk and Feces Samples during Withdrawal Period*	Animals, 2023
		2.	Sulejmani, E., Ahmeti, B. And Musliu, Z.H.	*Profile of fatty acid and pesticide residues of cream and yoghurt butter during storage*	Mljekarstvo, 73 (1), 12-21. 2023.
		3.	Kerluku, M.; Ratkova Manovska, M.; Prodanov, M.; Stojanovska-Dimzoska, B.; Hajrulai-Musliu, Z.; Jankuloski, D.; Blagoevska, K.	Phenotypic and Genotypic Analysis of Antimicrobial Resistance of Commensal Escherichia coli from Dairy Cows' Feces	Processes 2023
		4.	Asma, S.T.; Acaroz, U.; Imre, K.; Morar, A.; Shah, S.R.A.; Hussain, S.Z.; Arslan-Acaroz, D.; Demirbas, H.; Hajrulai-Musliu, Z.; Istanbullugil, F.R.; et al.	*Natural Products/Bioactive Compounds as a Source of Anticancer Drugs.*	Cancers 2022,
		5.	Hajrulai-Musliu, Z., Uzunov, R., Jovanov, S. et al.	*A new LC–MS/MS method for multiple residues/contaminants in bovine meat.*	BMC Chemistry 15, 62 (2021).
		6.			
11.	Mentoring undergraduate, postgraduate and doctoral students				
	11.1.	Diploma works		5	
	11.2.	Master theses		/	
	11.3.	Doctoral dissertations		7	
12.	For mentors of PhD studies, selected results in the last four/five years				
	12.1.	Evidence of printed scientific papers in international scientific journals in the field (maximum 6) in the last five years			
		No	Author	Title	Publisher / Year

		1.	Biljana Stojanovska-Dimzoska*, Zehra Hajrulai-Musliu, Risto Uzunov, Aleksandra Angeleska,, Katerina Blagoevska, Radmila Crceva Nikolovska, Gordana Ilievska, Elizabeta Dimitrieska-Stojković	STUDY ON THE EFFECTIVENESS OF A MULTI-TOXIN IMMUNOAFFINITY CLEAN-UP FOR RELIABLE COST-EFFECTIVE HPLC-FLD ANALYSIS OF MYCOTOXINS IN CORN-BASED FOODS	Macedonian Journal of Chemistry and Chemical Engineering, Vol. 41, No. 1, pp. 77–88 (2022)
		2.	Hajrulai-Musliu, Zehra, Uzunov, Risto, Jovanov, Stefan, Kerluku, Maksud, Jankuloski, Dean, Stojkovski, Velimir, Pendovski, Lazo and Sasanya, James Jacob.	*Determination of veterinary drug residues, mycotoxins, and pesticide residues in bovine milk by liquid chromatography electrospray ionisation –tandem mass spectrometry*	Journal of Veterinary Research, vol.66, no.2, 2022
		3.	Esad Behrami , Kledi Xhaxhiu , Bedri Dragusha*, Arianit Reka , Zehra Hajrulai-Musliu , Avni Berisha , Adelaida Andoni , Xhuljeta Hamiti , Spiro Drushku	*STUDY OF ABSORPTION AND DESORPTION OF BENALAXYL FROM NATURAL AND ACTIVATED BRARI AND DARDHA CLAY*	International Journal of Ecosystems and Ecology Science 2021
		4.	*Hajrulai-Musliu, Z., Uzunov, R., Jovanov, S. et al.*	*Multi-class/residue method for determination of veterinary drug residues, mycotoxins and pesticide in urine using LC-MS/MS technique.*	BMC Vet Res 19, 156 (2023).

		5.	Biljana Stojanovska Dimzoska, Zehra Hajrulai Musliu, Risto Uzunov, Aleksandra Angeleska, Katerina Blagoevska, Radmila Crceva Nikolovska, Gordana Ilievska, Elizabeta Dimitrieska Stojkovic	*Study on the effectiveness of a multi-toxin immunoaffinity clean-up for reliable cost-effective HPLC-FLD analysis of mycotoxins in corn-based foods*	Macedonian Journal of Chemistry and Chemical Engineering Vol. 41, No. 1, pp. 77–88 (2022)
		6.	Esad Behrami , Isak Berbatovci*, Kledi Xhaxhiu , Nensi Isak , Adelaida Andoni, Arianit Reka , Xhuljeta Hamiti , Zehra Hajrulai Musliu , Risto Uzunov	*Cleaning and Management of Water Contaminated with Pesticides through the Process of Adsorption in the Natural Clay of Brari*	Ecological Engineering & Environmental Technology 2024, 25(2), 281–291
	12.2.	Evidence of at least two printed scientific papers in scientific journals with impact fac field in the last five years			
		No	Author	Title	Publisher / Year
		1.	Lajqi Berisha, N.; Poceva Panovska, A.; Hajrulai-Musliu, Z.	Antibiotic Resistance and Aquatic Systems: Importance in Public Health	Water 2024, 16, 2362
		2.	Arben Haziri Arieta Camaj Ibrahimi, Tahir Arbneshi, Karsten Meyer, Bajram Berisha, Zehra Hajrulai-Musliu	Comparison of ELISA with UHPLC-ESI-MS/MS method for the determination of Aflatoxin M1 in milk	International Journal of Ecosystems and Ecology Science 2021/6
	12.3.	Evidence of at least three participations on international meetings in last five years			
		No.	Author	Title	International meeting/ conference	Year

		1.	Dimitrieska Stojkovikj, Elizabeta, Aleksandra Angeleska, Dushica Koceva, Biljana Stojanovska Dimzoska, Goran Stojovikj, Gordana Ilievska, Risto Uzunov and Zehra Hajrulai-Musliu	*VALIDATION OF UHPLC-MS/MS METHOD AFTER MODIFIED QUECHERS SAMPLE PREPARATION FOR MONITORING OF PESTICIDE RESIDUES IN BOVINE MILK ACCORDING TO EC/2018/555*	9th International Scientific Meeting "DAYS OF VETERINARY MEDICINE – 2022	2022
		2.	Biljana Stojanovska-Dimzoska, Elizabeta Dimitrieska Stojkovikj, Zehra Hajrulai-Musliu,Risto Uzunov, Katerina Blagoevska, Aleksandra Angelevska	*VALIDATION PROTOCOL FOR DETERMINATION OF FUMONISINS IN CORN*	9th International Scientific Meeting "DAYS OF VETERINARY MEDICINE – 2022	2022

No:7	**Data for teaching staff and mentors of 3rd cycle of studies (PhD)**			
1.	Name and surname	**Romel Velev**		
2..	Date of birth	19.0.1967		
3.	Level of education	VIII		
4.	Title of teaching-scientific, teaching-professional, teaching, scientific and associate titles	PhD, Doctor of Veterinary sciences Full professor		
5.	Data on completed education, i.e. acquired academic and scientific degrees	Education	Year	Institution
		Higher education	1993	Faculty of veterinary medicine, University of Zagreb
		Master studies	2000	

		Doctoral studies	2003	Faculty of veterinary medicine-Skopje, Ss. Cyril and Methodius University in Skopje
6.	Area, field, and area of the scientific degree master's studies	Area	Field	Discipline
		4 Agricultural and veterinary sciences	4.03 Veterinary sciences	4.03.00.13 Pharmacology and toxicology
7.	Field, field, and area of the scientific degree Doctor of Science with the corresponding code number of the scientific field of the doctorate thesis according to the International Frascati Classification of 2015 and relevant domestic acts that determine the scientific research fields of the third-level - areas	Area	Field	Discipline
		4 Agricultural and veterinary sciences	4.03 Veterinary sciences	4.03.00.13 Pharmacology and toxicology
8.	If he/she is employed, the name of the institution where he/she works, title, and scientific field in which he/she was elected, according to the appropriate code number of the International Frascati Classification from 2015 and relevant domestic acts that determines the scientific research fields of the third level - fields	Institution	Title in which he was elected	Scientific field
		Faculty of veterinary medicine-Skopje, Ss. Cyril and Methodius University in Skopje	Full professor	4.03 SoVeterinary sciences

9. List of courses that the teacher leads separately for the first, second, and third cycle of studies

9.1. List of courses taught by the teacher in the first cycle of studies

No	Course program title	Study program / Institution
1.	General Pharmacology	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
2.	Special Pharmacology	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
3.	Veterinary Toxicology	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
4.	Nutritious, Medicinal and Poisonous plants	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
5.	Rational Application of Antimicrobial Drugs	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje

		6.	Clinical Pharmacology	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje	
		7,	Poisonous Plant Toxicology	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje	
	9.2.	List of courses taught by the teacher in the second cycle of studies			
		No	Course program title	Study program / Institution	
		1.			
		2.			
		3.			
	9.3.	List of courses taught by the teacher in the third cycle of studies			
		No	Course program title	Study program / Institution	
		1.	Selected topics from general pharmacology	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje	
		2.	Physiological basis of veterinary clinical pharmacology	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje	
		3.	Fundamentals of veterinary toxicology	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje	
		4.	Pharmacological methods on experimental animals, pharmacologicalchemical and methods of clinical examinations of drugs	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje	
		5.			
		6.			
10.	Selected results in the last five years				
	10.1.	Relevant published scientific papers (maximum 5)			
		No	Author	Title	Publisher / Year
		1.	Mihajlović J., Dimitrieska-Stojković E., Velev R., Stojković G.	Quality Control of Potentiated Sulfonamide Commercial Veterinary Formulations by UV-Spectrophotometry.	Book of Proceedings of 3th International Scientific Meeting “Days of Veterinary Medicine 2012”, 02 - 04 September 2012, Ohrid, R. of Macedonia. (pp.159-164)
		2.	Velev R., Krleska-Veleva N.	Practical Use of Registered Veterinary Medicinal Products in Macedonia in Identifaying the Risk of Developing of Antimicrobial Resistance.	Mac.Vet. Rew. 2013; 36 (1) pp. 5-12.Original Scientific Articla

		3.	Ćupić V., Turubatović Antonijević B., Velev Čelebićanin S., Ćupić D. L., R.,	Rational Use of Drugs in Veterinary Medicine and Food Safety.	
		4.	Velev R. T.,Tankoski Tankoska M.	Fatal Snake bite in a Brown Bear(Ursus arctos L.) Case report.	
		5.	G. Stojković, E. Dimitrieska-Stojković, M. Soklevska, R. Velev	Optimization, Validation and Application of UV-VIS Spectrophotometric-Colorimetric Methods for Determination of Trimethoprim in Different Medicinal Products	Mac.Vet. Rew. 2016; 39 (1) pp. 65-76 Original Scientific Article.
	10.2.	Participation in national and international scientific research projects (maximum 5)			
		No	Role in the project (project manager or participant)	Title	Time duration of the project The institution from which everything is organized, financed, implemented
		1.			
		2.			
		3.			
		4.			
		5.			
	10.3.	Published books in the last five years (maximum 5)			
		No	Author	Title	Publisher / Year
		1.			
		2.			
		3.			
		4.			
		5.			
	10.4.	Published professional papers in the last five years (maximum 5)			
		No	Author	Title	Publisher / Year
		1.	Velev R., Krleska-Veleva N., Ćupić V., Ćupić-MiladinovićD.	Legal Status Regarding Distribution/Dispensing and Administration of Veterinary Medicines in Republic of Macedonia.	*J. vet. Pharmacol. Therap.*,Vol. 38 (Suppl. 1) (july 2015)
		2.	Ćupić V., Jović S., Ristić G., Vakanjac S., Velev R., Ćupić-Miladinović D.	Effect of Combined Application of Prostaglandins and Oxytocin on the Duration of Parturition and Number of Newborn Piglets of Sows.	*J. vet. Pharmacol. Therap.*, Vol. 38 (Suppl. 1) (july 2015)
		3.			
		4.			

		5.			
		6.			
11.	Mentoring undergraduate, postgraduate and doctoral students				
	11.1.	Diploma works			
	11.2.	Master theses			
	11.3.	Doctoral dissertations			
12.	For mentors of PhD studies, selected results in the last four/five years				
	12.1.	Evidence of printed scientific papers in international scientific journals in the field (maximum 6) in the last five years			
	12.2.	Evidence of at least two printed scientific papers in scientific journals with impact facto field in the last five years			
		No	Author	Title	Publisher / Year
	12.3.	Evidence of at least three participations on international meetings in last five years			
		No.	Author	Title	International meeting/ conference	Year

No: 8	**Data for teaching staff and mentors of 3rd cycle of studies (PhD)**			
1.	Name and surname	**Dine Mitrov**		
2..	Date of birth	20.02.1966		
3.	Level of education	VIII		
4.	Title of teaching-scientific, teaching-professional, teaching, scientific and associate titles	PhD, Doctor of Veterinary sciences Full professor		
5.	Data on completed education, i.e. acquired academic and scientific degrees	Education	Year	Institution
		Higher education	1991	Faculty of veterinary medicine, University of Belgrade
		Master studies	1997	Faculty of veterinary medicine, University of Belgrade
		Doctoral studies	2003	Faculty of veterinary medicine-Skopje, Ss. Cyril and Methodius University in Skopje
6.	Area, field, and area of the	Area	Field	Discipline

	scientific degree master's studies	4 Agricultural and veterinary sciences	4.03 Veterinary sciences	4.03.00.18 Diagnostic imaging with physical therapy
7.	Field, field, and area of the scientific degree Doctor of Science with the corresponding code number of the scientific field of the doctorate thesis according to the International Frascati Classification of 2015 and relevant domestic acts that determine the scientific research fields of the third-level - areas	Area	Field	Discipline
		4 Agricultural and veterinary sciences	4.03 Veterinary sciences	4.03.00.18 Diagnostic imaging with physical therapy
8.	If he/she is employed, the name of the institution where he/she works, title, and scientific field in which he/she was elected, according to the appropriate code number of the International Frascati Classification from 2015 and relevant domestic acts that determines the scientific research fields of the third level - fields	Institution	Title in which he was elected	Scientific field
		Faculty of veterinary medicine-Skopje, Ss. Cyril and Methodius University in Skopje	Full professor	4.03 Veterinary sciences

9.	List of courses that the teacher leads separately for the first, second, and third cycle of studies			
	9.1.	List of courses taught by the teacher in the first cycle of studies		
		No	Course program title	Study program / Institution
		1.	Visual Diagnostic Methods and Physical Therapy	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		2.	Clinical and Laboratory Diagnostics in Farm Animals	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		3.	Internal Diseases in Farm Animals 1	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		4.	Internal Diseases in Farm Animals 2	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		5.		
		6.		
	9.2.	List of courses taught by the teacher in the second cycle of studies		
		No	Course program title	Study program / Institution
		1.		
		2.		
		3.		
	9.3.	List of courses taught by the teacher in the third cycle of studies		
		No	Course program title	Study program / Institution

		1.	Herd health and production management in diary farms	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje
		2.	Selected topics from radiology and physical therapy	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje
		3.	Neonatal diseases in ruminants	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje
		4.	Laboratory diagnostic of internal organ diseases in ruminants	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje
		5.	Molecular methods in veterinary diagnostics	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje
		6.	Serological methods in veterinary diagnostics	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje
		7.	Metabolic diseases in ruminants	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje

10. Selected results in the last five years

10.1. Relevant published scientific papers (maximum 5)

No	Author	Title	Publisher / Year
1.	Nikola Hadzi-Petrushev, Dine Mitrov, Vladimir Kostovski, Mitko Mladenov	The impact of vitamin C on the relationship among inflammation, lipid peroxidation, and platelet activation during analgesic nephropathy in rats.	Aug 2017. Journal of basic and clinical physiol.
2.	Nikola Hadzi-Petrushev, Dine Mitrov, Vladimir Kostovski, Mitko Mladenov	Supplementation with Alpha- Tocopherol and Ascorbic Acid to Nonalcoholic Fatty Liver Disease's Statin Therapy in Men.	Advances in Pharmacological Scinces, Volume2018, Article number 4673061.
3.	Aleksandar Janevski, Iskra Cvetkovikj, Sanja Kiprijanovska, Aleksandar Dimovski, Katarina Davalieva, Ljupco Angelovski, Miroslav Kjosevski, Dine Mitrov	Prevalence of subclinical mastitis pathogens in small dairy farms in Republic of North Macedonia.	Mac. Vet. Rev. Vol.43 (1):23-30. (2020).
4.			
5.			

10.2. Participation in national and international scientific research projects (maximum 5)

No	Role in the project (project manager or participant)	Title	Time duration of the project The institution from which everything is organized, financed, implemented

		1.	Проф. д-р Дине Митров	ЕПИДЕМИОЛОШКА СТУДИЈА НА РЕТРОВИРУСНИТЕ ИНФЕКЦИИ КАЈ ПРЕЖИВАРИТЕ ВО СЛОВЕНИЈА И МАКЕДОНИЈА	2011
		2.			
		3.			
		4.			
		5.			
	10.3.	Published books in the last five years (maximum 5)			
		No	Author	Title	Publisher / Year
		1.			
		2.			
		3.			
		4.			
		5.			
	10.4.	Published professional papers in the last five years (maximum 5)			
		No	Author	Title	Publisher / Year
		1.	Aleksandar Janevski, Boris Dimitrievski, Ja	Nativna radiografija kao vazan dijagnostcki alat za utvrdjivanje opstrukcije stranim telom kod macke – Prikaz slucaja.	Zdravlje zivotinja, 2022, Broj 4, ISSN 2738-1889
		2.	Aleksandar Janevski, Iskra Cvetkovikj, Sanja Kiprijanovska, Aleksandar Dimovski, Katarina Davalieva, Ljupco Angelovski, Miroslav Kjosevski, Dine Mitrov	Prevalence of subclinical mastitis pathogens in small dairy farms in Republic of North Macedonia.	Mac. Vet. Rev. Vol.43 (1):23-30. 2020
		3.			
		4.			
		5.			
		6.			
11.	Mentoring undergraduate, postgraduate and doctoral students				
	11.1.	Diploma works		1	
	11.2.	Master theses			
	11.3.	Doctoral dissertations			
12.	For mentors of PhD studies, selected results in the last four/five years				
	12.1.	Evidence of printed scientific papers in international scientific journals in the field (maximum 6) in the last five years			

		1.	Nikola Hadzi-Petrushev, Dine Mitrov, Vladimir Kostovski, Mitko Mladenov	The impact of vitamin C on therelationship among inflammation, lipid peroxidation, and platelet activation during analgesic nephropathy in rats.	Aug 2017. Journal of basic and clinical physiol.
		2.	Nikola Hadzi-Petrushev, Dine Mitrov, Vladimir Kostovski, Mitko Mladenov	Supplementation with Alpha- Tocopherol and Ascorbic Acidto Nonalcoholic Fatty Liver Disease's Statin Therapy in Men	Advances in Pharmacological Scinces, Volume2018, Article number 4673061
		3.	Aleksandar Janevski, Iskra Cvetkovikj, Sanja Kiprijanovska, Aleksandar Dimovski, Katarina Davalieva, Ljupco Angelovski, Miroslav Kjosevski, Dine Mitrov	Prevalence of subclinical mastitis pathogens in smalldairy farms in Republic of North Macedonia.	Mac. Vet. Rev. Vol.43 (1):23-30. 2020
		4.	Aleksandar Janevski, Boris Dimitrievski, Jasminka Serafimovska, Dragan Aleksov, Dine Mitrov	Nativna radiografija kao vazan dijagnostcki alat za utvrdjivanje opstrukcije stranim telom kod macke – Prikaz slucaja.	Zdravlje zivotinja, 2022, Broj 4, ISSN 2738-1889
	12.2.	Evidence of at least two printed scientific papers in scientific journals with impact factor i field in the last five years			
		No	Author	Title	Publisher / Year
		1.	Nikola Hadzi-Petrushev, Dine Mitrov, Vladimir Kostovski, Mitko Mladenov	The impact of vitamin C on the relationship a mong inflammation, lipid peroxidation, and platelet activation during analgesic nephropathy in rats.	Aug 2017. Journal of basic and clinical physiol.
		2.	Nikola Hadzi-Petrushev, Dine Mitrov, Vladimir Kostovski, Mitko Mladenov	Supplementation with Alpha- Tocopherol and Ascorbic Acid to Nonalcoholic Fatty Liver Disease's Statin Therapy in Men.	Advances in Pharmacological Scinces, Volume2018, Article number 4673061.
	12.3.	Evidence of at least three participations on international meetings in last five years			

		No.	Author	Title	International meeting/ conference	Year
		1.	Boris Dimitrievski, Aleksandar Janevski, Marko Mitrovic, DineMitrov	Radiological Diagnosis of an Ectopic Ureter in a Poodle-Case Report	Days of Veterinary Medicine	September 22-25, 2022, Ohrid, R.N. Macedonia
		2.	Zagorka Popova-Hristovska, Kiril Krstevski, Ivan Matevski, Stefanija Markozanova, Dine Mitrov, Igor Djadjovski	Detection and Genetic Characterisation ofPorcine CircovirusType 2 in Macedonian Wild	Days of Veterinary Medicine	September 22-25, 2022, Ohrid, R.N. Macedonia

No: 9	**Data for teaching staff and mentors of 3rd cycle of studies (PhD)**			
1.	Name and surname	**Igor Ulchar**		
2..	Date of birth	23.10.1966		
3.	Level of education	VIII		
4.	Title of teaching-scientific, teaching-professional, teaching, scientific and associate titles	PhD, Doctor of Veterinary sciences Full professor		
5.	Data on completed education, i.e. acquired academic and scientific degrees	Education	Year	Institution
		Higher education	1993	Faculty of Veterinary Medicine – Zagreb, University of Zagreb (Croatia)
		Master studies	2001	Medical Faculty – Skopje, Ss Cyril and Methodius University in Skopje, R Macedonia
		Doctoral studies	2005	Faculty of Veterinary Medicine – Skopje, Ss Cyril and Methodius University in Skopje, R Macedonia
6.	Area, field and area of the	Area	Field	Discipline

	scientific degree master's studies	4 Agricultural and veterinary sciences	4.03 Veterinary sciences	4.03.00.08 Pathophysiology
7.	Field, field and area of the scientific degree Doctor of Science with the corresponding code number of the scientific field of the doctorate thesis according to the International Frascati Classification of 2015 and relevant domestic acts that determine the scientific research fields of the third level - areas	Area	Field	Discipline
		4 Agricultural and veterinary sciences	4.03 Veterinary sciences	4.03.00.08 Pathophysiology
8.	If he/she is employed, name of the institution where he/she works, title and scientific field in which he/she was elected, according the appropriate code number of the International Frascati Classification from 2015 and relevant domestic acts that determines the scientific research fields of the third level - fields	Institution	Title in which he was elected	Scientific field
		Faculty of Veterinary Medicine – Skopje, Ss Cyril and Methodius University in Skopje, R Macedonia	Full professor	4.03 Veterinary sciences

9.	List of courses that the teacher leads separately for the first, second and third cycle of studies			
	9.1.	List of courses taught by the teacher in the first and second cycle of integrated studies		
		No	Course program title	Study program / Institution
		1.	Pathophysiology 1	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		2.	Pathophysiology 2	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		3.	Basis of Cytological Diagnostics	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		4.	Veterinary Hematology	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		5.	Clinical Pathophysiology	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
	9.2.	List of courses taught by the teacher in the second cycle of studies		
		No	Course program title	Study program / Institution
		1.		
		2.		
	9.3.	List of courses taught by the teacher in the third cycle of studies		
		No	Course program title	Study program / Institution

		1.	Selected topics of pathophysiology	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje	
		2.	Veterinary laboratory medicine	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje	
		3.	Cytological diagnostics	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje	
10.	Selected results in the last five years				
	10.1.	Relevant published scientific papers (maximum 5)			
		No	Author	Title	Publisher / Year
		1.			
		2.			
		3.			
		4.			
		5.			
	10.2.	Participation in national and international scientific-research projects (maximum 5)			
		No	Role in the project (project manager or participant)	Title	Time duration of the project The institution from which everything is organized, financed, implemented
		1.	Project manager	Digital Education in Veterinary Studies (DEVet)	2021-2022, Erasmus+ Strategic Partnerships / Partnerships for Digital Education Readiness Project, 2020-1-RS01-KA226-HE-094555
		2.			
		3.			
		4.			
		5.			
	10.3.	Published books in the last five years (maximum 5)			
		No	Author	Title	Publisher / Year

		1.	Pendovski, Lazo, Starič, Jože, Biricik, Halil S., Kjosevski, Miroslav, Ulchar, Igor, Hajrulai Musliu, Zehra, Nikolovski, Martin, Ilievska, Ksenija, . Popovska Percinikj, Florina	Animal management in disasters : Basic principles /	Ss. Cyril and Methodius University in Skopje, Faculty of veterinary medicine, 2023. - 137 стр. : илустр. ; 30 см ISBN 978-9989-774-41-6 COBISS.MK-ID 59362565
		2.			
		3.			
		4.			
		5.			
	10.4.	Published professional papers in the last five years (maximum 5)			
		No	Author	Title	Publisher / Year
		1.			
		2.			
		3.			
		4.			
		5.			
		6.			
11.	Mentoring undergraduate, postgraduate and doctoral students				
	11.1.	Diploma works			
	11.2.	Master theses			
	11.3.	Doctoral dissertations			
12.	For mentors of PhD studies, selected results in the last four/five years				
	12.1.	Evidence of printed scientific papers in international scientific journals in the field (maximum 6) in the last five years			
		No	Author	Title	Publisher / Year
		1.			
		2.			
		3.			
		4.			
		5.			
		6.			
	12.2.	Evidence of at least two printed scientific papers in scientific journals with impact facto field in the last five years			
		No	Author	Title	Publisher / Year
		1.			
		2.			
	12.3.	Evidence of at least three participations on international meetings in last five years			
		No.	Author	Title	International meeting/ conference / Year

		1.	**Igor Ulchar**, Ksenija Ilievska, Lazo Pendovski, Zehra Hajruali Musliu, Alen Slavica, Lada Radin, Marko Poleto, Danijela Kirovski, Ljubomir Jovanovic, Ivan Jovanovic	Digital Veterinary Education (DEVet) – An ERASMUS+ Project for Development/Creating of Digital Materials/Tools in the Education Program of Veterinary Medicine (Outcomes Review)	Book of Abstracts, 9th International Scientific Meeting, Days of veterinary medicine 2022 22-25 September 2022, Ohrid, RN Macedonia, 43	2022
		2.	Miroslav Kjosevski, Ksenija Ilievska, **Igor Ulchar**, Dean Jankuloski, Lazo Pendovski	EAEVE and National Quality Standards in Higher Education: Gaps and Complementarities	Book of abstracts, 10th International Scientific Meeting Days of Veterinary Medicine 2024 and 2nd European Conference on Veterinary and Medical Education (ECVME) 22-25 September 2024, Ohrid, RN Macedonia, 145	2024

No: 10	**Data for teaching staff and mentors of 3rd cycle of studies (PhD)**			
1.	Name and surname	**Blagica Sekovska**		
2..	Date of birth	23.02.1970		
3.	Level of education	VIII		
4.	Title of teaching-scientific, teaching-professional, teaching, scientific and associate titles	PhD Full professor		
5.	Data on completed education, i.e. acquired academic and scientific degrees	Education	Year	Institution
		Higher education	1994	Faculty of food and agriculture, Ss Cyril and Methodius University in Skopje
		Master studies	2001	Faculty of economics, Ss Cyril and Methodius University in Skopje
		Doctoral studies	2006	Economical institute
6.	Area, field, and area of the scientific degree master's studies	Area	Field	Discipline
		Social sciences	5.02 Economy and busniss	5.02.00.05 Marketing
7.	Field, field, and area of the	Area	Field	Discipline

	scientific degree Doctor of Science with the corresponding code number of the scientific field of the doctorate thesis according to the International Frascati Classification of 2015 and relevant domestic acts that determine the scientific research fields of the third-level - areas	Social sciences	5.02 Economy and busniss	5.02.00.05 Marketing
8.	If he/she is employed, the name of the institution where he/she works, title, and scientific field in which he/she was elected, according to the appropriate code number of the International Frascati Classification from 2015 and relevant domestic acts that determines the scientific research fields of the third level - fields	Institution	Title in which he was elected	Scientific field
		Faculty of veterinary medicine-Skopje, Ss. Cyril and Methodius University in Skopje	Full professor	5.02 Economy and busniss

9.	List of courses that the teacher leads separately for the first, second, and third cycle of studies			
	9.1.	List of courses taught by the teacher in the first cycle of studies		
		No	Course program title	Study program / Institution
		1.	Rural Economics	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		2.	Communication in Veterinary Practice	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		3.	Basic Management and Management of Veterinary Practice	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		4.	Green Economics and Sustainable Development	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		5.	Economics and Organization in Livestock Production	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		6.	Marketing in Veterinary Practice	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		7.	Animal Product Supply Chain Management	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
	9.2.	List of courses taught by the teacher in the second cycle of studies		
		No	Course program title	Study program / Institution
		1.		
		2.		
		3.		
	9.3.	List of courses taught by the teacher in the third cycle of studies		
		No	Course program title	Study program / Institution

		1.	Management of the supply chains of animal products and quality management	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje
		2.	Marketing and management of the veterinary practice	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje
		3.	Communicological and ethical principles in the relationshipwith clients	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje
		4.	Economyinanimal health and production	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje
		5.		
		6.		

10.	Selected results in the last five years				
	10.1.	Relevant published scientific papers (maximum 5)			
		No	Author	Title	Publisher / Year
		1.	Egle Rapaliute, Annika van Roon, Gerdien van Schaik, Inge Santman-Berends, Xhelil Koleci , Madalina Mincu, Jörn Gethmann, Beate Conrady, Tanja Knific, Jaka Jakob Hodnik, John Berezowski, Luís Pedro Carmo, Aurélien Madouasse, Attila Tarpai, Anton Gerilovych, Alvydas Malakauskas , **Blagica Sekovska** , Christine Fourichon, Emmanouil Kalaitzakis, Franz-Ferdinand Roch, Hans Houe, Katarzyna Dudek, Kerli Mõtus, László Ózsvári, Lina Costa , Maria Guelbenzu-Gonzalo, Madeleine K. Henry, Mentor Alishani , Nicola Pozzato , Petter Hopp, Ramon Juste, Sam Strain, Rene Mandelik, Štefan Vilcek , Tiina Autio, Lena-Mari Tamminen and Céline Faverjon : E.Claerebout:	"Initial assessment of the economic burden of major parasitic helminth infections to the ruminant livestock industry in Europe",	Preventive veterinary medicine, Vol.182, September 2020, 105103

		2.	Jaka Jakob Hodnik, Žaklin Acinger-Rogic, Mentor Alishani, Tiina Autio, Ana Balseiro, John Berezowski, Luís Pedro Carmo, Ilias Chaligiannis, Beate Conrady, Lina Costa, Iskra Cvetkovikj, Ivana Davidov, Marc Dispas , Igor Djadjovski, Elsa Leclerc Duarte, Céline Faverjon, Christine Fourichon , Jenny Frössling, Anton Gerilovych, Jörn Gethmann, Jacinto Gomes, David Graham, Maria Guelbenzu, George J. Gunn, Madeleine K. Henry, Petter Hopp, Hans Houe, Elena Irimia, Jožica Ježek, Ramon A. Juste , Emmanouil Kalaitzakis, Jasmeet Kaler, Selcuk Kaplan, Polychronis Kostoulas, Kaspars Kovalenko, Nada Kneževic, Tanja Knific, Xhelil Koleci , Aurélien Madouasse, Alvydas Malakauskas, Rene Mandelik, Eleftherios Meletis , Madalina Mincu, Kerli Mõtus, Violeta Muñoz-Gómez, Mihaela Niculae, Jelena Nikitovic, Matjaž Ocepek, Marie Tangen-Opsal, László Ózsvári, Dimitrios Papadopoulos, Theofilos Papadopoulos, Sinikka Pelkonen, Miroslaw Pawel Polak, Nicola Pozzato, Eglé Rapaliuté, Stefaan Ribbens, João Niza-Ribeiro, Franz-Ferdinand Roch, Liza Rosenbaum Nielsen , Jose Luis Saez, Søren Saxmose Nielsen , Gerdien van Schaik, Ebba Schwan, **Blagica Sekovska**, Jože Staric , Sam Strain, Petr Šatran, Sabina Šeric-Hara, Lena-Mari Tamminen, Hans-Hermann Thulke, Ivan Toplak, Erja Tuunainen, Sharon Verner, Štefan	“Existence and Quality of Data on Control Programs for EU Non-regulated Cattle Diseases: Consequences for Estimation and Comparison of the Probability of Freedom From Infection”	Frontiers of veterinary science, 19.07.2021, Epidemiology and economics https://doi.org/10.3389/fvets.2021.689375

		3.	Jaka Jakob Hodnik, Žaklin Acinger-Rogic, Mentor Alishani, Tiina Autio, Ana Balseiro, John Berezowski, Luís Pedro Carmo, Ilias Chaligiannis, Beate Conrady, Lina Costa, Iskra Cvetkovikj, Ivana Davidov, Marc Dispas , Igor Djadjovski, Elsa Leclerc Duarte, Céline Faverjon, Christine Fourichon , Jenny Frössling, Anton Gerilovych, Jörn Gethmann, Jacinto Gomes, David Graham, Maria Guelbenzu, George J. Gunn, Madeleine K. Henry, Petter Hopp, Hans Houe, Elena Irimia, Jožica Ježek, Ramon A. Juste , Emmanouil Kalaitzakis, Jasmeet Kaler, Selcuk Kaplan, Polychronis Kostoulas, Kaspars Kovalenko, Nada Kneževic, Tanja Knific, Xhelil Koleci , Aurélien Madouasse, Alvydas Malakauskas, Rene Mandelik, Eleftherios Meletis , Madalina Mincu, Kerli Mõtus, Violeta Muñoz-Gómez, Mihaela Niculae, Jelena Nikitovic, Matjaž Ocepek, Marie Tangen-Opsal, László Ózsvári, Dimitrios Papadopoulos, Theofilos Papadopoulos, Sinikka Pelkonen, Miroslaw Pawel Polak, Nicola Pozzato, Eglé Rapaliuté, Stefaan Ribbens, João Niza-Ribeiro, Franz-Ferdinand Roch, Liza Rosenbaum Nielsen , Jose Luis Saez, Søren Saxmose Nielsen , Gerdien van Schaik, Ebba Schwan, **Blagica Sekovska**, Jože Staric , Sam Strain, Petr Šatran, Sabina Šeric-Hara, Lena-Mari Tamminen, Hans-Hermann Thulke, Ivan Toplak, Erja Tuunainen, Sharon Verner, Štefan	“Overview of Cattle Diseases Listed Under Category C, D or E in the Animal Health Law for Which Control Programmes Are in Place Within Europe”	Frontiers of veterinary science, 30.07.2021, Veterinary epidemiology and Economics, https://doi.org/10.3389/fvets.2021.688078

		4.	Todorka Samardzioska, Valentina Zileska Pancovska, Silvana Petrusheva, **Blagica Sekovska**:	"Prediction of Energy Consumption in Buildings Using Support Vector Machine",	Tehnichki vjesnik, Vol.28, No2, 2021, https://doi.org/10.17559/TV-20190822153751
		5.	Maria Paola, Maurelli, Oliva Maria Dourado Martins, *Eric R. Morgan*, Johannes Charlier, Giuseppe Cringoli, Teresa Letra Mateus, *Bogdan Bacescu*, Christophe Chartier, Edwin Claerebout, Theo de Waal, Christina Helm, *Hubertus Hertzberg*, Barbara Hinney, Johan Höglund, Iveta Angela Kyriánová, Marcin Mickiewicz, *Saulius Petkevičius, Stanislav Simin*, Smaragda Sotiraki, Marina Tosheska, *Mariann Toth*, María Martínez-Valladares, Marian Varady, ***Blagica Sekovska,*** Georg von Samson-Himmelstjerna *and Laura Rinaldi*	"A Qualitative Market Analysis Applied to Mini-FLOTAC and Fill-FLOTAC for Diagnosis of Helminth Infections in Ruminants"	Frontiers in veterinary science, 22.10.2020. Impact factor 2.245, https://doi.org/10.3389/fvets.2020.580649
		6.			
	10.2.	Participation in national and international scientific research projects (maximum 5)			
		No	Role in the project (project manager or participant)	Title	Time duration of the project The institution from which everything is organized, financed, implemented
		1.	participant	**CA23154 (ENVIRANT)** - Environmental impact of anthelmintics in livestock and alternatives to minimize their use	October 2024 – October 2028

		2.	participant	**CA21166**, (SHIFT) - Social Sciences and Humanities for Transformation and Climate Resilience	Octomber 2022- Octomber 2026
		3.			
		4.			
		5.			
	10.3.	Published books in the last five years (maximum 5)			
		No	Author	Title	Publisher / Year
		1.			
		2.			
		3.			
		4.			
		5.			
	10.4.	Published professional papers in the last five years (maximum 5)			
		No	Author	Title	Publisher / Year
		1.			
		2.			
		3.			
		4.			
		5.			
		6.			
11.	Mentoring undergraduate, postgraduate and doctoral students				
	11.1.	Diploma works		3	
	11.2.	Master theses			
	11.3.	Doctoral dissertations			
12.	For mentors of PhD studies, selected results in the last four/five years				
	12.1.	Evidence of printed scientific papers in international scientific journals in the field (maximum 6) in the last five years			
	12.2.	Evidence of at least two printed scientific papers in scientific journals with impact factor in the field in the last five years			
		No	Author	Title	Publisher / Year
	12.3.	Evidence of at least three participations on international meetings in last five years			
		No.	Author	Title	International meeting/ conference / Year

No: 11	**Data for teaching staff and mentors of 3rd cycle of studies (PhD)**			
1.	Name and surname	**Pavle Sekulovski**		
2..	Date of birth	22.01.1996		
3.	Level of education	VIII		
4.	Title of teaching-scientific, teaching-professional, teaching, scientific and associate titles	PhD, Doctor of Veterinary sciences Full professor		
5.	Data on completed education, i.e. acquired academic and scientific degrees	Education	Year	Institution
		Higher education	1991	Faculty of veterinary medicine, University of Belgrade
		Master studies	1996	Faculty of veterinary medicine, University of Belgrade
		Doctoral studies	2006	Faculty of veterinary medicine-Skopje, Ss. Cyril and Methodius University in Skopje
6.	Area, field, and area of the scientific degree master's studies	Area	Field	Discipline
		4 Agricultural and veterinary sciences	4.03 Veterinary sciences	4.03.00.22 Food safety and veterinary public health
7.	Field, field, and area of the scientific degree Doctor of Science with the corresponding code number of the scientific field of the doctorate thesis according to the International Frascati Classification of 2015 and relevant domestic acts that determine the scientific research fields of the third-level - areas	Area	Field	Discipline
		4 Agricultural and veterinary sciences	4.03 Veterinary sciences	4.03.00.22 Food safety and veterinary public health
8.	If he/she is employed, the name of the	Institution	Title in which he was elected	Scientific field

	institution where he/she works, title, and scientific field in which he/she was elected, according to the appropriate code number of the International Frascati Classification from 2015 and relevant domestic acts that determines the scientific research fields of the third level - fields	Faculty of veterinary medicine-Skopje, Ss. Cyril and Methodius University in Skopje	Full professor	4.03 Veterinary sciences

9.	List of courses that the teacher leads separately for the first, second, and third cycle of studies			
	9.1.	List of courses taught by the teacher in the first cycle of studies		
		No	Course program title	Study program / Institution
		1.	Meat Hygiene and Technology	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		2.	Milk Hygiene and Technology	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		3.	Meat, Fish, Eggs and Honey – Hygiene and Technology	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		4.	Food Safety and Veterinary Public Health	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		5.	Veterinary Inspection	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		6.	Food Microbiology	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		7.	Current Food Safety Systems	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
	9.2.	List of courses taught by the teacher in the second cycle of studies		
		No	Course program title	Study program / Institution
		1.		
		2.		
		3.		
	9.3.	List of courses taught by the teacher in the third cycle of studies		
		No	Course program title	Study program / Institution
		1.	Food safety and veterinary public health	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje
		2.	Food microbiology	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje

		3.	Molecular-genetic methods and epidemiology of food poisoning	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje
		4.		
		5.		
		6.		

10.	Selected results in the last five years				
	10.1.	Relevant published scientific papers (maximum 5)			
		No	Author	Title	Publisher / Year
		1.	Risto Uzunov, Zehra Hajrulai-Musliu, Velimir Stojkovski, Elizabeta Dimitrieska Stojkovic, Biljana Stojanovska Dimzoska, Pavle Sekulovski, Dean Jankuloski	Development and Validation ofLC-MS/MS Method for Determination of Ten Beta Agonists in Bovine Urine.	Kafkas Univ Vet Fak Derg,25 (1), 55-60, DOI : 10.9775/kvfd.2018.20324, IF 0.465/ 2019
		2.	Ozbalt Podpecan, Andrej Pengov, Petra Zrimsek, Pavle Sekulovski, Andrej Kirbish	Influence of prolonged treatment protocols on maximum residue levels of amoxicillin concentrations inbovine milk	SlovVetRes 2014; 51(2):65-72
		3.	Risto Uzunov, Zehra Hajrulai-Musliu, Elizabeta Dimitrieska Stojkovic, Biljana Stojanovska Dimzoska, Pavle Sekulovski, Velimir Stojkovski.	Use of ELISA for PreliminaryScreening of 19 Nortestosterone Anabolic Steroid in Cattle Meat in Republic of Macedonia	Kafkas Univ Vet Fak Derg, 19 (1), 173-177, 2013, DOI: 10.9775/kvfd.2012.7527, IF 0.495.
		4.			
		5.			
	10.2.	Participation in national and international scientific research projects (maximum 5)			

		No	Role in the project (project manager or participant)	Title	Time duration of the project The institution from which everything is organized, financed, implemented
		1.			
		2.			
		3.			
		4.			
		5.			
	10.3.	Published books in the last five years (maximum 5)			
		No	Author	Title	Publisher / Year
		1.			
		2.			
		3.			
		4.			
		5.			
	10.4.	Published professional papers in the last five years (maximum 5)			
		No	Author	Title	Publisher / Year
		1.			
		2.			
		3.			
		4.			
		5.			
		6.			
11.	Mentoring undergraduate, postgraduate and doctoral students				
	11.1.	Diploma works	8		
	11.2.	Master theses	1		
	11.3.	Doctoral dissertations	6		
12.	For mentors of PhD studies, selected results in the last four/five years				
	12.1.	Evidence of printed scientific papers in international scientific journals in the field (maximum 6) in the last five years			
			M.Ratkova-Manovska, M.Prodanov, Lj.Angelovski, D.Jankuloski, P.Sekulovski	Prevalence of the enterotoxigenic Staphylococcus aureus strains isolated from raw milk and cheese produced in North Macedonia	Mac Vet Rev 2021; 44 (1): 71 - 77
			Lj.Angelovski, Z. Popova, K.Blagoevska, S. Mojsova M.Ratkova-Manovska, M.Prodanov, D.Jankuloski, P.Sekulovski	Isolation rate of Campylobacter spp. and detection of virulence genes ofCampylobacter jejuni across the broiler chain	Mac Vet Rev 2021; 44 (2): 149 - 157

			M.Ratkova-Manovska, M.Prodanov, D.Jankuloski, P.Sekulovski, K.Blagoevska	Detection of enterotoxigenic potential of Staphylococcus aureus isolates from cheese samples with two different methods	Mac Vet Rev 2022; 45 (1): 27 - 33
			Ljupco Angelovski, Zagorka Popova, Katerina Blagoevska, Sandra Mojsova, Marija Ratkova Manovska, Mirko Prodanov, Dean Jankuloski, Pavle Sekulovski	Isolation rate of Campylobacter spp. and detection of virulence genes of Campylobacter jejuni across the broiler chain	Mac Vet Rev /2021
			Marija Ratkova Manovska, Mirko Prodanov, Dean Jankuloski, Pavle Sekulovski, Katerina Blagoevska	Enterotoxigenic staphylococcus strains isolated from raw milk and dairy products from R. N. Macedonia	Book of abstracts: 9th International scientific meeting days of veterinary medicine 2022

12.2.	Evidence of at least two printed scientific papers in scientific journals with impact factor in the field in the last five years			
	No	Author	Title	Publisher / Year
		Risto Uzunov, Zehra Hajrulai-Musliu, Velimir Stojkovski, Elizabeta Dimitrieska Stojkovic, Biljana Stojanovska Dimzoska, Pavle Sekulovski, Dean Jankuloski	Development and Validation of LC-MS/MS Method for Determination of Ten Beta Agonists in Bovine Urine.	Kafkas Univ Vet Fak Derg, 25 (1), 55-60, DOI : 10.9775/kvfd.2018.20324, IF 0.465/ 2019

12.3.	Evidence of at least three participations on international meetings in last five years				
	No.	Author	Title	International meeting/ conference	Year

<table>
<tr><td colspan="2">No: 12</td><td colspan="4">Data for teaching staff and mentors of 3rd cycle of studies (PhD)</td></tr>
<tr><td>1.</td><td colspan="2">Name and surname</td><td colspan="3">Slavcho Mrenoshki</td></tr>
<tr><td>2..</td><td colspan="2">Date of birth</td><td colspan="3">20.03.1966</td></tr>
<tr><td>3.</td><td colspan="2">Level of education</td><td colspan="3">VIII</td></tr>
<tr><td>4.</td><td colspan="2">Title of teaching-scientific, teaching-professional, teaching, scientific and associate titles</td><td colspan="3">PhD, Doctor of Veterinary sciences
Full professor</td></tr>
<tr><td rowspan="4">5.</td><td colspan="2" rowspan="4">Data on completed education, i.e. acquired academic and scientific degrees</td><td>Education</td><td>Year</td><td>Institution</td></tr>
<tr><td>Higher education</td><td>1984</td><td>Faculty of veterinary medicine, University of Belgrade</td></tr>
<tr><td>Master studies</td><td>2001</td><td>Faculty of veterinary medicine-Skopje, Ss. Cyril and Methodius University in Skopje</td></tr>
<tr><td>Doctoral studies</td><td>2006</td><td>Faculty of veterinary medicine-Skopje, Ss. Cyril and Methodius University in Skopje</td></tr>
<tr><td rowspan="2">6.</td><td colspan="2" rowspan="2">Area, field and area of the scientific degree master's studies</td><td>Area</td><td>Field</td><td>Discipline</td></tr>
<tr><td>4
Agricultural and veterinary sciences</td><td>4.03
Veterinary sciences</td><td>4.03.00.05
Microbiology and immunology</td></tr>
<tr><td rowspan="2">7.</td><td colspan="2" rowspan="2">Field, field and area of the scientific degree Doctor of Science with the corresponding code number of the scientific field of the doctorate thesis according to the International Frascati Classification of 2015 and relevant domestic acts that determine the scientific research fields of the third level - areas</td><td>Area</td><td>Field</td><td>Discipline</td></tr>
<tr><td>4
Agricultural and veterinary sciences</td><td>4.03
Veterinary sciences</td><td>4.03.00.05
Microbiology and immunology</td></tr>
<tr><td rowspan="2">8.</td><td colspan="2" rowspan="2">If he/she is employed, name of the institution where he/she works, title and scientific field in which he/she was elected, according the appropriate code number of the International Frascati Classification from 2015 and relevant domestic acts that determines the scientific research fields of the third level - fields</td><td>Institution</td><td>Title in which he was elected</td><td>Scientific field</td></tr>
<tr><td>Faculty of veterinary medicine-Skopje, Ss. Cyril and Methodius University in Skopje</td><td>Full professor</td><td>4.03
Veterinary sciences</td></tr>
<tr><td rowspan="3">9.</td><td colspan="5">List of courses that the teacher leads separately for the first, second and third cycle of studies</td></tr>
<tr><td>9.1.</td><td colspan="4">List of courses taught by the teacher in the first cycle of studies</td></tr>
<tr><td>No</td><td colspan="2">Course program title</td><td>Study program / Institution</td></tr>
</table>

		1.	Microbiology 1	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		2.	Microbiology 2	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		3.	Veterinary Immunology	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		4.	Veterinary Vaccinology	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		5.	Case Studies in Veterinary Clinical Immunology	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		6.	Case Studies in Veterinary Clinical Microbiology	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		7.	Bacterial Resistance to Antibiotics	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		8.		
	9.2.	List of courses taught by the teacher in the second cycle of studies		
		No	Course program title	Study program / Institution
		1.		
		2.		
	9.3.	List of courses taught by the teacher in the third cycle of studies		
		No	Course program title	Study program / Institution
		1.	Bacterial resistance to antibiotics	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje
		2.	Case studies in clinical veterinary immunology	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje
		3.	Case studies in clinical veterinary microbiology	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje
		4.	Veterinary vaccinology	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje
10.	Selected results in the last five years			
	10.1.	Relevant published scientific papers (maximum 5)		
		No	Author	Title	Publisher / Year
		1.			
		2.			
		3.			
		4.			
		5.			
	10.2.	Participation in national and international scientific-research projects (maximum 5)		

		No	Role in the project (project manager or participant)	Title	Time duration of the project The institution from which everything is organized, financed, implemented
		1.	Management Committee Member	European Network for Optimization of Veterinary Antimicrobial Treatment (ENOVAT),	15/11/2019 - 14/11/2023 COST Action CA18217
		2.	Management Committee Member	Committee Member European Network of Vaccine Adjuvants (ENOVA)	13/11/2017 - 12/11/2021 COST Action CA16231
		3.			
		4.			
		5.			
	10.3.	Published books in the last five years (maximum 5)			
		No	Author	Title	Publisher / Year
		1.	Ashfield R, Nnamdi Oli A, Esimone C, and Anagu L (Editors) Pages 223-280, ISBN 9780323911467	Vaccinology and Methods in Vaccine Research. Chapter 9 - Adjuvants, immunomodulators, and adaptogens (authors: Milicic A, Reinke S, Fergusson J, Lindblad EB, Thakur A, Corby G, Longet S, Górska S, Razim A, Hu K, Morein B, Luchner M, Christensen D, Mrenoshki S, Ercelen Ceylan S, Gizurarson S, Chigozie, Ugwu M.)	Academic Press / 2022
		2.			
		3.			
		4.			
		5.			
	10.4.	Published professional papers in the last five years (maximum 5)			
		No	Author	Title	Publisher / Year
		1.			
		2.			
		3.			
		4.			
		5.			
		6.			
11.	Mentoring undergraduate, postgraduate and doctoral students				
	11.1.	Diploma works		3	
	11.2.	Master theses		2	
	11.3.	Doctoral dissertations		1	
12.	For mentors of PhD studies, selected results in the last four/five years				
	12.1.	Evidence of printed scientific papers in international scientific journals in the field (maximum 6) in the last five years			

		No	Author	Title	Publisher / Year
		1.			
		2.			
		3.			
		4.			
		5.			
		6.			
	12.2.	Evidence of at least two printed scientific papers in scientific journals with impact factor in the field in the last five years			
		No	Author	Title	Publisher / Year
		1.			
		2.			
	12.3.	Evidence of at least three participations on international meetings in last five years			

No.	Author	Title	International meeting/ conference	Year
1.	Mrenoshki S, Visci G, Notario E, Marzano M, Martino NA, Mastrorocco A, Temerario L, Corrente M, Mrenoshki D, Lacalandra GM, Pesole G, Dell'Aquila ME.	Cultivation and identification of microbiota in sheep follicular fluid	76° Convegno SISVET, Bari, Italy	21-23 June 2023
2.	Mrenoshki S, Temerario L, Mastrorocco A, Tridente F, Corrente M, Mrenoshki D, Lacalandra GM, Dell'Aquila ME.	Impact of sheep follicular fluid microbiota metabolites on maturation rate and embryo cleavage of prepubertal lamb oocytes in JIVET procedure	19th International Congress on Animal Reproduction (ICAR 2020+2), Bologna, Italy	26-30 June, 2022,
3.	Mrenoshki S, Temerario L, Mastrorocco A, Corrente M, Mrenoshki D, Lacalandra GM, Dell'Aquila ME	Does follicular microbiome affect oocyte competence? Preliminary observations	74° Convegno SISVET, Virtual edition, Italy	23-26 June 2021

No: 13	Data for teaching staff and mentors of 3rd cycle of studies (PhD)	
1.	Name and surname	**Jovana Stefanovska**
2..	Date of birth	31.5.1966
3.	Level of education	VIII
4.	Title of teaching-scientific, teaching-professional, teaching,	PhD, Doctor of Veterinary sciences Full professor

	scientific and associate titles			
5.	Data on completed education, i.e. acquired academic and scientific degrees	Education	Year	Institution
		High education Doctor of veterinary medicine	1991	Faculty of veterinary medicine; University of Zagreb
		Master studies	1998	Faculty of veterinary medicine; University of Belgrade
		Doctoral studies	2011	Faculty of veterinary medicine - Skopje; Ss. Cyril and Methodius University in Skopje
6.	Area, field and discipline of the scientific degree master's studies	Area	Field	Discipline
		4 Agricultural and veterinary sciences	4.03 Veterinary sciences	4.03.00.14 Parsasitic diseasses
7.	Field and area of the scientific degree Doctor of Science with the corresponding code number of the scientific field of the doctorate thesis according to the International Frascati Classification of 2015 and relevant domestic acts that determine the scientific research fields of the third level - areas	Area	Field	Discipline
		4 Agricultural and veterinary sciences	4.03 Veterinary sciences	4.03.00.14 Parsasitic diseasses
8.	If he/she is employed, name of the institution where he/she works, title and scientific field in which he/she was elected, according the appropriate code number of the International Frascati Classification from 2015 and relevant domestic acts that determines the scientific research fields of the third level - fields	Institution	Title in which he/she was elected	Scientific field
		Faculty of veterinary medicine - Skopje; Ss. Cyril and Methodius University in Skopje	Full professor	4.03 Veterinary sciences

9.	List of courses that the teacher leads separately for the first, second and third cycle of studies			
	9.1.	List of courses taught by the teacher in the first cycle of studies		
		No	Course program title	Study program / Institution
		1.	Parasitology and Parasitic Diseases 1	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		2.	Parasitology and Parasitic Diseases 2	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje

		3.	Veterinary Entomology	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		4.	Tropical Parasitic Diseases	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		5.	Veterinary Clinical Parasitology	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		6.	Parasitological Cases	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		7.	Parasitology in Public Health	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
	9.2.	List of courses taught by the teacher in the second cycle of studies		
		No	Course program title	Study program / Institution
		1.		
		2.		
	9.3.	List of courses taught by the teacher in the third cycle of studies		
		No	Course program title	Study program / Institution
		1.	Laboratory diagnostic in veterinary parasitology	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje
		2.	Parasitic zoonotic diseases	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje
		3.	Imunoparasitology	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje
		4.	Parasitic diseases in wild animals	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje
		5.	Ectoparasites from veterinary and medical importance	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje
		6.	Entomology of vectors	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje
		7.	Surveillance and capture of arthropod vectors	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje
		8.	Population control of arthropod vectors	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje
10.	Selected results in the last five years			
	10.1.	Relevant published scientific papers (maximum 5)		
		No	Author	Title	Publisher / Year

		1.	Suzana Tasić-Otašević, Sara Savić, Maja Jurhar-Pavlova, Jovana Stefanovska, Marko Stalević, Aleksandra Ignjatović, Marina Ranđelović, Bojan Gajić, Aleksandar Cvetkovikj, Simona Gabrielli	Molecular Survey of Dirofilaria and Leishmania Species in Dogs from Central Balkan.	Animals (2022) 12 (7), 911
		2.	Nazli Ayhan, Bulent Alten, Vladimir Ivovic, Aleksandar Cvetkovikj, Jovana Stefanovska, Franjo Martinkovic, Geraldine Piorkowski, Gregory Moureau, Ernest A. Gould, John H.-O. Pettersson, Xavier de Lamballerie, Remi N. Charrel	Field surveys in Croatia and North, Macedonia reveal two novel phleboviruses circulating in sandflies.	Journal of General Virology (2021) 102 (11).
		3.	Betim Xhekaj, Ina Hoxha, Katharina Platzgummer, Jovana Stefanovska, Vít Dvoˇrák, Markus Milchram, Adelheid G. Obwaller, Wolfgang Poeppl, Nesade Muja-Bajraktari,Julia Walochnik,Attila J. Trájer, Kurtesh Sherifi, Aleksandar Cvetkovikj, Edwin Kniha.	A cross-sectional study on phlebotomine sand flies in relation to disease transmission in the Republic of Kosovo	Med Vet Entomol. 2024;1–13.
		4.	Attila J. Tr´ajer, Ina Hoxha , Betim Xhekaj , Katharina Platzgummer , Vit Dvoˇr´ak , Adelheid G. Obwaller , Jovana Stefanovska , Aleksandar Cvetkovikj , Julia Walochnik , Kurtesh Sherifi , Edwin Kniha	Ecological setting of phlebotomine sand flies in the Republic of Kosovo.	Heliyon 10 (2024) e33029

		5.	Vit Dvorak, Ozge Erisoz Kasap, Vladimir Ivovic, Ognyan Mikov, Jovana Stefanovska, Franjo Martinkovic, Jasmin Omeragic, Igor Pajovic, Devrim Baymak, Gizem Oguz, Kristyna Hlavackova, Marketa Gresova, Filiz Gunay, Slavica Vaselek, Nazli Ayhan, Tereza Lestinova, Aleksandar Cvetkovikj, Darinka Klaric Soldo, Ivelina Katerinova, Simona Tchakarova, Ayda Yılmaz, Begum Karaoglu, Jose Risueno Iranzo, Perparim Kadriaj, Enkelejda Velo, Yusuf Ozbel, Dusan Petric, Petr Volf, Bulent Alten	Sand flies (Diptera: Psychodidae) in eight Balkan countries: historical review and region-wide entomological survey	Parasites & Vectors 13:573 / 2020.
	10.2.	Participation in national and international scientific-research projects (maximum 5)			
		No	Role in the project (project manager or participant)	Title	Time duration of the project The institution from which everything is organized, financed, implemented
		1.	Member of the Management Committee and participant in working group	COST Action CA23154 Environmental impact of anthelmintics in livestock and alternatives to minimize their use (ENVIRANT)	10/10/2024- 09/10/2028 COST – European cooperation in science and technology
		2.	Project counterpart	IAEA RER5026 Enhancing the Capacity to Integrate Sterile Insect Technique in the effective Management of Invasive Aedes Mosquitoes. Project Counterpart.	IAEA / 2021-2023 (International Atomic Energy Agency)
		3.	Member of the Management Committee and participant in working group	2023 – 2027 Safety in the game meat chain (SafeGameMeat) - COST Action 22166	2023 – 2027 COST – European cooperation in science and technology
		4.	Member	VectorNet 2 (European network for medical and veterinary entomology).	2019 – 2023 Project of ECDC and EFSA.

		5.	Project Counterpart	RER5026 - Enhancing the Capacity to Integrate Sterile Insect Technique in the effective Management of Invasive Aedes Mosquitoes.	2021-2023 IAEA
	10.3.	Published books in the last five years (maximum 5)			
		No	Author	Title	Publisher / Year
		1.	Stefanovska J. and Cvetkovikj A.	Practicum for parasitology and parasitic diseases. Skopje	Faculty of veterinary medicine in Skopje. (in Macedonian) COBISS.MK-ID 53131525.(2021)
		2.			
		3.			
		4.			
		5.			
	10.4.	Published professional papers in the last five years (maximum 5)			
		No	Author	Title	Publisher / Year
		1.			
		2.			
		3.			
		4.			
		5.			
		6.			
11.	Mentoring undergraduate, postgraduate and doctoral students				
	11.1.	Diploma works			
	11.2.	Master theses			
	11.3.	Doctoral dissertations		"Epidemiology of canine leishmaniosis in Kosovo and the role of *Phlebotomus* spp. in its spread". **"Epidemiology of echinococcosis in domestic ruminants in the Republic of North Macedonia"**.	
12.	For mentors of PhD studies, selected results in the last four/five years				
	12.1.	Evidence of printed scientific papers in international scientific journals in the field (maximum 6) in the last five years			
		No	Author	Title	Publisher / Year
		1.	Betim Xhekaj, Jovana Stefanovska, Kurtesh Sherifi, Agim Rexhepi, Bejo Bizhga, Ljubica Rashikj, Martin Nikolovski, Edwin Kniha, Aleksandar Cvetkovikj	Seroprevalence of canine leishmaniosis in asymptomatic dogs in Kosovo	Parasitology Research (2023) 122:607–614

		2.	Betim Xhekaj , Ina Hoxha , Katharina Platzgummer, Edwin Kniha, JuliaWalochnik , Kurtesh Sherifi Agim Rexhepi , Behlul Behluli , Vit Dvoˇrák , Hans-Peter Fuehrer, Adelheid G. Obwaller , Wolfgang Poeppl , Jovana Stefanovska and Aleksandar Cvetkovikj	First detection and molecular analysis of *Leishmania infantum* DNA in sand flies of Kosovo	Pathogens 2023, 12, 1190.
		3.	Betim Xhekaj, Ina Hoxha, Katharina Platzgummer, Jovana Stefanovska, Vít Dvoˇrák, Markus Milchram, Adelheid G. Obwaller, Wolfgang Poeppl, Nesade Muja-Bajraktari,Julia Walochnik,Attila J. Trájer, Kurtesh Sherifi, Aleksandar Cvetkovikj, Edwin Kniha.	A cross-sectional study on phlebotomine sand flies in relation to disease transmission in the Republic of Kosovo	Med Vet Entomol. 2024;1–13.
		4.	Attila J. Tr´ajer, Ina Hoxha , Betim Xhekaj , Katharina Platzgummer , Vit Dvoˇr´ak , Adelheid G. Obwaller , Jovana Stefanovska , Aleksandar Cvetkovikj , Julia Walochnik , Kurtesh Sherifi , Edwin Kniha	Ecological setting of phlebotomine sand flies in the Republic of Kosovo.	Heliyon 10 (2024) e33029
		5.	Ljubica Rashikj, Aleksandar Cvetkovikj, Martin Nikolovski, Iskra Cvetkovikj, Jovana Stefanovska	Cystic echinococcosis in slaughtered cattle and sheep from North Macedonia	Macedonian Veterinary Review Mac Vet Rev 2022; 45 (1): 35-41
		6.			
	12.2.	Evidence of at least two printed scientific papers in scientific journals with impact factor in the field in the last five years			
		No	Author	Title	Publisher / Year

		1.	Betim Xhekaj, Ina Hoxha, Katharina Platzgummer, Jovana Stefanovska, Vít Dvoˇrák, Markus Milchram, Adelheid G. Obwaller, Wolfgang Poeppl, Nesade Muja-Bajraktari,Julia Walochnik,Attila J. Trájer, Kurtesh Sherifi, Aleksandar Cvetkovikj, Edwin Kniha.	A cross-sectional study on phlebotomine sand flies in relation to disease transmission in the Republic of Kosovo	Med Vet Entomol. 2024;1–13.
		2.	Attila J. Tr´ajer, Ina Hoxha , Betim Xhekaj , Katharina Platzgummer , Vit Dvoˇr´ak , Adelheid G. Obwaller , Jovana Stefanovska , Aleksandar Cvetkovikj , Julia Walochnik , Kurtesh Sherifi , Edwin Kniha	Ecological setting of phlebotomine sand flies in the Republic of Kosovo.	Heliyon 10 (2024) e33029
	12.3.	Evidence of at least three participations on international meetings in last five years				
		No.	Author	Title	International meeting/ conference	Year
		1.	Jovana Stefanovska, Ljubica Rashikj, Iskra Cvetkovikj Kristina Atanasova, Aleksandar Cvetkovikj	Seroprevalence of leishmaniosis in stray dogs in North Macedonia	EMOP (The *European* Multicolloquium of Parasitology)	2021
		2.	Ljubica Rashikj, Jovana Stefanovska, Iskra Cvetkovikj, Ivana Arsovska, Vesna Levajkovikj-Trajkov, Aleksandar Cvetkovikj	Gastrointestinal parasites of captive animals in the ZOO in Skopje, North Macedonia, 2020-2022.	9th International Scientific Meeting “Days of Veterinary Medicine 2022”, Abstracts, Ohrid, North Macedonia.	2022

No: 14	**Data for teaching staff and mentors of 3rd cycle of studies (PhD)**			
1.	Name and surname	**Florina Popovska Percinic**		
2..	Date of birth	19.08.1966		
3.	Level of education	VIII		
4.	Title of teaching-scientific, teaching-professional, teaching, scientific and associate titles	PhD, Doctor of Biological science Full professor		
5.	Data on completed education, i.e. acquired academic and scientific degrees	Education	Year	Institution
		Higher education-Biology Ingeneer (BSc)	1993	Institute of Biology, Faculty for Natural Sciences and Mathematics, Ss. Cyril and Methodius University in Skopje
		Master studies-Master of Science (MSc)	2002	Institute of Biology, Faculty of Natural Science and Mathematics, Ss Cyril and Methodius University in Skopje
		Doctoral studies-Doctor of Science in the field of Veterinary Medicine (PhD)	2011	Faculty of Veterinary Medicine-Skopje, Ss Cyril and Methodius University in Skopje
6.	Area, field and area of the scientific degree master's studies	Area	Field	Discipline
		1 Natural and mathematical sciences	1.06 Biological science	1.06.00.11 Histology
7.	Field, field and area of the scientific degree Doctor of Science with the corresponding code number of the scientific field of the doctorate thesis according to the International Frascati Classification of 2015 and relevant domestic acts that determine the scientific research fields of the third level - areas	Area	Field	Discipline
		4 Agricultural and veterinary sciences	4.03 Veterinary sciences	4.03.00.04 Histology and embriology
8.	If he/she is employed, name of the institution where he/she works,	Institution	Title in which she was elected	Scientific field

	title and scientific field in which he/she was elected, according the appropriate code number of the International Frascati Classification from 2015 and relevant domestic acts that determines the scientific research fields of the third level - fields		Faculty of Veterinary Medicine, Ss Cyril and Methodius University in Skopje	Full professor	4.03 Veterinary sciences

9.	List of courses that the teacher leads separately for the first, second and third cycle of studies			
	9.1.	List of courses taught by the teacher in the first and second cycle of studies		
		No	Course program title	Study program / Institution
		1.	Histology and Embryology 1	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		2.	Histology and Embryology 2	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
	9.2.	List of courses taught by the teacher in the third cycle of studies		
		No	Course program title	Study program / Institution
		1.	Selected chapters from histology and embryology	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje
		2.	Histological, histochemical, immunohistochemical and morphometric methods in biomedical science	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje
		3.	Basics of writing, publishing and presenting a scientific paper	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje
		4.	Methodology of scientific research (in a field of agricultural and veterinary sciences, medical sciences and health)	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje
		5.	The use of animals in scientific research	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje

10.	Selected results in the last five years				
	10.1.	Relevant published scientific papers (maximum 5)			
		No	Author	Title	Publisher / Year
		1.	Bartkova A, Morovic M, Strejcek F, Murin M, Benc M, Percinic FP, Laurincik J.	Characterization of porcine oocytes stained with Lissamine Green B and their developmental potential in vitro	Anim Reprod. 17(4): e20200533; 2020

		2.	Piret Hussar, Florina Popovska-Percinic, Katerina Blagoevska, Tõnu Järveots, Ilmārs Dūrītis	Immunohistochemical study of glucose transporter GLUT-5 in duodenal epithelium in norm and in T-2 mycotoxicosis	Foods 9(7): 849; 2020
		3.	Popovska-Perčinić F, Manojlović-Stojanoski M, Pendovski L, Dinevska Kjovkarovska S, Miova B, Grubin J, Milošević V, Ajdžanović V.	A moderate increase in ambient temperature influences the structure and hormonal secretion of adrenal glands in rats	Cell J., Jan; 22(4): 415-42; 2021
		4.	Čukuranović Kokoris J., Ajdžanović V., Pendovski L., Ristić N., Milošević V., Dovenska M., Popovska-Perčinić F.	The effects of long-term exposure to moderate heat on rat pituitary ACTH cells: histological and hormonal study.	Acta Veterinaria-Beograd 72 (1): 1-15; 2022
		5.	Dovenska M., Atanasov B., Benc M., Nikolovski M., Pendovski L., Laurincik J., Dovenski T., Popovska-Perchinic F.	Brilliant cresyl blue staining enhances the morphological quality evaluation of porcine oocytes – a preliminary study.	MacVetRev 46(2): 137-145; 2023
	10.2.	Participation in national and international scientific-research projects (maximum 5)			
		No	Role in the project (project manager or participant)	Title	Time duration of the project The institution from which everything is organized, financed, implemented
		1.	Project manager	Influence of seminal plasma and reduced glutathione on the preservation of sperm biological integrity in cryopreserved ejaculates from Ovchepolska Pramenka	February 2016-February 2017 UKIM
		2.	Participant	Cooperation and Innovation for Good Practices Strategic Partnerships for Adult Education	2016-2018 ERASMUS + Program KA2 - [Project number: 2015-1-TR01-KA204-022441] “Establishment of Safer Animal Rescue Capacity”
		3.	Project manager	Molecular studies of the oocytes with different developmental competence	2020-2022 FVMS
		4.	Participant	Histopathological and hematological biomarkers as a screening tool in assessing the health status of fish from the Lepenec River	June 2022-March 2023 Ministry of Environment and Spatial Planning

		5.	Participant	Reaching Beyond Borders: Enhancing Communication and English Proficiency in Veterinary Medicine Education	1.9.2024-30.8.2026 ERASMUS+ KA220-HED Cooperation partnerships in higher education [Project number 2024-1-MK01-KA220-HED-000251614]
	10.3.	Published books in the last five years (maximum 5)			
		No	Author	Title	Publisher / Year
		1.			
	10.4.	Published professional papers in the last five years (maximum 5)			
		No	Author	Title	Publisher / Year
		1.	Ilieski V., Duro S., Popovska Percinic F. Pendovski L	Functional morphology as a part of education of animal welfare	32nd Congres of European Association of Veterinary Anatomists, P039, 25-28 July 2018, Hannover
		2.	Dovenski T., Petkov V., Trojacanec P., Nikolovski M., Atanasov B., Popovska Percinic F., Dovenska M., Dimitrievski Z., Dzabirski V.	Our experiences in the ex-situ conservation process of indigenous breeds of domestic animals using assisted reproduction technologies (ART)	4th Symposium of protection of agrobiodiversity and preservation of autochthonous breeds of domestic animals, 29.06. – 1.07.2023 Dimitrovgrad, Serbia
11.	Mentoring undergraduate, postgraduate and doctoral students				
	11.1.	Diploma works	/		
	11.2.	Master theses	/		
	11.3.	Doctoral dissertations	1		
12.	For mentors of PhD studies, selected results in the last four/five years				
	12.1.	Evidence of printed scientific papers in international scientific journals in the field (maximum 6) in the last five years			
		No	Author	Title	Publisher / Year
		1.	Verica Lj. Milošević, Walter B. Severs, Nataša M. Ristić, Milica N. Manojlović-Stojanoski, Florina V. Popovska-Perčinić, Branka T. Šošić-Jurjević, Lazo B. Pendovski, Svetlana L. Trifunović, Marko Š. Miler and Vladimir Z. Ajdžanović	Soy isoflavone effects on the adrenal glands of orchidectomized adult male rats: a comprehensive histological and hormonal study	Histology and Histopathology 33(8): 843-857; 2018
		2.	Piret Hussar , Ilmārs Dūrītis , Florina Popovska-Percinic , Tõnu Järveots	Immunohistochemical study of sodium-dependent glucose co-transporters in ostriches kidneys	Journal of Agricultural Science 2, XXXI, 147-150, 2020

		3.	Piret Hussar, Katerina Blagoevska, Tõnu Järveots, Monika Dovenska, Dimitar Bozinovski, Florina Popovska-Percinic.	The effect of probiotics on T-2 mycotoxin iduced apoptosis in chicken liver tissue.	Mac Vet Rev. 43(1); 55-60; 2020
		4.	Vladimir Ajdžanović, Marko Miler, Jasmina Živanović, Branko Filipović, Branka Šošić-Jurjević, Florina Popovska-Perčinić, Verica Milošević	The adrenal cortex after estradiol or daidzein application in a rat model of the andropause: structural and hormonal study	Annals of Anatomy 151487; 2020
		5.	Dovenski T., Trojacanec P., Atanasov B., Nikolovski M., Petkov V., Popovska-Percinic F., Dovenska M., Grizelj J., Vince S.	Novelties in ovine assisted reproductive technologies – a review.	Mac Vet Rev. 45 (2): 109-125; 2022
		6.	Hussar P., Allmang C., Popovska-Percinic F., Järveots T., Dūrītis I.	Comparative study of sodium-dependent glucose co-transporters in kidneys of ostrich chickens.	Scientific Horizons 25(4): 30-35; 2022
	12.2.	Evidence of at least two printed scientific papers in scientific journals with impact factor in the field in the last five years			
		No	Author	Title	Publisher / Year
		1.	Hussar P., Popovska-Percinic F., Blagoevska K., Järveots T., Dūrītis I.	Immunohistochemical study of glucose transporter GLUT-5 in duodenal epithelium in norm and in T-2 mycotoxicosis	Foods 9(7): 849. 2020
		2.	Benc M., Strejcek F., Morovic M., Bartkova A., Murin M., Gad A., Bonnet-Garnier A., Popovska-Percinic F., Laurincik J.	Improving the quality of oocytes with the help of nucleolotransfer therapy	Pharmaceuticals 14, 328; 2021
		3.	Popovska-Perčinić F, Manojlović-Stojanoski M, Pendovski L, Dinevska Kjovkarovska S, Miova B, Grubin J, Milošević V, Ajdžanović V.	A moderate increase in ambient temperature influences the structure and hormonal secretion of adrenal glands in rats	Cell J. 22(4): 415-424; 2021
		4.	Čukuranović Kokoris J., Ajdžanović V., Pendovski L., Ristić N., Milošević V., Dovenska M., Popovska-Perčinić F.	The effects of long-term exposure to moderate heat on rat pituitary ACTH cells: histological and hormonal study	Acta Veterinaria-Beograd 72 (1): 1-15; 2022

		5.	Dovenska M., Atanasov B., Benc M., Nikolovski M., Pendovski L., Laurincik J., Dovenski T., Popovska-Perchinic F	Brilliant cresyl blue staining enhances the morphological quality evaluation of porcine oocytes – a preliminary study	Mac Vet Rev. 46(2): 137-145; 2023	
	12.3.	Evidence of at least three participations on international meetings in last five years				
		No.	Author	Title	International meeting/ conference	Year
		1.	Hussar P., Järveots T., Popovska Percinic F., Duritis I.	Immunohistochemical localization of Na+-glucose co-transporters SGLT1 and SGLT2 in ostrich's kidneys	Amatomia Histologia Embryologia Vol. 51, Suppl. 1, pp.30. Proceedings of the 33rd Congress of European Association of Veterinary Anatomists (EAVA) 28-30.7.2021 Ghent, Belgium	2021
		2.	Dovenska M., Mickov Lj., Nikolovski M., Atanasov B., Petkov V., Pendovski L., Dovenski T., Popovska-Perchinikj F.	Assessment of BCB staining as a quality indicator for developmental ability of porcine oocytes	Proceedings of the 28th Annual Conference of the European Society for Domestic Animal Reproduction (ESDAR) September 2022, Thessaloniki, Greece	2022
		3.	Čukuranović Kokoris J., Dovenska M., Ajdžanović V., Marković Filipović J., Milošević V., Popovska-Perčinić F.	The effect of long-term exposure to moderately high ambient temperature on immunohistomorphometric parameters of pituitary GH cells	VIII Congress of the Serbian Anatomical Society with international participation. Book of abstracts pp.161-162. 21-23.9.2023 Nish, Serbia	2023
		4.	Rebok K., Ristovska M., Jordanova M., Jakimovska M.,.. Popovska-Percinic F.	Practical evaluation of environmental pollution	Proceedings of the III International Congress on Education in Animal Sciences – ICEAS, p. 62, 15-16.6.2023 Zagreb, Croatia	2023
		5.	Popovska-Percinic F., Pendovski L., Ilieski V., Dovenska M., Nikolovski M., Bozinovski D., Milošević V.	Adrenal cortex after prolonged exposure to moderate heat: stereological and hormonal study.	XXXIV EAVA Congress, Book of abstracts p. 81, 25-29.7.2023, Sundvollden, Norway	2023

<table>
<tr><td colspan="2">No: 15</td><td colspan="4">Data for teaching staff and mentors of 3rd cycle of studies (PhD)</td></tr>
<tr><td>1.</td><td colspan="2">Name and surname</td><td colspan="4">Vasilka Poposka Trenevska</td></tr>
<tr><td>2..</td><td colspan="2">Date of birth</td><td colspan="4">22.06.2964</td></tr>
<tr><td>3.</td><td colspan="2">Level of education</td><td colspan="4">VIII</td></tr>
<tr><td>4.</td><td colspan="2">Title of teaching-scientific, teaching-professional, teaching, scientific and associate titles</td><td colspan="4">PhD
Full professor</td></tr>
<tr><td rowspan="4">5.</td><td colspan="2" rowspan="4">Data on completed education, i.e. acquired academic and scientific degrees</td><td>Education</td><td>Year</td><td colspan="2">Institution</td></tr>
<tr><td>Higher education</td><td>1986</td><td colspan="2">Faculy of economy, Ss Cyril and Methodius University in Skopje</td></tr>
<tr><td>Master studies</td><td>1993</td><td colspan="2">Faculy of economy, Ss Cyril and Methodius University in Skopje</td></tr>
<tr><td>Doctoral studies</td><td>1995</td><td colspan="2">Faculy of economy, Ss Cyril and Methodius University in Skopje</td></tr>
<tr><td rowspan="2">6.</td><td colspan="2" rowspan="2">Area, field, and area of the scientific degree master's studies</td><td>Area</td><td>Field</td><td colspan="2">Discipline</td></tr>
<tr><td>5
Social science</td><td>5.02
Economy and business</td><td colspan="2">5.02.00.01
Economy</td></tr>
<tr><td rowspan="2">7.</td><td colspan="2" rowspan="2">Field, field, and area of the scientific degree Doctor of Science with the corresponding code number of the scientific field of the doctorate thesis according to the International Frascati Classification of 2015 and relevant domestic acts that determine the scientific research fields of the third-level - areas</td><td>Area</td><td>Field</td><td colspan="2">Discipline</td></tr>
<tr><td>5
Social science</td><td>5.02
Economy and business</td><td colspan="2">5.02.00.01
Economy</td></tr>
<tr><td rowspan="2">8.</td><td colspan="2" rowspan="2">If he/she is employed, the name of the institution where he/she works, title, and scientific field in which he/she was elected, according to the appropriate code number of the International Frascati Classification from 2015 and relevant domestic acts that determines the scientific research fields of the third level - fields</td><td>Institution</td><td>Title in which he was elected</td><td colspan="2">Scientific field</td></tr>
<tr><td>Faculy of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje</td><td>Full professor</td><td colspan="2">5.02
Economy and business</td></tr>
<tr><td rowspan="4">9.</td><td colspan="6">List of courses that the teacher leads separately for the first, second, and third cycle of studies</td></tr>
<tr><td>9.1.</td><td colspan="5">List of courses taught by the teacher in the first cycle of studies</td></tr>
<tr><td></td><td>No</td><td colspan="2">Course program title</td><td colspan="2">Study program / Institution</td></tr>
<tr><td></td><td>1.</td><td colspan="2">Biostatistics</td><td colspan="2">Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje</td></tr>
</table>

		2.			
		3.			
		4.			
		5.			
		6.			
	9.2.	List of courses taught by the teacher in the second cycle of studies			
		No	Course program title	Study program / Institution	
		1.			
		2.			
		3.			
	9.3.	List of courses taught by the teacher in the third cycle of studies			
		No	Course program title	Study program / Institution	
		1.			
		2.			
		3.			
		4.			
		5.			
		6.			
10.	Selected results in the last five years				
	10.1.	Relevant published scientific papers (maximum 5)			
		No	Author	Title	Publisher / Year
		1.	Благица Сековска ВасилкаПоповска Треневска	Production and productivity of agriculture in Macedonia duringthe XX century	Western Balkan Jurnal of agricultural and rural development , June 2019, Beograd Serbia
		2.	Radmila Crceva Nikolovska, Aleksandra Angeleska,Aleksandar Nikolovski, Elizabeta Stojkovic Dimitrievska,Vasilka Poposka Treneska, Blagica Sekovska	Detecting meat fraud in food supply chain	Western Balkan Journal of agricultural economics and rural development, Volume I, No 1, July-December –June 2019,
		3.			
		4.			
		5.			
	10.2.	Participation in national and international scientific research projects (maximum 5)			
		No	Role in the project (project manager or participant)	Title	Time duration of the project The institution from which everything is organized, financed, implemented
		1.	COST Action	CA2116 SHIFT – Social science and humanity for transformationin climate resilence	October 2022 October 2026
		2.			
		3.			
		4.			
		5.			

	10.3.	Published books in the last five years (maximum 5)			
		No	Author	Title	Publisher / Year
		1.			
		2.			
		3.			
		4.			
		5.			
	10.4.	Published professional papers in the last five years (maximum 5)			
		No	Author	Title	Publisher / Year
		1.			
		2.			
		3.			
		4.			
		5.			
		6.			
11.	Mentoring undergraduate, postgraduate and doctoral students				
	11.1.	Diploma works			
	11.2.	Master theses			
	11.3.	Doctoral dissertations			
12.	For mentors of PhD studies, selected results in the last four/five years				
	12.1.	Evidence of printed scientific papers in international scientific journals in the field (maximum 6) in the last five years			
	12.2.	Evidence of at least two printed scientific papers in scientific journals with impact factor in the field in the last five years			
		No	Author	Title	Publisher / Year
	12.3.	Evidence of at least three participations on international meetings in last five years			
		No.	Author	Title	International meeting/ conference	Year
		1.	Vasilka Poposka Trenevska	Financial Challenges for the Countries of the Region	Vienna Economic Forum	2020
		2.	Vasilka Poposka Trenevska	Legal Aspects of Telemedicine	European Conference in medical low, Vienna	2018
		3.	Vasilka Poposka Trenevska	Paneuropa and its Future	Paneuropa Conference Vienna	2018

No:16	**Data for teaching staff and mentors of 3rd cycle of studies (PhD)**			
1.	Name and surname	**Lazo Pendovski**		
2..	Date of birth	10.11.1975		
3.	Level of education	VIII		
4.	Title of teaching-scientific, teaching-professional, teaching, scientific and associate titles	PhD, Doctor of Veterinary sciences Full professor		
5.	Data on completed education, i.e. acquired academic and scientific degrees	Education	Year	Institution
		Higher education	2001	Faculty of veterinary medicine-Skopje, Ss. Cyril and Methodius University in Skopje
		Master studies	2007	Medical faculty, Ss. Cyril and Methodius University in Skopje
		Doctoral studies	2011	Faculty of veterinary medicine-Skopje, Ss. Cyril and Methodius University in Skopje
6.	Area, field and area of the scientific degree master's studies	Area	Field	Discipline
		3 Medical and health sciences	3.01 Basic medicine	3.01.00.01 Anatomy
7.	Field, field and area of the scientific degree Doctor of Science with the corresponding code number of the scientific field of the doctorate thesis according to the International Frascati Classification of 2015 and relevant domestic acts that determine the scientific research fields of the third level - areas	Area	Field	Discipline
		4. Agricultural and veterinary sciences	4.03 Veterinary science	4.03.00.01 Anatomy of animals
8.	If he/she is employed, name of the institution where	Institution	Title in which he was elected	Scientific field

	he/she works, title and scientific field in which he/she was elected, according the appropriate code number of the International Frascati Classification from 2015 and relevant domestic acts that determines the scientific research fields of the third level - fields	Faculty of Veterinary Medicine, University 'St. Cyril and Methodius' Skopje	Full Professor (PhD)	4.03 Veterinary science

9.	List of courses that the teacher leads separately for the first, second and third cycle of studies			
	9.1.	List of courses taught by the teacher in the first cycle of studies		
		No	Course program title	Study program / Institution
		1.	Animal Anatomy 1	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		2.	Animal Anatomy 2	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		3.	Animal Clinical Anatomy	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		4.	Visual Diagnostic Methods and Physical Therapy	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		5.	Domestic Pet Computed Tomography	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		6.		
	9.2.	List of courses taught by the teacher in the second cycle of studies		
		No	Course program title	Study program / Institution
	9.3.	List of courses taught by the teacher in the third cycle of studies		
		No	Course program title	Study program / Institution
		1.	Comparative Morphology in Mammals	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje
		2.	Applied Anatomy in Mammals	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje
		3.	Histological, Histochemical, Immunohistochemical, and Morphometric Methods in Biomedical Sciences	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje

		4.	Histochemical, Immunohistochemical, and Molecular Methods for Determining Muscle Fiber Types and Meat Quality Assessment	Food Safety, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje	
10.	Selected results in the last five years				
	10.1.	Relevant published scientific papers (maximum 5)			
		No	Author	Title	Publisher / Year
		1.	Piret Hussar, Tõnu Järveots, Lazo Pendovski, Katerina Blagoevska, Trpe Ristoski, Florina Popovska-Percinic (2018).	T-2 mycotoxin induced apoptosis in broiler's liver tissue.	- Papers on Anthropology XXVII/1, 2018, pp. 9–16.
		2.	Benc M., Strejcek F., Murin M., Morovic M., Martinkova S., Jettmarova D., Pendovski L., Fulka J. Jr., Laurincik J.	Nucleologenesis and nucleolotransfer in mammalian oocytes: A review.	Mac Vet Rev; 40 (2): 117-124
		3.	Popovska-Perčinić Florina, Jarić Ivana, Pendovski Lazo, Ristić Nataša, Trifunović Svetlana, Milošević Verica, Ajdžanović Vladimir.	The Effect of Moderate Heat On Rat Pituitary Acth Cells: Histomorphometric, Immunofluorescent and Hormonal Study	Acta Veterinaria-Beograd 2017, 67 (4), 495-507 Impact Factor: 0.604
		4.	Ahmed Gad, Lucie Nemcova, Matej Murin , Jiri Kanka , Jozef Laurincik , Michal Benc , Lazo Pendovski , Radek Prochazka.	microRNA expression profile in porcine oocytes with different developmental competence derived from large or small follicles	Molecular Reproduction and Development., 2019; Vol 86, Issue 4, Pages 426-439 (IF = 3.113)
		5.	Pendovski L., Bozhinovski D., Ilievska K., Trojachanec P., Ilieski V.	Computer tomography (CT) scans as a diagnostic tool for interpretation of S10 plastinated slides from dog cadaver.	Mac Vet Rev 2022; 45 (2): Pages 127-135,
	10.2.	Participation in national and international scientific-research projects (maximum 5)			

		No	Role in the project (project manager or participant)	Title	Time duration pf the project The institution from which everything is organized, financed, implemented
		1.	ERASMUS PLUS PROGRAMME KA2 PROJECT NUMBER - [2015-1-TR01-KA204-022441] project manager	Establishing capacities and techniques for the safe rescue of animals	2016-2018
		2.	Erasmus Plus Programme / KA2 – Cooperation and Innovation for Good Practices Strategic Partnerships for Adult Education participant	Reviving of Farriery; Disappearing profession	01.09.2018-31.08. 2020
		3.	UKIM participant	Validation of 19 microsatellite DNA markers for individual identification and parentage testing in dogs (Canis lupus familiaris).	(2019-2020)
		4.	ERASMUS+ participant	Digital Education in Veterinary Studies (DEVET). \ ERASMUS+	01.03.2021-31.05. 2021
		5.	Food and Agriculture Organization of the United Nations (“FAO”) project manager	“Feasibility assessment and investment proposal in the cattle sector”	2021-2022.
	10.3.	Published books in the last five years (maximum 5)			
		No	Author	Title	Publisher / Year
		1.	Jozef Laurinčík et al. (Martin Morovič, Michal Benc, František Strejček, Alexander V. Sirotkin, Peter Chrenek, Alexander V. Makarevich, Matej Murín, Martin R. Luck , Gábor Vajta, Lazo Pendovski, Oľga Ostrup)	Embryotechnology II.	©Publisher: Constantine the Philosopher University in Nitra, Faculty of Natural Sciencee, Pages: 200, Print numbers: 50, Edition: Prírodovedec no. 681, DOI: http://doi.org/10.17846/2018-embryotechnology, ISBN 978-80-558-1337-

		2.	František Strejček Jozef Laurinčík, Martin Morovič, Michal Benc, Monika Martiniaková, Jozef Trandžík, Radoslav Omelka, Mária Bauerová, Alexandra Bartková Matej Murín, Heiner Niemann, Detlef Rath, Bjoern Petersen, Stoyan Petkov , Poul Hyttel, Urban Besenfelder, Viteslav Havlíček, Gottfried Brem, Peter Sandøe, Christiansen Stine B, Lazo Pendovski.	Animal Biotechnology III.	©Publisher: Constantine the Philosopher University in Nitra, Faculty of Natural Sciences Pages: 157 Print numbers: 50 Edition: Prírodovedec no. 680 DOI: http://doi.org/10.17846/2018-animalbiotechnology, ISBN 978-80-558-1336-3
		3.	Pendovski, Lazo, Starič, Jože, Biricik, Halil S., Kjosevski, Miroslav, Ulchar, Igor, Hajrulai Musliu, Zehra, Nikolovski, Martin, Ilievska, Ksenija, . Popovska Percinikj, Florina	ANIMAL management in disasters : Basic principles /	Ss. Cyril and Methodius University in Skopje, Faculty of veterinary medicine, 2023. - 137 стр. : илустр. ; 30 см ISBN 978-9989-774-41-6 COBISS.MK-ID 59362565
		4.			
		5.			
	10.4.	Published professional papers in the last five years (maximum 5)			
		No	Author	Title	Publisher / Year
		1.	Piret Hussar, Florina Popovska-Percinic, Katerina Blagoevska, Tõnu Järveots, Ilmārs Dūrītis (2020).	Immunohistochemical study of glucose transporter GLUT-5 in duodenal epithelium in norm and in T-2 mycotoxicosis.	Foods 9(7): 849. doi:10.3390/foods9070849 (IF= 4.092) Indexed in ISI Web of Science, Scopus etc.)

		2.	Gad, A, Nemcova, L, Murin, M, et al.	Global transcriptome analysis of porcine oocytes in correlation with follicle size.	Mol Reprod Dev. 2020; 87: 102– 114. https://doi.org/10.1002/mrd.23294 (IF= 3.113)
		3.	Ristić Nataša, Nestorović Nataša, Manojlović-Stojanoski Milica, Trifunović Svetlana, Ajdžanović Vladimir, Filipović Branko, Pendovski Lazo, Milošević Verica (2021.	Prenatal dexamethasone exposure and developmental programming of the ovary of the offspring: a structural study in the rat.	Reproduction, Fertility and Development 33, 245-255. https://doi.org/10.1071/RD20164 (IF=1.718)
		4.	Popovska-Perčinić F, Manojlović-Stojanoski M, Pendovski L, Dinevska Kjovkarovska S, Miova B, Grubin J, Milošević V, Ajdžanović V.	A moderate increase in ambient temperature influences the structure and hormonal secretion of adrenal glands in rats.	Cell J. 2021; 22(4): 415-424. doi: 10.22074/ cellj.2021.6827. (IF= 1.983) (5-Year IF=: 2.049)
		5.	Jovana Čukuranović Kokoris,Vladimir Ajdžanović, Lazo Pendovski, Nataša Ristić, Verica Milošević, Monika Dovenska and Florina Popovska-Perčinić	The Effects of Long-Term Exposure to Moderate Heat on Rat Pituitary ACTH Cells: Histological and Hormonal Study	Acta Veterinaria Volume 72 (2022): Issue 1 (March 2022)
		6.			

11.	Mentoring undergraduate, postgraduate and doctoral students		
	11.1.	Diploma works	1
	11.2.	Master theses	
	11.3.	Doctoral dissertations	1
12.	For mentors of PhD studies, selected results in the last four/five years		
	12.1.	Evidence of printed scientific papers in international scientific journals in the field (maximum 6) in the last five years	

No	Author	Title	Publisher / Year

		1.	P. Hussar, M. Karner, I. Durıtis, A. Plivca, L. Pendovski, T. Jarveots,F. Popovska-Percinic.	Temporospatial study of hexose transporters and mucin in the epithelial cells of chicken (Gallus gallus domesticus) small intestine	Polish Journal of Veterinary Sciences Vol. 20, No. 4 (2017), 627–633 Impact Factor: 0.839
		2.	Verica Lj. Milošević, Walter B. Severs, Nataša M. Ristić, Milica N. Manojlović-Stojanoski, Florina V. Popovska-Perčinić, Branka T. Šošić-Jurjević, Lazo B. Pendovski, Svetlana L. Trifunović1, Marko Š. Miler and Vladimir Z. Ajdžanović.	Soy isoflavone effects on the adrenal glands of orchidectomized adult male rats: a comprehensive histological and hormonal study.	Histol Histopathol (2018) 33: 843-857 Impact Factor: 2.025
		3.	Martin Morovic, Olga Østrup, Frantisek Strejcek, Michal Benc, Matej Murin, Katarina Jedlickova, Alexandra Bartkova, Andrea Lucas-Hahn, Lazo Pendovski and Jozef Laurincik.	Maternally inherited rRNA triggers de novo nucleolus formation in porcine embryos	Zygote Volume 26, Issue 5 October 2018 , pp. 395-402, Cambridge University Press 2018 , Impact Factor: 1.278
		4.	Piret Hussar, Florina Popovska-Percinic, Katerina Blagoevska, Tõnu Järveots, Ilmārs Dūrītis (2020).	Immunohistochemical study of glucose transporter GLUT-5 in duodenal epithelium in norm and in T-2 mycotoxicosis.	Foods 9(7): 849. doi:10.3390/foods9070849 (IF= 4.092) (2019), Indexed in ISI Web of Science, Scopus etc.)

		5.	Svetlana Trifunovića, Milica Manojlović-Stojanoskia, Nataša Nestorovića, Nataša Ristića, Branka Šošić-Jurjevića, Lazo Pendovski, Verica Miloševića	Histological and morphofunctional parameters of the hypothalamic–pituitary–adrenal system are sensitive to daidzein treatment in the adult rat.	Acta Histochemica 120 (2018) 129–135, Impact Factor: 1.652	
		6.				
	12.2.	Evidence of at least two printed scientific papers in scientific journals with impact factor field in the last five years				
		No	Author	Title	Publisher / Year	
		1.	Monika Dovenska,Branko Atanasov, Michal Benc, Martin Nikolovski, Lazo Pendovski, Jozef Laurincik, Toni Dovenski, Nikola Adamov and Florina Popovska-Percinic .	Brilliant Cresyl Blue Staining Enhances the Morphological Quality Evaluation of Porcine Oocytes-a Preliminary Study	Macedonian Veterinary Review Volume 46 (2023): Issue 2 (October 2023)	
		2.	Lazo Pendovski, Dimitar Bozhinovski, Ksenija Ilievska, Plamen Trojachanec, Vlatko Ilieski	Computer tomography (CT) scans as a diagnostic tool for interpretation of S10 plastinated slides from dog cadaver .	Mac Vet Rev 2022; 45 (2): 127 - 135	
	12.3.	Evidence of at least three participations on international meetings in last five years				
		No.	Author	Title	International meeting/ conference	Year
		1.	D. Bozinovski, V. Ilieski, K. Ilievska, P. Trojacanec, L. Pendovski (2022)	Anatomic comparison between S10 plastinated slices and corresponding CT scans of dog cadaver;	(11th Meeting of the Young Generation of Veterinary Anatomists 20th – 22nd July 2022 in Zurich, Switzerland)	2022

		2.	Dimitar Bozinovski; Vlatko Ilieski; Monika Dovenska; Martin Nikolovski; Lazo Pendovski	Computed tomography as an education tool in veterinary clinical anatomy	12th YGVA meeting in Zagreb 17-19th of July 2024	2024

No: 17		**Data for teaching staff and mentors of 3rd cycle of studies (PhD)**		
1.	Name and surname	**Dean Jankuloski**		
2.	Date of birth	23.09.1973		
3.	Level of education	VIII		
4.	Title of teaching-scientific, teaching-professional, teaching, scientific and associate titles	PhD, Doctor of Veterinary sciences Full professor		
5.	Data on completed education, i.e. acquired academic and scientific degrees	Education	Year	Institution
		Higher education	1999	Faculty of veterinary medicine-Skopje, Ss. Cyril and Methodius University in Skopje
		Master studies	2007	Faculty of veterinary medicine-Skopje, Ss. Cyril and Methodius University in Skopje
		Doctoral studies	2012	Faculty of veterinary medicine-Skopje, Ss. Cyril and Methodius University in Skopje
6.	Area, field, and area of the scientific degree master's studies	Area	Field	Discipline
		4 Agricultural and veterinary sciences	4.03 Veterinary sciences	4.03.00.22 Food safety and veterinary public health

7.	Field, field, and area of the	Area	Field	Discipline
		4	4.03	4.03.00.22
8.	If he/she is employed, the name of the institution where he/she works, title, and scientific field in which he/she was elected, according to the appropriate code number of the International Frascati Classification from 2015 and relevant domestic acts that determines the scientific research fields of the third level - fields	Institution	Title in which he was elected	Scientific field
		Faculty of veterinary medicine-Skopje, Ss. Cyril and Methodius University in Skopje	Full professor	4.03 Veterinary sciences

9.	List of courses that the teacher leads separately for the first, second, and third cycle of studies			
	9.1.	List of courses taught by the teacher in the first cycle of studies		
		No	Course program title	Study program / Institution
		1.	Meat Hygiene and Technology	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		2.	Milk Hygiene and Technology	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		3.	Meat, Fish, Eggs and Honey – Hygiene and Technology	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		4.	Food Safety and Veterinary Public Health	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		5.	Veterinary Inspection	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		6.	Food Microbiology	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		7.	Current Food Safety Systems	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
	9.2.	List of courses taught by the teacher in the second cycle of studies		
		No	Course program title	Study program / Institution
		1.	Food microbiology	Second-Cycle Study Program, Professional Specialist Studies in Food Safety and Quality/ Faculty of veterinary medicine-Skopje

		2.	Veterinary Legislation with Food Safety	Second-Cycle Study Program, Professional Specialist Studies in Food Safety and Quality/ Faculty of veterinary medicine-Skopje
		3.	Hygiene and Technology of Meat, Fish, Eggs, Honey, and Their Products	Second-Cycle Study Program, Professional Specialist Studies in Food Safety and Quality/ Faculty of veterinary medicine-Skopje
			Hygiene and Technology of Milk and Dairy Products	Second-Cycle Study Program, Professional Specialist Studies in Food Safety and Quality/ Faculty of veterinary medicine-Skopje
	9.3.	List of courses taught by the teacher in the third cycle of studies		
		No	Course program title	Study program / Institution
		1.	Food microbiology	Third-cycle study program – doctoral studies in"food safety"/ Faculty of veterinary medicine-Skopje
		2.	Molecular Genetic Methods and Epidemiology of Foodborne Illnesses	Third-cycle study program – doctoral studies in"food safety"/ Faculty of veterinary medicine-Skopje
		3.	Food Safety and Veterinary Public Health	Third-cycle study program – doctoral studies in"food safety"/ Faculty of veterinary medicine-Skopje
		4.	National and European Food Legislation	Third-cycle study program – doctoral studies in"food safety"/ Faculty of veterinary medicine-Skopje
		5.	Food Safety and Epidemiology	Third-cycle study program – doctoral studies in"food safety"/ Faculty of veterinary medicine-Skopje
		6.		
10.	Selected results in the last five years			
	10.1.	Relevant published scientific papers (maximum 5)		

No	Author	Title	Publisher / Year
1.	Besart Jashari; Beatrix Stessl; Benjamin Félix; Armend Cana; Bledar Bisha; Dean Jankuloski; Katerina Blagoevska; Adeoye J. Kayode	Multilocus Sequence Typing and Antimicrobial Susceptibility of Listeria monocytogenes Isolated from Foods Surveyed in Kosovo	Microorganisms 2024-11-27 | Journal article DOI: 10.3390/microorganisms 12122441
2.	Nevijo Zdolec; Marta Kiš; Dean Jankuloski; Katerina Blagoevska; Snjezana Kazazic; Marina Pavlak; Bojan Blagojević; Dragan Antic; Maria Ulrika Kristina Fredriksson-Ahomaa; Valerij Pažin	Prevalence and Persistence of Multidrug-Resistant Yersinia enterocolitica 4/O:3 in Tonsils of Slaughter Pigs from Different Housing Systems in Croatia	Foods 2022-05-18 | Journal article DOI: 10.3390/foods11 101459 Part of ISSN: 2304-8158
3.	Besart Jashari; Karine Capitaine; Bledar Bisha; Beatrix Stessl; Katerina Blagoevska; Armend Cana; Dean Jankuloski; Benjamin Félix	Molecular Characterization of Listeria monocytogenes in the Food Chain of the Republic of Kosovo from 2016 to 2022	Foods 2024-09-12 | Journal article DOI: 10.3390/foods13 182883

		4.	Dafina Mehmetukaj; Xhavit Bytyçi; Armend Cana; Vlora Gashi-Zogëjani; Malbora Shandro-Zeqiri; Drita Bajraktari; Dean Jankuloski; Zehra Hajrulai-Musliu	Presence of Soya in Industrial and Homemade Sausage Production in Kosovo and Its Reflection on Fatty Acid Profile	Separations 2024-10-21 | Journal article DOI: 10.3390/separations11100302
		5.			
	10.2.	Participation in national and international scientific research projects (maximum 5)			
		No	Role in the project (project manager or participant)	Title	Time duration of the project The institution from which everything is organized, financed, implemented
		1.	Member	Integrated Radiometric and Complementary Techniques for MixedContaminants and Residues in Food.	IAEA (17.03.2017-16.03.2022)
		2.	Project Leader	Biomonitoring of Antimicrobial Resistance and Typing of Pathogenic and Commensal Bacteria in Wastewater from Food Production Facilities.	Funded by the "Ss. Cyril and Methodius" University in Skopje (Decision No. 02-613/6 dated May 18, 2021).
		3.	Project leader	Antimicrobial Resistance in Commensal Escherichia coli Isolates in the Republic of North Macedonia	Funded by the FVMS (Decision No. 0202-2090/3 dated December 3, 2019).
		4.			
		5.			
	10.3.	Published books in the last five years (maximum 5)			
		No	Author	Title	Publisher / Year

		1.	Prof. Dr. Romel Velev, Assoc. Prof. Dr. Golubinka Boshevska, Prof. Dr. Elena Trajkovska Dokić, Prof. Dr. Dean Jankuloski, Assist. Prof. Dr. Gordana Mirčevska, M.Sc. Ljupčo Angelovski	Handbook for Surveillance of Antimicrobial Resistance in *Campylobacter* spp.;	Faculty of veterinary medicine-Skopje, CIP – Cataloging in Publication National and University Library "St. Clement of Ohrid," Skopje 579.835.12.017.4 :615.33(035) 615.33.015.8:579 .835.12(035), ISBN 978-9989-774-35-5, COBISS.MK-ID 56030725.
		2.			
		3.			
		4.			
		5.			
	10.4.	Published professional papers in the last five years (maximum 5)			
		No	Author	Title	Publisher / Year
		1.	Biljana Stojanovska-Dimzoska, Elizabeta Dimitrieska-Stojkovic, Zehra Hajrulai-Musliu, Risto Uzunov, Aleksandra Angeleska, Dean Jankuloski, Katerina Blagoevska	DETERMINATION OF AFLATOXINS AND OCHRATOXIN A IN ANIMAL LIVER USING HPLC-FD METHOD WITH IMMUNOAFFINITY COLUMN CLEAN-UP	Mac Vet Rev 2021; 44 (2): 119-127,https://doi.org/10.2478/macvetrev-2021-0017
		2.	Ljupco Angelovski, Zagorka Popova, Katerina Blagoevska, Sandra Mojsova, Marija Ratkova Manovska, Mirko Prodanov, Dean Jankuloski, Pavle Sekulovski,	ISOLATION RATE OF CAMPYLOBACTER SPP. AND DETECTION OF VIRULENCE GENES OF CAMPYLOBACTER YEYUNI ACROSS THE BROILER CHAIN	Mac Vet Rev 2021; 44 (2): 149-157.
		3.	Marija Ratkova Manovska, Mirko Prodanov, Ljupcho Angelovski, Dean Jankuloski, Pavle Sekulovski	PREVALENCE OF THE ENTEROTOXIGENIC STAPHYLOCOCCUS AUREUS STRAINS ISOLATED FROM RAW MILK AND CHEESE PRODUCED IN NORTH MACEDONIA	Mac Vet Rev 2021; 44 (1): 71-77

		4.	Nevijo Zdolec, Dean Jankuloski, Marta Kiš, Brigita Hengl and Nataša Mikulec	Detection and Pulsed-Field Gel Electrophoresis Typing of Listeria monocytogenes Isolates from Milk Vending Machines in Croatia	Beverages 2019, 5, 46; doi:10.3390/beverages5030046www.mdpi.com/journal/beverage.
		5.			
		6.			
11.	Mentoring undergraduate, postgraduate and doctoral students				
	11.1.	Diploma works		5	
	11.2.	Master theses		/	
	11.3.	Doctoral dissertations		1	
12.	For mentors of PhD studies, selected results in the last four/five years				
	12.1.	Evidence of printed scientific papers in international scientific journals in the field (maximum 6) in the last five years			
		1.	Maksud Kerluku; Marija Ratkova Manovska; Mirko Prodanov; Biljana Stojanovska-Dimzoska; Zehra Hajrulai-Musliu; Dean Jankuloski; Katerina Blagoevska	Phenotypic and Genotypic Analysis of Antimicrobial Resistance of Commensal Escherichia coli from Dairy Cows' Feces	Processes 2023-06 | Journal article | Author DOI: 10.3390/pr11071929:
		2.			
		3.			
		4.			
		5.			
	12.2.	Evidence of at least two printed scientific papers in scientific journals with impact factor in field in the last five years			
		No	Author	Title	Publisher / Year
			Zehra Hajrulai Musliu, Risto Uzunov, Stefan Jovanov, Dean Jankuloski, Velimir Stojkovski, Lazo Pendovski and James Jacob Sasanya	A new LC–MS/MS method for multiple residues/contaminants in bovine meat	BMC Chemistry (2021) 15:62 https://doi.org/10.1186/s13065-021-00788-5

			E. Dimitrieska-Stojkovikj, A. Angeleska, B. Stojanovska-Dimzoska, Z. HajrulaiMusliu ,D. Koceva, R. Uzunov, G. Ilievska, G. Stojković, D. Jankuloski	Acrylamide Content in Food Commodities Consumed in North Macedonia and Its Risk Assessment in the Population		Journal of Food Quality and Hazards Control 6 (2019) 101-108. DOI: 10.18502/jfqhc.6.3.1383
	12.3.	Evidence of at least three participations on international meetings in last five years				
		No.	Author	Title	International meeting/ conference	Year
			Deaj Jankuloski	"Molecular Characterization of Foodborne Pathogens" at the 7th Congress on Veterinary Education and Science	Zagreb, Croatia	2017
			Dean Jankuloski	"Establishing a Molecular Foodborne Pathogens Database at the National Level and Sharing Information with Other PFGE Surveillance Networks"	59th International Meat Industry Conference, Serbia	2017
			Dean Jankuloski	Antibiotic use in food producing animals: the rise of antimicrobial resistance and current status in the fight against AMR	VII Congress of Macedonian Microbiologists with international participation	2024

No: 18		**Data for teaching staff and mentors of 3rd cycle of studies (PhD)**		
1.	Name and surname	**Trpe Ristoski**		
2..	Date of birth	02.04.1971		
3.	Level of education	VIII		
4.	Title of teaching-scientific, teaching-professional, teaching, scientific and associate titles	PhD, Doctor of Veterinary sciences Full professor		
5.	Data on completed	Education	Year	Institution

	education, i.e. acquired academic and scientific degrees	High education	1995	Faculty of veterinary medicine-Skopje, Ss. Cyril and Methodius University in Skopje
		Master studies	1999	Faculty of Veterinary Medicine, University of Belgrade
		Doctoral studies	2006	Faculty of Veterinary Medicine, University of Belgrade
6.	Area, field and area of the scientific degree master's studies	Area	Field	Discipline
		4 Agricultural and veterinary sciences	4.03 Veterinary sciences	4.03.00.07 Pathomorphology and forensic veterinary medicine
7.	Field, field and area of the scientific degree Doctor of Science with the corresponding code number of the scientific field of the doctorate thesis according to the International Frascati Classification of 2015 and relevant domestic acts that determine the scientific research fields of the third level - areas	Area	Field	Discipline
		4 Agricultural and veterinary sciences	4.03 Veterinary sciences	4.03.00.07 Pathomorphology and forensic veterinary medicine
8.	If he/she is employed, name of the institution where he/she works, title and scientific field in which he/she was elected, according the appropriate code number of the International Frascati Classification from 2015 and relevant domestic acts that determines the scientific research fields of the third level - fields	Institution	Title in which he was elected	Scientific field
		Faculty of veterinary medicine-Skopje, Ss. Cyril and Methodius University in Skopje	Full Professor	Pathological morphology (40708) Forensic veterinary medicine (40732)

9.	List of courses that the teacher leads separately for the first, second and third cycle of studies			
	9.1.	List of courses taught by the teacher in the first cycle of studies		
		No	Course program title	Study program / Institution
		1.	Basic Pathology	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
			Special Veterinary Pathology	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje

		2.	Forensic Veterinary Medicine and Veterinary Ethics	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		3.	Oncology	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		4.	Dermatopathology	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		5.		
		6.		
	9.2.	List of courses taught by the teacher in the second cycle of studies		
		No	Course program title	Study program / Institution
		1.		
		2.		
		3		
		4		
	9.3.	List of courses taught by the teacher in the third cycle of studies		
		No	Course program title	Study program / Institution
		1.	Pathological morphology	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje
		2.	Forensic veterinary medicine and veterinary medicine Ethics	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje
		3	Oncology	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje
		4	Dermatopathology	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje
10	Selected results in the last five years			
	10.1	Relevant published scientific papers (maximum 5)		
		No	Author	Title	Publisher / Year
		1.	Nešić Sladjan, Vučićević Ivana, Marinković Darko, Kukolj Vladimir, Aničić Milan, Ristoski Trpe, Nikolić Sonja, Aleksić Kovačević Sanja	*Histochemical characteristics and distribution of lipofuscin and polyglucosan bodies in the brain of dogs more than 10 years old*	Veterinarski Glasnik, 75 (1), 57-68, 2021
		2.	A. Ivanoska-Dacikj, G. Bogoeva-Gaceva, A. Krumme, E. Tarasova, C. Scalera, V. Stojkovski, I. Gjorgoski, T. Ristoski	*Biodegradable polyurethane/graphene oxide scaffolds for soft tissue engineering: in vivo behavior assessment*	International Journal of Polymeric Materials and Polymeric Biomaterials, Volume 69, 2020 - Issue 17, 2020

		3.	Todor NOVAKOV1*, Ivica GJUROVSKI1, Spiro BOZINOSKI1, Aleksandar JANEVSKI1, Elena ATANASKOVA PETROV1, Slavica KOSTADINOVA KUNOVSKA2, Trpe RISTOSKI1	*Markers involved in proinflammatory effects by environmental toxicants.*	Toxicology Mechanisms and Methods, Volume 30, 2020 - Issue 8, 2020
		4.	Ivica Gjurovski, Monika Dovenska, Slavica Kostadinova Kunovska,Jordanco Milosevski, Vesna Levajkovic Trajkov, Trpe Ristoski	*Mammary adenocarcinoma with widespread metastasis in a lion (PANTHERA LEO)*	Macedonian Veterinary Review, Volumen 42 (2): 1-9, 2019
		5.	Tanja Petreska Ivanovska, Kristina Mladenovska, Zoran Zhivikj, Maja Jurhar Pavlova, Ivica Gjurovski, Trpe Ristoski, Lidija Petrushevska-Tozi	*Synbiotic loaded chitosan-Ca-alginate microparticles reduces inflammation in the TNBS model of rat colitis*	International Journal of Pharmaceutics, Volume 527, Issues 1–2, 15 July 2017, Pages 126-134
	10.2.	Participation in national and international scientific-research projects (maximum 5)			
		No	Role in the project (project manager or participant)	Title	Time duration pf the project The institution from which everything is organized, financed, implemented
		1.	Coordinator	*Application of immunohistochemical method in diagnostics of viral diseases in pets*	2020/2022 University of St. Cyril and Methodius - Skopje, Faculty of Veterinary Medicine-Skopje
		2.	Coordinator	Mir-17-3p Contributes to Exercise-Induced Physiological Hypertrophy	Bilateral project of the Ministry of Education and Science of R. Macedonia and the Ministry of Education and Science of R. China, 2015-2017.

		3.	Participant	*"Non-enzymatic reduction of oxidative stress in chemotherapy-induced oral mucositis - animal model",*	*2023-2024 University of St. Cyril and Methodius - Skopje, Faculty of Dentistry – Skopje*
		4.			
		5.			
	10.3	Published books in the last five years (maximum 5)			
		No	Author	Title	Publisher / Year
		1.			
		2.			
		3.			
		4.			
		5.			
	10.4	Published professional papers in the last five years (maximum 5)			
		No	Author	Title	Publisher / Year
		1.	Gjurovski Ivica, Slavica Kostadinova Kunovska, Jordanco Milosevski Vesna Levajkovic – Trajkov, Ristoski Trpe	*Facial myxofibrosarcoma in a lion (PANTERA LEO)*	Joint ESVP and ECVP Congress, 25-28 September, 2019, Arnhem, The Netherlands
		2.	Gjurovski, M. Dovenska, A. Janevski, T. Ristoski	*Poisoning of dog in the Republic of Macedonia – patomorphological changes and the impact on the animal welfare*	Macedonian Veterinary Review, Volumen 41 (2): 203-207, 2018
		3.	Piret Hussar, Tõnu Järveots, Lazo Pendovski, Katerina Blagoevska, Trpe Ristoski, Florina Popovska-Percinic	*T-2 mycotoxin induced apoptosis in broiler's liver tissue*	Papers on Anthropology XXVII/1, 2018, pp. 9–16, 2018
		4.	T. Ristoski and I. Gjurovski	*Histopathology Examination in Relation to Poison Typing in Poisoned Dog*	Joint ESVP and ECVP Congress, 05-08 September, Cluj-Napoca, Romania, 2018
		5.			
		6.			
11	Mentoring undergraduate, postgraduate and doctoral students				
	11.1	Diploma works		2	
	11.2	Master theses			
	11.3	Doctoral dissertations		1	
12.	For mentors of PhD studies, selected results in the last four/five years				
	12.1	Evidence of printed scientific papers in international scientific journals in the field (maximum 6) in the last five years			
		No	Author	Title	Publisher / Year
		1.			
		2.			

		3.			
		4.			
		5.			
		6.			
	12.2	Evidence of at least two printed scientific papers in scientific journals with impact factor field in the last five years			
		No	Author	Title	Publisher / Year
		1.	Todor Novakov, Ivica Gjurovski, Spiro Bozinovski, Aleksandar Janevski, Nikola Adamov, Trpe Ristoski	IMMUNOHISTOCHEMICAL DETECTION OF CD3 AND MAC387 ANTIBODIES IN THE MESENTERIC LYMPH NODES AND THE SMALL INTESTINE OF 20 DOGS THAT DIED OF CANINE PARVOVIRAL ENTERITIS	Mac Vet Rev 2024; 47 (1): i-vi
		2.	Ivica Gjurovski, Spiro Bozinovski, Emilija Murdzevska, Todor Novakov, Mehmet Fatih Bozkurt,Trpe Ristoski1	IMMUNOHISTOCHEMICAL DIAGNOSTIC CHARACTERISTICS OF PARVOVIRUS INFECTION IN DOGS	Mac Vet Rev 2023; 46 (2): i-vi
	12.3	Evidence of at least three participations on international meetings in last five years			
		No.	Author	Title	International meeting/ conference	Year
		1.	*Trpe Ristoski, Mehmet Fatih Bozkurt, Ivica Gjurovski, Spiro Bozinoski, Aleksandar Janevski*	*"Metastatic pancreatic adenocarcinoma" 9th International scientific meeting*	*Days of Veterinary Medicine, Ohrid.*	*2022*
		2.	*Gjurovski Ivica, Slavica Kostadinova Kunovska, Jordanco Milosevski, Vesna Levajkovic-Trajkov, Ristoski Trpe.*	*"Facial Myxofibrosarcoma in a lion (Pantera Leo)"*	*Joint Congress of Veterinary Clinical Pathology (ECVP/ECVCP Congress),*	*September 25-28.2019 in Arnhem, the Netherlands*

No: 19		**Data for teaching staff and mentors of 3rd cycle of studies (PhD)**
1.	Name and surname	**Aleksandar Dodovski**
2..	Date of birth	22.07.1975
3.	Level of education	VIII
4.	Title of teaching-	PhD, Doctor of Biotechnical sciences

	scientific, teaching-professional, teaching, scientific and associate titles	Full professor		
5.	Data on completed education, i.e. acquired academic and scientific degrees	Education	Year	Institution
		Higher education	2000	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje
		Master studies	2007	Faculty of veterinary medicine, University in Belgrade
		Doctoral studies	2013	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje
6.	Area, field and area of the scientific degree master's studies	Area	Field	Discipline
		4 Agricultural and veterinary sciences	4.03 Veterinary sciences	4.03.00.11 Poultry diseases
7.	Field, field and area of the scientific degree Doctor of Science with the corresponding code number of the scientific field of the doctorate thesis according to the International Frascati Classification of 2015 and relevant domestic acts that determine the scientific research fields of the third level - areas	Area	Field	Discipline
		4 Agricultural and veterinary sciences	4.03 Veterinary sciences	4.03.00.11 Poultry diseases
8.	If he/she is employed, name of the institution where he/she works, title and scientific field in which he/she was elected, according the appropriate code number of the International Frascati Classification from 2015 and relevant domestic acts that determines the scientific research fields of the third level - fields	Institution	Title in which he was elected	Scientific field
		Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje	Full Professor	4.03 Veterinary sciences
9.	List of courses that the teacher leads separately for the first, second and third cycle of studies			
	9.1.	List of courses taught by the teacher in the first and second cycle of studies		
		No / Course program title	Study program / Institution	

		1.	Avian Diseases	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje	
		2.	Poultry Production Technology Processes	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje	
		3.	Husbandry and Diseases in Non-poultry Avian Species	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje	
		4.	Pet Bird Husbandry and Diseases	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje	
	9.2.	List of courses taught by the teacher in the third cycle of studies			
		No	Course program title	Study program / Institution	
		1.	Technology and noninfectious diseases in commercial poultry	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje	
		2.	Viral disease of poultry	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje	
		3.	Bacterial disease of poultry	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje	
		4.	Parasitic and fungal diseases of poultry	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje	
		5.	Epizootiology of infectious diseases of poultry in Macedonia with principles of prevention	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje	
10.	Selected results in the last five years				
	10.1.	Relevant published scientific papers (maximum 5)			
		No	Author	Title	Publisher / Year
		1.	Aleksandar **Dodovski**, Vladimir Savić	*An outbreak of infectious laryngotracheitis virus in Commercial layers: three-month observation of mortality, virus and antibody dynamics*	*Mac Vet Rev* 2024; 47 (2): i-xii https://doi.org/10.2478/macvetrev-2024-0019
		2.	Sha, Yuxin, Weiwen Yan, Xinxin Liu, Haoran Chai, Jianjun Chen, Hongjin Li, Mengjun Wang, Yongning Ren, Hongli Li, Yifei Liu, Tobias Stoeger, Abdul Wajid, **Aleksandar Dodovski**, Chao Gao, Claro N. Mingala, Dmitry B. Andreychuk & Renfu Yin	*The First Report and Biological Characterization of Avian Orthoavulavirus 16 in Wild Migratory Waterfowl and Domestic Poultry in China Reveal a Potential Threat to Birds*	*Avian Pathology*, July, 1–10. doi:10.1080/03079457.2024.2373366

		3.	Cana A, Zecchin B, Merovci X, Fusaro A, Giussani E, Heta S, Krstevski K, Mehmetukaj D, Goga I, Hulaj B, Murati B, Terregino C, and **Dodovski A**	*Emergence and Persistent Circulation of Highly Pathogenic Avian Influenza Virus A (H5N8) in Kosovo, May 2021–May 2022*	*Microorganisms*. 2023; 11(9):2226. https://doi.org/10.3390/microorganisms11092226
		4.	A Fortin, A Laconi, I Monne, S Zohari, K Andersson, C Grund, M Cecchinato, M Crimaudo, V Valastro, V D'Amico, A Bortolami, M Gastaldelli, M Varotto, A Abdelrahman, N Amarin, MB Abubakar, R Belayneh, Y Bokpè Cyprien, V Christodoulou, I Chvala, **A Dodovski**, SA Ghafouri, M Giasuddin, M Hassan, A Kammon, I Shittu, CJ Snoeck, M Steensel, D Suarez, MK Torchetti, SM Tshipambe, LH Ouermi Zerbo, C Terregino, V Panzarin	*A novel array of real-time RT-PCR assays for the rapid pathotyping of type I avian paramyxovirus (APMV-1)*	Journal of Virological Methods,322, 2023, 114813,https://doi.org/10.1016/j.jviromet.2023.114813.
		5.	Cheng S, Liu X, Mu J, Yan W, Wang M, Chai H, Sha Y, Jiang S, Wang S, Ren Y, Gao C, Ding Z, Stoeger T, Tseren-Ochir EO, **Dodovski A** , Alfonso P, Mingala CN, and Yin R	*Intense Innate Immune Responses and Severe Metabolic Disorders in Chicken Embryonic Visceral Tissues Caused by Infection with Highly Virulent Newcastle Disease Virus Compared to the Avirulent Virus: A Bioinformatics Analysis*	Viruses 14, 911, 2022, doi.org/10.3390/v14050911
	10.2.	Participation in national and international scientific-research projects (maximum 5)			
		No	Role in the project (project manager or participant)	Title	Time duration of the project The institution from which everything is organized, financed, implemented
		1.	Project manager	*Monitoring, morphological and molecular identification and phylogenetic characterization of the red mite (Dermanyssus gallinae) in poultry farms in Republic of Macedonia*	2018-2020, Faculty of Veterinary Medicine – Skopje
		2.	Project manager	*Surveillance and molecular epidemiology of avian paramyxoviruses and avian influenza viruses in China and Macedonia*	2019-2021, Ministry od Education and Science

		3.	Participant	*Biosecurity Enhanced Through Training Evaluation and Raising Awareness (BETTER), CA 20103*	2021-2025, COST Action
		4.	Participant	*European Swine Influenza Network (ESFLU), CA 21132*	2022-2026, COST Action
		5.	Participant	*Genetic diversity of swine influenza A viruses and their implications for intensive pig production and public health, national project*	2023-2025, Faculty of Veterinary Medicine – Skopje
	10.3.	Published books in the last five years (maximum 5)			
		No	Author	Title	Publisher / Year
		1.	Dodovski A, Galoski I	*Biology and pathology of birds*	Ministry of Science and Education, 2023
		2.	Kjosevski M, Angjelovski B, **Dodovski A**, Janevski A, Krstevski K, Djadjovski I	*Management of biosecurity and biosecurity measures in farms for dairy cows*	Faculty of Veterinary Medicine, 2021
		3.	Grimes, F., Kocevski, D., Dimitrievski, D., Martinovska, A., Gjoshevski, D., Simonovska, A., Nacka, M., Stamenkovska, I.J., Pejkovski, Z., Dzabirski, V., Srbinovska, S., Gjeorgjievski, S., **Dodovski, A.**, Dimitrovski, V., Buzharovska, D.	*Sustainable broiler production in Macedonia – A value chain guide to best practice*	Food and Agriculture Organization of the United Nations (FAO) Budapest, 2019, ISBN 978-92-5-132055-6
	10.4.	Published professional papers in the last five years (maximum 5)			
		No	Author	Title	Publisher / Year
		1.	**Dodovski A.**, Angelovski Lj.	Salmonella control in the poultry industry - Macedonian experience	Zivinarstvo, god. LVI, br.7-8.2022, ISSN 0354-4036
11.	Mentoring undergraduate, postgraduate and doctoral students				
	11.1.	Diploma works			Intradermal tuberculization test as a tool for diagnostics and control of avian tuberculosis, 2024
	11.2.	Doctoral dissertations			Identifying indicators of animal behavior and establishing animal hygiene standards from the aspect of animal welfare, 2020
12.	For mentors of PhD studies, selected results in the last four/five years				
	12.1.	Evidence of printed scientific papers in international scientific journals in the field (maximum 6) in the last five years			
		No	Author	Title	Publisher / Year

		1.	Aleksandar **Dodovski**, Vladimir Savić	*An outbreak of infectious laryngotracheitis virus in Commercial layers: three-month observation of mortality, virus and antibody dynamics*	*Mac Vet Rev* 2024; 47 (2): i-xii https://doi.org/10.2478/macvetrev-2024-0019
		2.	Sha, Yuxin, Weiwen Yan, Xinxin Liu, Haoran Chai, Jianjun Chen, Hongjin Li, Mengjun Wang, Yongning Ren, Hongli Li, Yifei Liu, Tobias Stoeger, Abdul Wajid, **Aleksandar Dodovski**, Chao Gao, Claro N. Mingala, Dmitry B. Andreychuk & Renfu Yin	*The First Report and Biological Characterization of Avian Orthoavulavirus 16 in Wild Migratory Waterfowl and Domestic Poultry in China Reveal a Potential Threat to Birds*	*Avian Pathology*, July, 1–10. doi:10.1080/03079457.2024.2373366
		3.	Cana A, Zecchin B, Merovci X, Fusaro A, Giussani E, Heta S, Krstevski K, Mehmetukaj D, Goga I, Hulaj B, Murati B, Terregino C, and **Dodovski A**	*Emergence and Persistent Circulation of Highly Pathogenic Avian Influenza Virus A (H5N8) in Kosovo, May 2021–May 2022*	*Microorganisms*. 2023; 11(9):2226. https://doi.org/10.3390/microorganisms11092226
		4.	A Fortin, A Laconi, I Monne, S Zohari, K Andersson, C Grund, M Cecchinato, M Crimaudo, V Valastro, V D'Amico, A Bortolami, M Gastaldelli, M Varotto, A Abdelrahman, N Amarin, MB Abubakar, R Belayneh, Y Bokpè Cyprien, V Christodoulou, I Chvala, **A Dodovski**, SA Ghafouri, M Giasuddin, M Hassan, A Kammon, I Shittu, CJ Snoeck, M Steensel, D Suarez, MK Torchetti, SM Tshipambe, LH Ouermi Zerbo, C Terregino, V Panzarin	*A novel array of real-time RT-PCR assays for the rapid pathotyping of type I avian paramyxovirus (APMV-1)*	Journal of Virological Methods,322, 2023, 114813,https://doi.org/10.1016/j.jviromet.2023.114813.
		5.	**Dodovski A**., Celeska I., Mojsova S., Angelovski Lj., Kjosevski, M	*Trials on the Addition of Saccharomyces cerevisiae boulardii and its' Effects in Broilers*	Proceedings 6th Poultry Meat Congress, Antalya, Turkey, 1-5.3.2023

		6.	Cheng S, Liu X, Mu J, Yan W, Wang M, Chai H, Sha Y, Jiang S, Wang S, Ren Y, Gao C, Ding Z, Stoeger T, Tseren-Ochir EO, **Dodovski A** , Alfonso P, Mingala CN, and Yin R	*Intense Innate Immune Responses and Severe Metabolic Disorders in Chicken Embryonic Visceral Tissues Caused by Infection with Highly Virulent Newcastle Disease Virus Compared to the Avirulent Virus: A Bioinformatics Analysis*	Viruses 14, 911, 2022, doi.org/10.3390/v14050911	
	12.2.	Evidence of at least two printed scientific papers in scientific journals with impact factor in the field in the last five years				
		No	Author	Title	Publisher / Year	
		1.	Aleksandar **Dodovski**, Vladimir Savić	*An outbreak of infectious laryngotracheitis virus in Commercial layers: three-month observation of mortality, virus and antibody dynamics*	*Mac Vet Rev* 2024; 47 (2): i-xii https://doi.org/10.2478/macvetrev-2024-0019	
		2.	Sha, Yuxin, Weiwen Yan, Xinxin Liu, Haoran Chai, Jianjun Chen, Hongjin Li, Mengjun Wang, Yongning Ren, Hongli Li, Yifei Liu, Tobias Stoeger, Abdul Wajid, **Aleksandar Dodovski**, Chao Gao, Claro N. Mingala, Dmitry B. Andreychuk & Renfu Yin	*The First Report and Biological Characterization of Avian Orthoavulavirus 16 in Wild Migratory Waterfowl and Domestic Poultry in China Reveal a Potential Threat to Birds*	*Avian Pathology*, July, 1–10. doi:10.1080/03079457.2024.2373366	
	12.3.	Evidence of at least three participations on international meetings in last five years				
		No.	Author	Title	International meeting/ conference	Year
		1.	Cheng S, Liu X, Mu J, Yan W, Wang M, Chai H, Sha Y, Jiang S, Wang S, Ren Y, Gao C, Ding Z, Stoeger T, Tseren-Ochir EO, **Dodovski A** , Alfonso P, Mingala CN, and Yin R	*A comparative study of epigenetic and pathogenesis mechanisms between the virulent and avirulent strains of Newcastle disease viruses using bioinformatics analysis*	XVI European Poultry Conference, Valencia, Spain	2024

		2.	**Dodovski A**., Celeska I., Mojsova S., Angelovski Lj., Kjosevski, M.	*Trials on the addition of Saccharomyces cerevisiae boulardii and its' effects in broilers,*	6th Poultry Meat Congress, Antalya	2023
		3.	**Aleksandar Dodovski**, Irena Celeska, Sandra Mojsova, Ljupco Angelovski, Miroslav Kjosevski	*Effects of addition of Saccharomyces cerevisiae boulardii on multiple parameters on broiler health and productivity*	7th Mediterranean Poultry Summit, Cordoba, Spain	2022

No: 20	**Data for teaching staff and mentors of 3rd cycle of studies (PhD)**			
1.	Name and surname	**Elena Davitkovska**		
2..	Date of birth	18.03.1984		
3.	Level of education	VIII		
4.	Title of teaching-scientific, teaching-professional, teaching, scientific and associate titles	PhD, Doctor of Law Full professor		
5.	Data on completed education, i.e. acquired academic and scientific degrees	Education	Year	Institution
		Higher education	2002 - 2006	Faculty of Law "Iustinianus Primus" Skopje University Ss. Cyril and Methodius, Skopje
		Master studies	2006 - 2009	Faculty of Law "Iustinianus Primus" Skopje University Ss. Cyril and Methodius, Skopje
		Doctoral studies	2009 - 2012	Faculty of Law "Iustinianus Primus" , Skopje University Ss. Cyril and Methodius, Skopje
6.	Area, field and area of the scientific degree master's studies	Area	Field	Discipline
		Humanities	Legal studies	Administrative Law
7.	Field, field and area of	Area	Field	Discipline

	the scientific degree Doctor of Science with the corresponding code number of the scientific field of the doctorate thesis according to the International Frascati Classification of 2015 and relevant domestic acts that determine the scientific research fields of the third level - areas		Humanities	Legal studies	Administrative Law
8.	If he/she is employed, name of the institution where he/she works, title and scientific field in which he/she was elected, according the appropriate code number of the International Frascati Classification from 2015 and relevant domestic acts that determines the scientific research fields of the third level - fields		Institution	Title in which he was elected	Scientific field
			Faculty of Veterinary Medicine, Ss. Cyril and Methodius University in Skopje	Full professor	???
9.	List of courses that the teacher leads separately for the first, second and third cycle of studies				
	9.1.	List of courses taught by the teacher in the first cycle of studies			
		No	Course program title		Study program / Institution
		1.	Veterinary Administrative Procedures		Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		2.	Administrative Procedure in Veterinary Activities		Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		3.			
		4.			
		5.			
		6.			
	9.2.	List of courses taught by the teacher in the second cycle of studies			
		No	Course program title		Study program / Institution
		1.			
		2.			
	9.3.	List of courses taught by the teacher in the third cycle of studies			
		No	Course program title		Study program / Institution
		1.			
		2.			
10.	Selected results in the last five years				
	10.1.	Relevant published scientific papers (maximum 5)			
		No	Author	Title	Publisher / Year

		1.	Majovski, I., Davitkovska, E. & Miloshevik, V.,	*"Recruitment and selection methods in SMEs in Republic of North Macedonia",*	Economic Development, Year 23 No.3/2020
		2.	Davitkovska E., Sumanovska-Spasovska I., Goceva V.,	*"Realization of legal protection against acts passed by criminal authorities"*	Macedonian review of criminal law and criminology, publisher: Association for criminal law and criminology of Macedonia, ISSN 1409- 5327 (year 29, no. 1-2, 2022) http://maclc.mk/publicationyear/18
		3.	Davitkovska, E., Shumanovska-Spasovska, I. & Piperkova, I.,	*"The principle of efficiency in administrative procedure – dilemmas and challenges",*	Economic Development, Year 24, No.1/2022, 2022, pp.190-202 https://www.ek-inst.ukim.edu.mk/wp-content/uploads/2022/07/ED-year-24-no-1-2022-v.3-4-1.pdf
		4.	Piperkova, I., Popovski, V. & Davitkovska, E.,	*The impact of economic downturn on human resource policies in small businesses: the case of North Macedonia"*	Economic Development, Year 24, No.2/2022, 2022, pp.106-121 https://www.ek-inst.ukim.edu.mk/wp-content/uploads/2022/10/8.-106-121-from-ED-year-25-no-2-2022-v.2-11.pdf
		5.	Irina Piperkova, Elizabeta Djambaska, Aleksandra Lozanoska, Elena Davitkovska	*Main HR challenges for small businesses in republic of North Macedonia: a qualitative research*	Economic Development, Year 26, No.1/2024, 2024, pp.102-112 chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://www.ek-inst.ukim.edu.mk/wp-content/uploads/2024/07/MAIN-HR-CHALLENGES-FOR-SMALL-BUSINESSES-IN-REPUBLIC.pdf
	10.2.	Participation in national and international scientific-research projects (maximum 5)			
		No	Role in the project (project manager or participant)	Title	Time duration pf the project The institution from which everything is organized, financed, implemented
		1.	Participant	*Opportunities for applying the concept of green economy in SMEs in the Republic of North Macedonia*	UKIM, Institute of Economics-Skopje, 2020
		2.	Participant	Socio-economic indicators and quality of life in the Republic of North Macedonia"	Institute of Economics-Skopje, Ss. Cyril and Methodius 2019
		3.	Participant	*"Identification of employee competencies for competitiveness and sustainability of SMEs in the Republic of Macedonia"*	UKIM, 2019
		4.			
		5.			
	10.3.	Published books in the last five years (maximum 5)			
		No	Author	Title	Publisher / Year

		1.	Majovski I., Lozanovska A., Davitkovska E.,	*"Determinants of employee skills' level and utilization in SMEs in the Republic of North Macedonia"*	in Business Threats and Opportunities in the Western Balkans, Cambridge Scholars Publishing, 2021, pp.1-19
		2.	Davitkovska E.,	*Administrative Veterinary*	UKIM Bulletin, No. 1245 of 15.09.2021
		3.	Davitkovska E., Shumanovska-Spasovska, I.	Administrative Procedures	UKIM Bulletin, No. 1247 of 15.10.2021
		4.			
		5.			
	10.4.	Published professional papers in the last five years (maximum 5)			
		No	Author	Title	Publisher / Year
		1.	Shumanovska - Spasovska I., Davitkovska E.,	*SIGNIFICANCE OF THE CONSISTENCY OF COURT DECISIONSIN ADMINISTRATIVE DISPUTE,*	International Scientific Conference TIKVESH DAYS OF LAW, Rule of the law or rule of politics: current issues in legislation and judicial practice , 27-29 Octobar 2023, Negotino
		2.	Davitkovski B., Davitkovska E., Shumanovska-Spasovska I., Piperkova I.	*The Law on Administrative Disputes from 2019 between the norm and reality*	8th International Scientific Conference OHRID SCHOOL OF LAW "The role and meaning of the co-focus of law in modern legislation" Institute for Legal-Economic Research and Education (8-th International Scientific Conference OHRID SCHOOL OF LAW - 2021 „Codification of the Law: Its Role and significance in the Contemporary Legislations“)12-15 May Ohrid 2022,pp27-49
		3.	B. Davitkovski, E. Davitkovska, I. Šumanovska-Spasovska	*New law on administrative dispute as guarantee of legal protection of human rights*	Association of Lawyers of the Republic of Srpska, Pravna riječ - magazine for legal theory and practice, No. 66/2022, Year XIX, ISSN: 1840-0272, Banja Luka, 2022, pp. 75-95
		4.	Davitkovska E., Majovski I.,	*'The development of Macedonian administration in the last 30 years'*	7th International Scientific Conference Ohrid School of Law – 2021 "Reforms in law: Reality or unfulfilled wish" Iuridica prima, Institute for Legal and Economic Research and education, October 21-24, 2021 Ohrid, Book of abstracts, p. 51
		5.	Davitkovska E., Majovski	*"The work of public bodies in the conditions of a COVID 19 pandemic",*	proceedings of the 7th International Scientific Conference "Ohrid School of Law", on the topic: "The future of law: Against the challenges of COVID 19", Iuridica prima, Institute for Legal Economic Research and Education, 22-25 October Ohrid 2020, p. 107-125
		6.			
11.	Mentoring undergraduate, postgraduate and doctoral students				

	11.1.	Diploma works				
	11.2.	Master theses				
	11.3.	Doctoral dissertations				
12.	For mentors of PhD studies, selected results in the last four/five years					
	12.1.	Evidence of printed scientific papers in international scientific journals in the field (maximum 6) in the last five years				
		No	Author	Title	Publisher / Year	
		1.				
		2.				
		3.				
		4.				
		5.				
		6.				
	12.2.	Evidence of at least two printed scientific papers in scientific journals with impact factor in the field in the last five years				
		No	Author	Title	Publisher / Year	
		1.				
		2.				
	12.3.	Evidence of at least three participations on international meetings in last five years				
		No.	Author	Title	International meeting/ conference	Year
		1.				
		2.				

No: 21	**Data for teaching staff and mentors of 3rd cycle of studies (PhD)**			
1.	Name and surname	**Irena Celeska**		
2..	Date of birth	24.05.1976		
3.	Level of education	PhD		
4.	Title of teaching-scientific, teaching-professional, teaching, scientific and associate titles	Full Professor		
5.	Data on completed education, i.e. acquired academic and scientific degrees	Education	Year	Institution
		High education	2002	Faculty of veterinary medicine-Skopje, Ss. Cyril and Methodius University in Skopje
		Master studies	2010	Faculty of veterinary medicine-Skopje, Ss. Cyril and Methodius University in Skopje
		Doctoral studies	2013	Faculty of veterinary medicine-Skopje, Ss. Cyril and Methodius University in Skopje
6.	Area, field and area of the scientific degree master's studies	Area	Field	Discipline
		4 Agricultural and veterinary sciences	4.03 Veterinary sciences	4.03.00.08 Pathophysiology

7.	Field, field and area of the scientific degree Doctor of Science with the corresponding code number of the scientific field of the doctorate thesis according to the International Frascati Classification of 2015 and relevant domestic acts that determine the scientific research fields of the third level - areas	Area	Field	Discipline
		4 Agricultural and veterinary sciences	4.03 Veterinary sciences	4.03.00.08 Pathophysiology
8.	If he/she is employed, name of the institution where he/she works, title and scientific field in which he/she was elected, according the appropriate code number of the International Frascati Classification from 2015 and relevant domestic acts that determines the scientific research fields of the third level - fields	Institution	Title in which he was elected	Scientific field
		Faculty of veterinary medicine-Skopje, Ss. Cyril and Methodius University in Skopje	Full professor	4.03 Veterinary sciences

9.	List of courses that the teacher leads separately for the first, second and third cycle of studies			
	9.1.	List of courses taught by the teacher in the first and second cycle of integrated studies		
		No	Course program title	Study program / Institution
		1.	Pathophysiology 1	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		2.	Pathophysiology 2	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		3.	Veterinary Hematology	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		4.	Basis of Cytological Diagnostics	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		5.	Clinical Pathophysiology	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
	9.2.	List of courses taught by the teacher in the second cycle of studies		
		No	Course program title	Study program / Institution
	9.3.	List of courses taught by the teacher in the third cycle of studies		

		No	Course program title	Study program / Institution	
		1.	Selected topics of pathophysiology	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje	
		2.	Veterinary laboratory medicine	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje	
		3.	Cytological diagnostics	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje	
10.	Selected results in the last five years				
	10.1.	Relevant published scientific papers (maximum 5)			
		No	Author	Title	Publisher / Year
		1.	**Irena Celeska**, Martin Nikolovski, Todor Novakov, Anastasija Angelovska, Ivica Gjurovski, Elena Atanaskova Petrov	Retrospective Study on Trilostane Titration Dose Treatment in Dogs with Terminal Stage of Hyperadrenocorticism	*Mac Vet Rev 2024*
		2.	Atanaskova Petrov, E., Kjosevski, M., **Celeska, I**	Evaluation of health related quality of life in dogs treated with chemotherapy for lymphoma.	*Acta Veterinaria Belgrade, 2023*
		3.	Mitrevska E., **Celeska I.,** Kjosevski M., Atanaskova Petrov E	Clinical signs and behaviour in dogs with hypothyroidism.	*Mac Vet Rev 2023*
		4.	B. Atanasov, T. Dovenski, **I. Celeska**, J.S. Stevenson	Luteolysis, progesterone, and pregnancy per insemination after modifying the standard 7-day Ovsynch program in Holstein-Friesian and Holstein cows	*J. Dairy Sci 2021*
		5.	Atanaskova Petrov, E., **Celeska, I**., Popova, Z., Krstevski, K. and Djadjovski I	Molecular Detection of *Ehrlichia canis* in the Pet-Dog Population in RN Macedonia	*Acta Veterinaria Belgrade, 2021*
	10.2.	Participation in national and international scientific-research projects (maximum 5)			
		No	Role in the project (project manager or participant)	Title	Time duration pf the project The institution from which everything is organized, financed, implemented
		1.	participant	COST Action Biosecurity Enhanced Through Training Evaluation and Raising Awareness (BETTER), CA 20103	2021-2025
		2.	participant	– Heavy Ion Therapy Research tion European Union's Horizon 2020 h and innovation programme under greement No 101008548	2022-2028

		3.	Management committee	COST Action CA23107, Network for Evidence Synthesis in The Agri-Food Sector (EU-NESA)	2024-2028
		4.			
		5.			
	10.3.	Published books in the last five years (maximum 5)			
		No	Author	Title	Publisher / Year
		1.	prof. Irena Celeska, prof. Lejla Velić, prof. Kiril Krstevski, prof. Nejra Hadzimusic, MSC Eterovic	Laboratory Procedures and diagnostic Tests of Infectious Diseases in Clinical Practice	2022
		2.	Full prof. Romel Velev, Assoc. prof. Irena Celeska, Assist. Prof. Elena Atanaskova Petrov	Laboratory Methods in Veterinary Medicine	2023
		3.	Full prof. Romel Velev, Assoc. prof. Irena Celeska, Assist. Prof. Elena Atanaskova Petrov	Veterinary Care of Pets	2023
		4.			
		5.			
	10.4.	Published professional papers in the last five years (maximum 5)			
		No	Author	Title	Publisher / Year
		1.	**Irena Celeska**, Martin Nikolovski, Elena Atanaskova Petrov	Disadvantages during Glyco-modulation Process in Diabetic Patients	*Conference Paper, Veterinaria Vol 70 Suppl 1 (2021) 45-50*
		2.	**Todor Novakov, Elena Atanaskova Petrov, Ksenija Ilievska,** Irena Celeska**, Jane Vlahov, Filip Trojacanec, Plamen Trojacanec**	Pre-emptive multimodal analgesia with Morphine-Medetomidine-Ketamine and Acepromazine-Morphine-Ketamine for Ovariohysterectomy in Dogs	*Book of Abstract. 9th International Scientific Meeting, 71p. Days of Veterinary Medicine.* 22-25 September 2022, Ohrid, R. N. Macedonia
		3.	Elena Atanaskova Petrov, Ksenija Ilievska, Todor Novakov, Ljubica Rashik, Igor Djadjovski, Miroslav Kjosevski, **Irena Celeska**	Clinicopathological alterations in pet dogs naturally infected with *Ehrlichia canis* and *Leishmania infantum* in Macedonia – case study	*Book of Abstract. 9th International Scientific Meeting, 117p. Days of Veterinary Medicine.* 22-25 September 2022, Ohrid, R. N. Macedonia
		4.	Elena Mitrevska, **Irena Celeska**, Sara Gjorgjievska, Elena Atanaskova Petrov	Chemotherapy treatment protocols used in multicentric lymphoma in golden retriever: A case report	*Book of Abstract. 9th International Scientific Meeting, 146p. Days of Veterinary Medicine.* 22-25 September 2022, Ohrid, R. N. Macedonia

		5.	Larisa Shakjiri, Elena Atanaskova Petrov, **Irena Celeska**, Goce Atanasovski, Sara Gjorgjievska	Is fPl2 a reliable biochemical marker for diagnosing feline pancreatitis? A case report	*Book of Abstract. 9th International Scientific Meeting, 152p. Days of Veterinary Medicine.* 22-25 September 2022, Ohrid, R. N. Macedonia
		6.			
11.	Mentoring undergraduate, postgraduate and doctoral students				
	11.1.	Diploma works		15 students	
	11.2.	Master theses		1 student	
	11.3.	Doctoral dissertations			
12.	For mentors of PhD studies, selected results in the last four/five years				
	12.1.	Evidence of printed scientific papers in international scientific journals in the field (maximum 6) in the last five years			
		No	Author	Title	Publisher / Year
		1.	Branko Atanasov, Nikola Adamov, **Irena Celeska**, Ksenija Ilievska, Branko Angjelovski, Zvonko Trbogazov, Filip Davkov, Toni Dovenski, Geert Opsomer, Jeffrey Stevenson.	Modification of the Standard 7-day Ovsynch Protocol to Increase the Luteolytic and Synchronization Risks in Dairy Cows.	*Mac Vet Rev*, 2020
		2.	**Celeska, I**., Nikolovski, M. and Petrov, E.A.,	Glycemia as a reliable indicator for diabetes mellitus in dogs and cat	*VETERINARIA, 70, 2021*
		3.	Amela Zukić, Atifa Ajanović, Amina Hrković -Porobija, Lejla Velić, Mirsada Salihović, Irena Celeska	Polyphenols and Their Antioxidant Effect in Beers from the Bosnia and Herzegovina Market	*Journal of Agricultural, Food and Environmental Sciences, 2021*
		4.	Mirsada Dervisevik, Suzana Dinevska-Kjovkarovska, Sasho Panov, Elena Rafailovska, **Irena Celeska**, Biljana Miova	Carbohydrate Metabolism In Diabetic Rat's Heart – The Effects Of Acetylsalicylic Acid And Heat Preconditioning As Hsp70 Inducers.	*Mac Vet Rev* 2022
		5.			
		6.			
	12.2.	Evidence of at least two printed scientific papers in scientific journals with impact factor in the field in the last five years			
		No	Author	Title	Publisher / Year
		1.	B. Atanasov, T. Dovenski, **I. Celeska**, J.S. Stevenson	Luteolysis, progesterone, and pregnancy per insemination after modifying the standard 7-day Ovsynch program in Holstein-Friesian and Holstein cows	*J. Dairy Sci 2021*

		2.	Atanaskova Petrov, E., **Celeska, I**., Popova, Z., Krstevski, K. and Djadjovski I	Molecular Detection of *Ehrlichia canis* in the Pet-Dog Population in RN Macedonia		*Acta Veterinaria Belgrade, 2021*
		3.	Atanaskova Petrov, E., Kjosevski, M., **Celeska, I**	Evaluation of health related quality of life in dogs treated with chemotherapy for lymphoma.		*Acta Veterinaria Belgrade, 2023*
		4.	Mitrevska E., **Celeska I.,** Kjosevski M., Atanaskova Petrov E	Clinical signs and behaviour in dogs with hypothyroidism.		*Mac Vet Rev 2023*
		5.	**Irena Celeska**, Martin Nikolovski, Todor Novakov, Anastasija Angelovska, Ivica Gjurovski, Elena Atanaskova Petrov	Retrospective Study on Trilostane Titration Dose Treatment in Dogs with Terminal Stage of Hyperadrenocorticism		*Mac Vet Rev 2024*
	12.3.	Evidence of at least three participations on international meetings in last five years				
		No.	Author	Title	International meeting/ conference	Year
		1.	**Irena Celeska**, Elena Atanaskova Petrov	Hypothyroidism in dogs as a baseline of different clinical signs and laboratory results	*5th International Congress on Advances in Veterinary Science and Technics (ICAVST), October 3, 2020. 1-2p*, online, Sarajevo, Bosnia and Herzegovina	2020
		2.	Irena Celeska**,** Martin Nikolovski, Todor Novakov, Elena Atanaskova Petrov	Trilostan titration dose treatment in dogs with terminal stage of hyperadrenocorticism complicated with comorbidity disease	*Book of Abstract. 9th International Scientific Meeting, 71p. Days of Veterinary Medicine*. 22-25 September 2022, Ohrid, R. N. Macedonia	2022
		3.	**Celeska Irena**, Atanasov Branko, Velić Lejla, Hadžimusić Nejra, Eterović Toni, Hrković Amina, Kjosevski, Miroslav	Metabolic Adaptation of Imported Asaf Sheep	*Book of Abstract.IV International Symposium for Agriculture and Food - ISAF 16p.* 12-14 October 2022, Ohrid, R. N. Macedonia	2022

No: 22	**Data for teaching staff and mentors of 3rd cycle of studies (PhD)**			
1.	Name and surname	**Kiril Krtsevski**		
2..	Date of birth	19.10.1979		
3.	Level of education	VIII		
4.	Title of teaching-scientific, teaching-professional, teaching, scientific and associate titles	PhD, Doctor of Veterinary sciences Full professor		
5.	Data on completed education, i.e. acquired academic and scientific degrees	Education	Year	Institution
		Higher education	2005	Faculty of veterinary medicine-Skopje, Ss. Cyril and Methodius University in Skopje
		Master studies	2011	Faculty of veterinary medicine-Skopje, Ss. Cyril and Methodius University in Skopje
		Doctoral studies	2015	Faculty of veterinary medicine-Skopje, Ss. Cyril and Methodius University in Skopje
6.	Area, field, and area of the scientific degree master's studies	Area	Field	Discipline
		4 Agricultural and veterinary sciences	4.03 Veterinary sciences	4.03.00.15 Infectious diseases with epidemiology
7.	Field, field, and area of the scientific degree Doctor of Science with the corresponding code number of the scientific field of the doctorate thesis according to the International Frascati Classification of 2015 and relevant domestic acts that determine the scientific research fields of the third-level - areas	Area	Field	Discipline
		4 Agricultural and veterinary sciences	4.03 Veterinary sciences	4.03.00.15 Infectious diseases with epidemiology
8.	If he/she is employed, the name of the institution where he/she works, title, and scientific field in which he/she was elected, according to the appropriate code number of the International Frascati Classification from 2015 and relevant domestic acts that determines the scientific research fields of the third level - fields	Institution	Title in which he was elected	Scientific field
		Faculty of veterinary medicine-Skopje, Ss. Cyril and Methodius University in Skopje	Associate professor	4.03 Veterinary sciences
9.	List of courses that the teacher leads separately for the first, second, and third cycle of studies			
	9.1.	List of courses taught by the teacher in the first cycle of studies		
		No	Course program title	Study program / Institution

		1.	Infectious Diseases in Domestic Animals 1	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje	
		2.	Infectious Diseases in Domestic Animals 2	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje	
		3.	Veterinary Epidemiology	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje	
		4.			
		5.			
		6.			
	9.2.	List of courses taught by the teacher in the second cycle of studies			
		No	Course program title	Study program / Institution	
		1.			
		2.			
		3.			
	9.3.	List of courses taught by the teacher in the third cycle of studies			
		No	Course program title	Study program / Institution	
		1.	Advanced Methodologies in Veterinary Epidemiology	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje	
		2.	Serological Methods in Veterinary Diagnostics	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje	
		3.	Molecular Methods in Veterinary Diagnostics	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje	
		4.			
		5.			
		6.			
10.	Selected results in the last five years				
	10.1.	Relevant published scientific papers (maximum 5)			
		No	Author	Title	Publisher / Year
		1.	Berguido FJ, Chibssa TR, Loitsch A, Liu Y, Krstevski K., Djadjovski I, Tuppurainen E, Petrović T, Vidanović D, Caufour P, Settypalli TBK, Grünwald-Gruber C, Grabherr R, Diallo A, Cattoli G, Lamien CE.	Harnessing Attenuation-Related Mutations of Viral Genomes: Development of a Serological Assay to Differentiate between Capripoxvirus-Infected and -Vaccinated Animals. Viruses	MDPI/2023

		2.	Van Borm S, Dellicour S, Martin DP, Lemey P, Agianniotaki EI, Chondrokouki ED, Vidanovic D, Vaskovic N, Petrovič T, Lazič S, Koleci X, Vodica A, Djadjovski I, Krstevski K., Vandenbussche F, Haegeman A, De Clercq K, Mathijs E	Complete genome reconstruction of the global and European regional dispersal history of the lumpy skin disease virus	ASM/2023
		3.	Berguido FJ, Gelaye E, Liu Y, Davaasuren B, Krstevski K., Djadjovski I, Ivanova E, Goujgoulova G, Loitsch A, Tuppurainen E, Chibssa TR, Caufour P, Samojlovic M, Lazic S, Petrovic T, Vidanovic D, Bertagnoli S, Grabherr R, Diallo A, Cattoli G, Lamien, CE	Development and Optimization of iELISAs for the Detection of Anti-Capripoxvirus Antibodies in Cattle, Sheep and Goat Sera	MDPI/2021
		4.	Vidanovic D, Tesovic B, Sekler M, Debeljak Z, Vaskovic N, Matovic K, Koltsov A, Krstevski K., Petrovice T, De Leeuw I, Haegeman A	Validation of TaqMan-Based Assays for Specific Detection and Differentiation of Wild-Type and Neethling Vaccine Strains of LSDV	MDPI/2021
		5.	Flannery J, King S, Nenow-Rajko P, Popova Z, Krstevski K., Djadjovski I, Batten C	Re-emergence of BTV serotype 4 in North Macedonia	Wiley/2020
	10.2.	Participation in national and international scientific research projects (maximum 5)			

		No	Role in the project (project manager or participant)	Title	Time duration of the project The institution from which everything is organized, financed, implemented
		1.	Participant	Zoonotic Disease Integrated Action/ZODIAC	2021-2026; IAEA
		2.	Participant	EU Regional action on Animal Disease Eradication in the Western Balkans/ADEWB	2020-2022; EC
		3.	Participant	National Platform for Improving Biosecurity in Dairy Cattle Farms / NAPIB	2021; EuFMD/FAO
		4.	Participant	Capacity Building of Veterinary and Plant Health Services in the Western Balkans/ADEWB II	2022-2025; EC
		5.	Participant		
	10.3.	Published books in the last five years (maximum 5)			
		No	Author	Title	Publisher / Year
		1.	Lejla Velić, Toni Eterović, Kiril Krstevski, Pamela Beidic, Nedzad Hadžiomerović, Amel Cutuk, Nejra Hadžimusić	Bakterijske i virusne bolesti pasa i mačaka.	UNSA/2021
		2.	Lejla Velić, Toni Eterović, Kiril Krstevski, Nejra Hadžimusić	Laboratorijske procedure i dijagnostičke pretrage infektivnih bolesti u kliničkoj praksi.	UNSA/2022
		3.			
		4.			
		5.			
	10.4.	Published professional papers in the last five years (maximum 5)			
		No	Author	Title	Publisher / Year
		1.			
		2.			
		3.			
		4.			
		5.			
		6.			
11.	Mentoring undergraduate, postgraduate and doctoral students				
	11.1.	Diploma works		1	
	11.2.	Master theses			
	11.3.	Doctoral dissertations		1	
12.	For mentors of PhD studies, selected results in the last four/five years				
	12.1.	Evidence of printed scientific papers in international scientific journals in the field (maximum 6) in the last five years			

	12.2.	Evidence of at least two printed scientific papers in scientific journals with impact factc field in the last five years				
		No	Author	Title	Publisher / Year	
	12.3.	Evidence of at least three participations on international meetings in last five years				
		No.	Author	Title	International meeting/ conference	Year

No: 23	**Data for teaching staff and mentors of 3rd cycle of studies (PhD)**			
1.	Name and surname	**Igor Dzadzovski**		
2..	Date of birth	19.03.1979		
3.	Level of education	VIII		
4.	Title of teaching-scientific, teaching-professional, teaching, scientific and associate titles	PhD, Doctor of Veterinary sciences Full professor		
5.	Data on completed education, i.e. acquired academic and scientific degrees	Education	Year	Institution
		High education	2004	Faculty of veterinary medicine-Skopje, Ss. Cyril and Methodius University in Skopje
		Master studies	2011	Faculty of veterinary medicine-Skopje, Ss. Cyril and Methodius University in Skopje
		Doctoral studies	2015	Faculty of veterinary medicine-Skopje, Ss. Cyril and Methodius University in Skopje
6.	Area, field, and area of the scientific degree master's studies	Area	Field	Discipline
		4 Agricultural and veterinary sciences	4.03 Veterinary sciences	4.03.00.09 Diseases in farm animals
7.	Field, field, and area of	Area	Field	Discipline

	the scientific degree Doctor of Science with the corresponding code number of the scientific field of the doctorate thesis according to the International Frascati Classification of 2015 and relevant domestic acts that determine the scientific research fields of the third-level - areas	4 Agricultural and veterinary sciences	4.03 Veterinary sciences	4.03.00.09 Diseases in farm animals
8.	If he/she is employed, the name of the institution where he/she works, title, and scientific field in which he/she was elected, according to the appropriate code number of the International Frascati Classification from 2015 and relevant domestic acts that determines the scientific research fields of the third level - fields	Institution	Title in which he was elected	Scientific field
		Faculty of veterinary medicine-Skopje, Ss. Cyril and Methodius University in Skopje	Associate professor	4.03 Veterinary sciences

9. List of courses that the teacher leads separately for the first, second, and third cycle of studies

9.1. List of courses taught by the teacher in the first cycle of studies

No	Course program title	Study program / Institution
1.	Clinical and Laboratory Diagnostics in Farm Animals	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
2.	Internal Diseases in Farm Animals 1	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
3.	Internal Diseases in Farm Animals 2	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
4.		
5.		
6.		

9.2. List of courses taught by the teacher in the second cycle of studies

No	Course program title	Study program / Institution
1.		
2.		
3.		

9.3. List of courses taught by the teacher in the third cycle of studies

No	Course program title	Study program / Institution
1.		
2.		
3.		
4.		
5.		
6.		

10.	Selected results in the last five years				
	10.1.	Relevant published scientific papers (maximum 5)			
		No	Author	Title	Publisher / Year
		1.	Berguido, F.J.; Gelaye, E.; Liu, Y.; Davaasuren, B.; Krstevski, K.; **Djadjovski, I**.; Ivanova, E.; Goujgoulova, G.; Loitsch, A.; Tuppurainen, E.; et al.	Development and Optimization of Indirect ELISAs for the Detection of Anti-Capripox virus Antibodies in Cattle, Sheep, and Goat Sera	MDPI, Microorganisms (2022), 10, 1956. https://doi.org/10.3390/ microorganisms10101956
		2.	Hodnik, J.J, Acinger-Rogic, Z., Alishani, M., Autio, T., Balseiro, A., Berezowski, J., Carmo, L.P., Chaligiannis, I.,Conrady, B., Costa, L., Cvetkovikj, I., Davidov, I., Dispas, M., **Djadjovski, I**., […], Santman-Berends, I.	Overview of Cattle Diseases Listed Under Category C, D or Ein the Animal Health Law for Which Control Programmes Arein Place Within Europe	Frontiers in Veterinary Science(2021), Volume 8, Article 68808
		3.	Atanaskova Petrov, E., Celeska, I., Popova, Z., Krstevski, K., **Djadjovski, I.**	Molecular detection of Ehrlichia canis in the pet-dog population in R. N. Macedonia	Acta Veterinaria-Beograd(2021), 71 (2), 230-238
		4.	Flannery, J., King, S., Rajko-Nenow, P., Popova, Z., Krstevski, K., **Djadjovski, I**., Batten, C.	Re-emergence of BTV serotype 4in North Macedonia, July 2020	Transboundary and EmergingDiseases (2021), 68:220–223.

		5.	Pérez-Ramírez, E., Cano-Gómez, C., Llorente, F., Adzic, B., Al Ameer, M., **Djadjovski, I.**, et al.	External quality assessment of Rift Valley fever diagnosis in 17veterinary laboratories of the Mediterranean and Black Sea regions	PLoS ONE (2020), 15(9):e0239478.
	10.2.	Participation in national and international scientific research projects (maximum 5)			
		No	Role in the project (project manager or participant)	Title	Time duration of the project The institution from which everything is organized, financed, implemented
		1.		Study for assessment of the prevalence and geographical distribution of the West Nile virus in Macedonia and opportunities for action in the direction of the "One Health" concept".	Финансирано од: Универзитет „Св. Кирил иМетодиј“ во Скопје (2022)
		2.		Improving national capacities forearly detection, characterization to emerging and re-emerging animal diseases with strong economic consequences and upgrade of the bio-risk management at the national laboratory	Финансирано од: IAEA (Technical CooperationProject **MAK5011**) (2022-2024)
		3.		National Platform for ImprovingBiosecurity in Dairy Cattle Farms (NAPIB).	Финансирано од: FAO – EuFMD (SEE FAR Project)
		4.		Regional action on animal disease eradication in the Western Balkans" (ADEWB),	Финансирано од: Европска комисија (IPA 2018/040-824.13/MC/ Animal eradication) (2019-2022)

		5.		Addressing the dual emerging threats of African Swine Fever and Lumpy Skin Disease in Europe (DEFEND)	Финансирано од: Европска комисија (Horizon2020 project) (2018-2023)
	10.3.	Published books in the last five years (maximum 5)			
		No	Author	Title	Publisher / Year
		1.			
		2.			
		3.			
		4.			
		5.			
	10.4.	Published professional papers in the last five years (maximum 5)			
		No	Author	Title	Publisher / Year
		1.			
		2.			
		3.			
		4.			
		5.			
		6.			
11.	Mentoring undergraduate, postgraduate and doctoral students				
	11.1.	Diploma works	1		
	11.2.	Master theses			
	11.3.	Doctoral dissertations			
12.	For mentors of PhD studies, selected results in the last four/five years				
	12.1.	Evidence of printed scientific papers in international scientific journals in the field (maximum 6) in the last five years			
	12.2.	Evidence of at least two printed scientific papers in scientific journals with impact fact field in the last five years			
		No	Author	Title	Publisher / Year
	12.3.	Evidence of at least three participations on international meetings in last five years			
		No.	Author	Title	International meeting/ conference	Year

No:24	**Data for teaching staff and mentors of 3rd cycle of studies (PhD)**			
1.	Name and surname	**Iskra Cvetkovikj**		
2..	Date of birth	09.02.1981		
3.	Level of education	VIII		
4.	Title of teaching-scientific, teaching-professional, teaching, scientific and associate titles	PhD, Doctor of Veterinary sciences Associate professor		
5.	Data on completed education, i.e. acquired academic and scientific degrees	Education	Year	Institution
		Higher education		Faculty of veterinary medicine-Skopje, Ss. Cyril and Methodius University in Skopje
		Master studies		Faculty of veterinary medicine-Skopje, Ss. Cyril and Methodius University in Skopje
		Doctoral studies		Faculty of veterinary medicine-Skopje, Ss. Cyril and Methodius University in Skopje
6.	Area, field and area of the scientific degree master's studies	Area	Field	Discipline
		4 Agricultural and veterinary sciences	4.03 Veterinary sciences	4.03.00.05 Microbiology and immunology
7.	Field, field and area of the scientific degree Doctor of Science with the corresponding code number of the scientific field of the doctorate thesis according to the International Frascati Classification of 2015 and relevant domestic acts that determine the scientific research fields of the third level - areas	Area	Field	Discipline
		4 Agricultural and veterinary sciences	4.03 Veterinary sciences	4.03.00.05 Microbiology and immunology
8.	If he/she is employed, name of the institution where he/she works, title and scientific field in which he/she was elected, according the appropriate code number of the International Frascati Classification from 2015 and relevant domestic acts that determines the scientific research fields of the third level - fields	Institution	Title in which he was elected	Scientific field
		Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje,	Associate professor	4.03 Veterinary sciences 4.03.00.05 Microbiology and immunology
9.	List of courses that the teacher leads separately for the first, second and third cycle of studies			

	9.1.	List of courses taught by the teacher in the first cycle of studies		
		No	Course program title	Study program / Institution
		1.	Microbiology 1	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		2.	Microbiology 2	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		3.	Veterinary Immunology	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		4.	Bacterial Resistance to Antibiotics	Veterinary medicine, Integrated first and second cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje
		5.	Case Studies in Clinical Veterinary Immunology	Veterinary medicine, Integrated first and second cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje
		6.	Case Studies in Clinical Ceterinary Microbiology	Veterinary medicine, Integrated first and second cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje
		7.	Veterinary Vaccinology	Veterinary medicine, Integrated first and second cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje
	9.2.	List of courses taught by the teacher in the second cycle of studies		
		No	Course program title	Study program / Institution
		1.		
		2.		
	9.3.	List of courses taught by the teacher in the third cycle of studies		
		No	Course program title	Study program / Institution
		1.	Virological methods in Veterinary disgnostics	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje
		2.	Bacteriology and diagnosis of the most important bacterial disease.	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje
		3.	Antimicrobial resistance in bacteria from animal origin.	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje

		4.	Immune-mediated diseases iin dogs and cats	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje	
10.	Selected results in the last five years				
	10.1.	Relevant published scientific papers (maximum 5)			
		No	Author	Title	Publisher / Year
		1.	Damborg, P., Allerton, F., Bousquet-Mélou, A., Britt, C., Cagnardi, P., Carmo, L.P., **Cvetkovikj, I.,** Erhard, M., Heuvelink, A., Jessen, L.R. and Overesch, G.,	ENOVAT: the European Network for Optimization of Veterinary Antimicrobial Treatment	2024
		2.	Koritnik, T., **Cvetkovikj, I.,** Zendri, F., Blum, S. E., Chaintoutis, S. C., Kopp, P. A., ... & Timofte, D.	Towards harmonized laboratory methodologies in veterinary clinical bacteriology: outcomes of a European survey	2024
		3.	Cvetkovikj, A., Rashikj, L., Dimitrievski, B., Trajchovski, A., Shikoska, I., Dimov, P., **Cvetkovikj, I.** and Stefanovska, J.,	First report of bovine coenurosis in North Macedonia.	2024
		4.	Shikoska, I., Cvetkovikj, A., Nikolovski, M. and **Cvetkovikj, I.,**	Understanding antimicrobial prescription practices: Insights from small animal veterinarians in North Macedonia.	2024
		5.	Shikoska, I., Djadjovski, I., Krstevski, K., Hristovska, Z.P., Janevski, A., Rashikj, L., Cvetkovikj, A. and **Cvetkovikj, I.**	First Report of Infection in a Cat in North Macedonia.	2023
	10.2.	Participation in national and international scientific-research projects (maximum 5)			
		No	Role in the project (project manager or participant)	Title	Time duration pf the project The institution from which everything is organized, financed, implemented
		1.	Project Manager	Antimicrobial resistance in bacteria isolated from companion animals in Republic of North Macedonia	2023-2025 Ss. Cyril and Methodius University in Skopje, Faculty of veterinary medicine - Skopje

		2.	Participant	Improving national capacities for early detection, characterization to emerging and re-emerging animal diseases with strong economic consequences and upgrade of the bio-risk management at the national laboratory (IAEA/MAK5011).	2022-2024 International Atomic Agency
		3.	Participant	European Network for Optimization of Veterinary Antimicrobial Treatment (ENOVAT),	2019-2024
		4.	Participant	Study for assessment of the prevalence and geographical distribution of the West Nile Virus in Macedonia, and possibilities for action in the direction of the "One Health" concept.	2021-2022
		5.			
	10.3.	Published books in the last five years (maximum 5)			
		No	Author	Title	Publisher / Year
		1.	Iskra Cvetkovikj, Slavcho Mrenoshki and Ivana Shikoska	Practicum for veterinary immunology	Faculty of veterinary medicine – Skopje 2024
		2.			
		3.			
		4.			
		5.			
	10.4.	Published professional papers in the last five years (maximum 5)			
		No	Author	Title	Publisher / Year
		1.			
		2.			
		3.			
		4.			
		5.			
		6.			
11.	Mentoring undergraduate, postgraduate and doctoral students				
	11.1.	Diploma works		1	
	11.2.	Master theses			
	11.3.	Doctoral dissertations		1	
12.	For mentors of PhD studies, selected results in the last four/five years				

	12.1.	Evidence of printed scientific papers in international scientific journals in the field (maximum 6) in the last five years				
		No	Author	Title	Publisher / Year	
		1.	Same as 10.1			
		2.				
		3.				
		4.				
		5.				
		6.				
	12.2.	Evidence of at least two printed scientific papers in scientific journals with impact facto field in the last five years				
		No	Author	Title	Publisher / Year	
		1.	Same as 10.1			
		2.				
	12.3.	Evidence of at least three participations on international meetings in last five years				
		No.	Author	Title	International meeting/ conference	Year
		1.	Shikoska I, Chapkunovska B.Rashikj Lj and **Cvetkovikj I.**	The role of shelter dogs in the ecology of antimicrobial resistance ESBL and AMPC-producing Esherichia coli in North Macedonia	10th International Scientific Meeting "Days Of Veterinary Medicine" and 2nd European Conference on Veterinary and Medical Education 2024	2024
		2.	D. Timofte1, **I. Cvetkovikj**2, F. Zendri1, S. Blum3, S.C. Chaintoutis4, P.A. Kopp5, C. Hare6, Z. Štritof7, S. Kittl8, J. Goncalves9, I. Zdovc10, E. Paulshus11, T. Koritnik12, A. Laconi13, E. Broens14, P. Damborg	The ENOVAT survey on current methodologies used for bacterial identification and antimicrobial susceptibility testing in european veterinary diagnostic laboratories	4th International Conference of the European College of Veterinary Microbiology	2022
		3.	**Cvetkovikj I.,** Shikoska I, Manovska Ratkova M. …and Cvetkovikj A.	Antimicrobial Resistance In Staphylococci Isolated Fromdogs In The Republic Of North Macedonia	9th International Scientific Meeting, Days of veterinary medicine 2022	2022

No: 25	**Data for teaching staff and mentors of 3rd cycle of studies (PhD)**			
1.	Name and surname	**Radmila Chrcheva Nikolovska**		
2..	Date of birth	31/07/1974		
3.	Level of education	VIII		
4.	Title of teaching-scientific, teaching-professional, teaching, scientific and associate titles	PhD, Doctor of Veterinary sciences Associate professor		
5.	Data on completed education, i.e. acquired academic and scientific degrees	Education	Year	Institution
		Higher education	1999	Faculty of veterinary medicine-Skopje, Ss. Cyril and Methodius University in Skopje
		Master studies	2009	Faculty of veterinary medicine-Skopje, Ss. Cyril and Methodius University in Skopje
		Doctoral studies	2015	Faculty of veterinary medicine-Skopje, Ss. Cyril and Methodius University in Skopje
6.	Area, field and area of the scientific degree master's studies	Area	Field	Discipline
		4 Agricultural and veterinary sciences	4.03 Veterinary sciences	4.03.00.23 Nutrition - dietetics
7.	Field, field and area of the scientific degree Doctor of Science with the corresponding code number of the scientific field of the doctorate thesis according to the International Frascati Classification of 2015 and relevant domestic acts that determine the scientific research fields of the third level – areas	Area	Field	Discipline
		4 Agricultural and veterinary sciences	4.03 Veterinary sciences	4.03.00.23 Nutrition - dietetics
8.	If he/she is employed, name of the institution where he/she works, title and scientific field in which he/she was elected, according the appropriate code number of the International Frascati Classification from 2015 and relevant domestic acts that determines the scientific research fields of the third level – fields	Institution	Title in which he was elected	Scientific field
		Faculty of veterinary medicine-Skopje, Ss. Cyril and Methodius University in Skopje	Associate professor	4.03 Veterinary sciences

9.	List of courses that the teacher leads separately for the first, second and third cycle of studies			
	9.1.	List of courses taught by the teacher in the first cycle of studies		
		No	Course program title	Study program / Institution
		1.	Domestic Animal General Nutrition	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		2.	Specific Nutrition of Domestic Animals	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje

		3.	Nutritious, Medicinal and Poisonous plants	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		4.	Bulk Feed Production	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		5.	Harmful Antinutritive Compounds in Feed	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		6.	Feed Additives and Health Modulators	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
	9.2.	List of courses taught by the teacher in the second cycle of studies		
		No	Course program title	Study program / Institution
		1.		
		2.		
	9.3.	List of courses taught by the teacher in the third cycle of studies		
		No	Course program title	Study program / Institution
		1.		
		2.		

10.	Selected results in the last five years				
	10.1.	Relevant published scientific papers (maximum 5)			
		No	Author	Title	Publisher / Year
		1.	Aleksandra Angjeleska, Elizabeta Dimitrieska Stojkovic, Zehra Hajrulai Musliu, Radmila Crceva Nikolovska, Bosko Boskovski	Natural radioactivity levels and estimation of radiation exposure in agricultural soils from Skopje city region	Macedonian journal of chemistry and chemical engineering, Vol.39, No. 1 pp.77-87, 2020
		2.	Aleksandra Angeleska, Elizabeta Stojkovic Dimitrievska, Radmila Crceva Nikolovska, Zehra Hajrulai Musliu, Biljana Stojanovska Dimzoska, Slobodan Bogoevski, Bosko Boskovski	Distribution of some radionuclides in corn and soil from different locations in Skopje and the surrounding of Skopje	Mechanical Engineering Scientific Journal, Vol.38, No.1, p.37-42, Skopje
		3.	Radmila Crceva Nikolovska, Aleksandra Angeelska, Elizabeta Stojkovic Dimitrievska, Vasilka Poposka	Fake Food: What can we do about food Fraud?	Institute of Agricultural Economics, Thematic Proceedings, 2020
		4.	Radmila Crceva Nikolovska, Aleksandra Angeleska, Aleksandar Nikolovski, Elizabeta Stojkovic Dimitrievska, Vasilka Poposka Treneska, Blagica Sekovska,	Detecting meat fraud in food supply chain	Balkan Journal of Western Balkan Agricultural, Journal of Agricultural Rural Development, Economics and Rural Volume I, Number 2 (85-160), Belgrad, Serbia
		5.			
	10.2.	Participation in national and international scientific-research projects (maximum 5)			

		No	Role in the project (project manager or participant)	Title	Time duration pf the project The institution from which everything is organized, financed, implemented
		1.		Contamination of food with acrylamide as a product of the the reaction and evaluation certain procedures for his reduction in thermal processed products from potato″	University "St. Cyril and Metodij" Skopje, 2018
		2.			
		3.			
		4.			
		5.			
	10.3.	Published books in the last five years (maximum 5)			
		No	Author	Title	Publisher / Year
		1.			
		2.			
		3.			
		4.			
		5.			
	10.4.	Published professional papers in the last five years (maximum 5)			
		No	Author	Title	Publisher / Year
		1.			
		2.			
		3.			
		4.			
		5.			
		6.			
11.	Mentoring undergraduate, postgraduate and doctoral students				
	11.1.	Diploma works			
	11.2.	Master theses			
	11.3.	Doctoral dissertations			
12.	For mentors of PhD studies, selected results in the last four/five years				
	12.1.	Evidence of printed scientific papers in international scientific journals in the field (maximum 6) in the last five years			
		No	Author	Title	Publisher / Year
		1.			
		2.			
		3.			
		4.			
		5.			
		6.			
	12.2.	Evidence of at least two printed scientific papers in scientific journals with impact factor in the field in the last five years			
		No	Author	Title	Publisher / Year
		1.			
		2.			
	12.3.	Evidence of at least three participations on international meetings in last five years			

		No.	Author	Title	International meeting/ conference	Year
		1.	Radmila Chrcheva Nikolovska, Ljupco Angelovski, Ana Angelovska, Aleksandra Angeleska	Animal types of proteins in meat and meat products	5th International VetIstanbul Group Congress and 8th International Scientific Meeting Days of Veterinary Medicine, Ohrid	2022
		2.	Lupco Angelovski, Dean jankuloski, Radmila Chrcheva Nikolovska, Marija Ratkova, Mirko Prodanov, Sandra Mojsova, Pavle Sekulovski	Biofilm control measures in the food industry	5th International VetIstanbul Group Congress and 8th International Scientific Meeting Days of Veterinary Medicine, Ohrid, Macedonia	2022

No: 26	**Data for teaching staff and mentors of 3rd cycle of studies (PhD)**			
1.	Name and surname	**Branko Atanasov**		
2..	Date of birth	13.06.1977		
3.	Level of education	VIII		
4.	Title of teaching-scientific, teaching-professional, teaching, scientific and associate titles	PhD, Doctor of Veterinary sciences Associate professor		
5.	Data on completed education, i.e. acquired academic and scientific degrees	Education	Year	Institution
		Higher education	1993	Faculty of veterinary medicine-Skopje, Ss. Cyril and Methodius University in Skopje
		Master studies	2012	Faculty of veterinary medicine-Skopje, Ss. Cyril and Methodius University in Skopje
		Doctoral studies	2015	Faculty of veterinary medicine-Skopje, Ss. Cyril and Methodius University in Skopje
6.	Area, field and area of the scientific degree master's studies	Area	Field	Discipline
		4. Agricultural and veterinary sciences	4.03 Veterinary science	4.03.00.17 Reproduction
7.	Field, field and area of the	Area	Field	Discipline

	scientific degree Doctor of Science with the corresponding code number of the scientific field of the doctorate thesis according to the International Frascati Classification of 2015 and relevant domestic acts that determine the scientific research fields of the third level – areas	4. Agricultural and veterinary sciences	4.03 Veterinary science	4.03.00.17 Reproduction
8.	If he/she is employed, name of the institution where he/she works, title and scientific field in which he/she was elected, according the appropriate code number of the International Frascati Classification from 2015 and relevant domestic acts that determines the scientific research fields of the third level – fields	Institution	Title in which he was elected	Scientific field
		Faculty of veterinary medicine-Skopje, Ss. Cyril and Methodius University in Skopje	Associate professor	4.03 Veterinary science

9.	List of courses that the teacher leads separately for the first, second and third cycle of studies			
	9.1.	List of courses taught by the teacher in the first cycle of studies		
		No	Course program title	Study program / Institution
		1.	Reproduction 1	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
			Reproduction 2	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		2.	Advanced Reproductive Endocrinology	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		4.	Ultrasound Diagnostics of Reproductive Disorders	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		5.	Advanced Andrology and Cryobiology	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		6.		
	9.2.	List of courses taught by the teacher in the second cycle of studies		
		No	Course program title	Study program / Institution
		1.		
		2.		
	9.3.	List of courses taught by the teacher in the third cycle of studies		
		No	Course program title	Study program / Institution
		1.	Reproductive biotechnology	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje
		2.	Diagnostics and treatment of infertility in domestics animals	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje

		3.	Herd health management in dairy cows	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje
		4.	Mammary gland diseases	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje
		5.	Ultrasonic diagnostics in pets	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje
		6.	Management of postpartum uterine infections in domestic animals	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje

10. Selected results in the last five years

10.1. Relevant published scientific papers (maximum 5)

No	Author	Title	Publisher / Year
1.	Jeffrey S. Stevenson, Branko Atanasov	Changes in body condition score from calving to first insemination and milk yield, pregnancy per AI, and pregnancy loss in lactating dairy cows: A meta-analysis	Theriogenology 193 (2022) 93-102 (IF 2.4)
2.	Atanasov B, Dovenski T, Celeska I, Stevenson JS.	Luteolysis, progesterone, and pregnancy per insemination after modifying the standard 7-day Ovsynch program in Holstein-Friesian and Holstein cows.	J Dairy Sci. 2021 Jun; 104(6):7272-7282 (IF 4.225)
3.	Dovenska M., Atanasov Branko, Benc Michal, Nikolovski Martin, Pendovski Lazo, Laurincik Jozef, Dovenski T., Adamov N., Popovska-Percinic F.	Brilliant cresyl blue staining enhances the morphological quality evaluation of porcine oocytes-a preliminary study	Macedonian Veterinary Review, vol.46, no.2, 2023, pp.137-145 (IF 0.4)
4.	Stojanov B., Atanasov B., Grizelj J., Vince S., Ilievska K., Nikolovski M., Dovenski T. Samardžija M.	External progesterone supplementation during the Ovsynch protocol reduces the incomplete luteolysis in dairy cows under heat stress	Macedonian Veterinary Review, Vol.47 (Issue 1), pp. 45-50 (IF 0.4)
5.	B. Atanasov; L. Mickov; M. Nikolovski; N. Adamov; M. Dovenska;K. Ilievska; I. Esmerov; T. Dovenski	Key points that increase the success of the OVSYNCH protocol	Reproduction in Domestic Animals Vol. 59, issue S2 September 2024, (IF 1.6)

10.2. Participation in national and international scientific-research projects (maximum 5)

No	Role in the project (project manager or participant)	Title	Time duration of the project The institution from which everything is organized, financed, implemented

		1.	Project manager	Determining the prevalence and incidence of abortions caused by Neospora caninum in dairy farms in RSM	2022-2024 FVMS
		2.	Project manager	'Improving Productivity and Market Success of Macedonian Farmers'.	USAID within the Business Ecosystem Project 2018
		3.	participant	Influence of seminal plasma and reduced glutathione in the preservation of sperm biological integrity in cryopreserved ejaculates from Ovchepolska Pramenka sheep	1.2.2016-1.2.2017 UKIM
		4.	Participant	Cryopreservation of dog sperm, endoscopic examination of the reproductive tract and transcervical endoscopic insemination	2022-2023 UKIM
	10.3.	Published books in the last five years (maximum 5)			
		No	Author	Title	Publisher / Year
		1.			
		2.			
		3.			
		4.			
		5.			
	10.4.	Published professional papers in the last five years (maximum 5)			
		No	Author	Title	Publisher / Year
		1.	Dovenski Toni, Grizelj Juraj, Ilievska Ksenija, Atanasov Branko, Vince Silvijo, Nikolovski Martin, Dovenska Monika, Janevski Aleksandar, Nektarios D. Giadinis	Mastitis in small ruminants, etiology, prevalence and management	10. Scientific symposium reproduction of domestic animals and mammary gland diseases, Proceedings, 143-152; Divcibare 2019
		2.	Atanasov Branko, Adamov Nikola, Celeska Irena, Ilievska Ksenija, Mickov Ljupcho, Dovenski Toni	Comparison of two ovulation synchronization protocols to evaluate luteolysis, progesterone concentration and fertility rate in dairy cows	12. Scientific symposiu reproduction of domestic animals and mammary gland diseases, Proceedings, 91-99; Divcibare 2021
		3.	Dovenski Toni, Nikolovski Martin, Atanasov Branko, Popovska Perčinić Florina, Petkov Vladimir Dovenska Monika, Mickov Ljupčo, Kočoski Ljupce, Vince Silvijo, Juraj Grizelj	Recent advances in sheep and goat reproduction	13. Scientific symposium „Reproduction of domestic animals" p. 117-128, Divcibare 2022

		4.	Atanasov B., Murdjeva E., Nikolovski M., Mickov Lj., Ilievska K., Esmerov I., Dovenski T	Implementation of the short synch protocol to increase the conception rate in small-scale cow dairy farms	14. Scientific symposium „Reproduction of domestic animals" p.53-69, Divcibare 2023
		5.	Dovenski Toni, Petkov Vladimir, Trojacanec Plamen, Nikolovski Martin, Atanasov Branko, Popovska Perčinić Florina, Dovenska Monika, Dimitrievski Zoran, Dzabirski Vladimir.	Our experiences in the ex-situ conservation process of indigenous breeds of domestic animals using assisted reproduction tehnologies (ART)	4. Symposium Protection of agrobiodiversity and presevation of autochthonous breeds of domestic animals, Dimitrovgrad, Serbia, 85-97
		6.			

11.	Mentoring undergraduate, postgraduate and doctoral students		
	11.1.	Diploma works	12
	11.2.	Master theses	/
	11.3.	Doctoral dissertations	/

12.	For mentors of PhD studies, selected results in the last four/five years				
	12.1.	Evidence of printed scientific papers in international scientific journals in the field (maximum 6) in the last five years			
		No	Author	Title	Publisher / Year
		1.			
		2.			
		3.			
		4.			
		5.			
		6.			
	12.2.	Evidence of at least two printed scientific papers in scientific journals with impact factor in the field in the last five years			
		No	Author	Title	Publisher / Year
		1.			
		2.			
		3.			
		4.			

	12.3.	Evidence of at least three participations on international meetings in last five years				
		No.	Author	Title	International meeting/ conference	Year
		1.				
		2.				
		3.				

No: 27	**Data for teaching staff and mentors of 3rd cycle of studies (PhD)**	
1.	Name and surname	**Ksenija Ilievska**
2..	Date of birth	29.05.1978
3.	Level of education	VIII
4.	Title of teaching-scientific, teaching-professional, teaching,	PhD, Doctor of Veterinary sciences Associate professor

<table>
<tr><td></td><td>scientific and associate titles</td><td colspan="3"></td></tr>
<tr><td rowspan="4">5.</td><td rowspan="4">Data on completed education, i.e. acquired academic and scientific degrees</td><td>Education</td><td>Year</td><td>Institution</td></tr>
<tr><td>Higher education</td><td>2004</td><td>Faculty of veterinary medicine-Skopje, Ss. Cyril and Methodius University in Skopje</td></tr>
<tr><td>Master studies</td><td>2010</td><td>Faculty of veterinary medicine-Skopje, Ss. Cyril and Methodius University in Skopje</td></tr>
<tr><td>Doctoral studies</td><td>2015</td><td>Faculty of veterinary medicine-Skopje, Ss. Cyril and Methodius University in Skopje</td></tr>
<tr><td rowspan="2">6.</td><td rowspan="2">Area, field and area of the scientific degree master's studies</td><td>Area</td><td>Field</td><td>Discipline</td></tr>
<tr><td>4. Agricultural and veterinary sciences</td><td>4.03 Veterinary science</td><td>4.03.00.17 Surgery, opthalmology and orthopedics</td></tr>
<tr><td rowspan="2">7.</td><td rowspan="2">Field, field and area of the scientific degree Doctor of Science with the corresponding code number of the scientific field of the doctorate thesis according to the International Frascati Classification of 2015 and relevant domestic acts that determine the scientific research fields of the third level – areas</td><td>Area</td><td>Field</td><td>Discipline</td></tr>
<tr><td>4. Agricultural and veterinary sciences</td><td>4.03 Veterinary science</td><td>4.03.00.17 Surgery, opthalmology and orthopedics</td></tr>
<tr><td rowspan="2">8.</td><td rowspan="2">If he/she is employed, name of the institution where he/she works, title and scientific field in which he/she was elected, according the appropriate code number of the International Frascati Classification from 2015 and relevant domestic acts that determines the scientific research fields of the third level – fields</td><td>Institution</td><td>Title in which he/she was elected</td><td>Scientific field</td></tr>
<tr><td>Ss. Cyril and Methodius, University in Skopje, Faculty of veterinary medicine – Skopje, R. of Macedonia</td><td>Associate professor</td><td>4.03 Veterinary science</td></tr>
<tr><td>9.</td><td colspan="4">List of courses that the teacher leads separately for the first, second and third cycle of studies</td></tr>
<tr><td></td><td>9.1.</td><td colspan="3">List of courses taught by the teacher in the first cycle of studies</td></tr>
<tr><td></td><td></td><td>No</td><td>Course program title</td><td>Study program / Institution</td></tr>
<tr><td></td><td></td><td>1.</td><td>Anesthesia and Intensive Care</td><td>Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje</td></tr>
<tr><td></td><td></td><td>2.</td><td>General Surgery</td><td>Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje</td></tr>
</table>

		3.	Soft Tissue Surgery	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		4.	Orthopedics and Rehabilitation	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		5.	Opthalmology	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		6.	Molecular Mechanisms of General Anesthesia	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		7.	Veterinary Dentistry in Dogs and Cats	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		8.	Companion Animal Anesthesia and Analgesia Techniques Under Specific Surgical Conditions	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
	9.2.	List of courses taught by the teacher in the second cycle of studies		
		No	Course program title	Study program / Institution
		1.		
		2.		
	9.3.	List of courses taught by the teacher in the third cycle of studies		
		No	Course program title	Study program / Institution
		1.	Surgical techniques in companion animals	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje
		2.	Surgical techniques in farm animals	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje
		3.	Special orthopedic diseases	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje
		4.	Postoperative infections and antimicrobial therapy/prophylaxis	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje

10.	Selected results in the last five years				
	10.1.	Relevant published scientific papers (maximum 5)			
		No	Author	Title	Publisher / Year
		1.	Ksenija Ilievska**,**Branko Atanasov, Toni Dovenski, Ozren Smolac, Boris Stojanov, PlamenTrojachanec	ACUTE PHASE PROTEINS – AS INDICATORS OF CLAW DISEASES IN DAIRY CATTLE.	Mac Vet Rev 2019; 42 (1): 95-100
		2.	Branko Atanasov, Nikola Adamov, Irena Celeska, **Ksenija Ilievska**, Branko Angjelovski, Zvonko Trbogazov, Filip Davkov, Toni Dovenski, Geert Opsomer, Jeffrey Stevenson	MODIFICATION OF THE STANDARD 7-DAY OVSYNCH PROTOCOL TO INCREASE THE LUTEOLYTIC AND SYNCHRONIZATION RISKS IN DAIRY COWS	Mac Vet Rev 2020; 43 (2): 161-167
		3.	Miroslav KjosevskiJ, Martin Nikolovski, Ksenija Ilievska, Lazo Pendovski, Vlatko Ilieski	The three pillars of applied farm animal welfare	Veterinarski Glasnik 2021, 00, 1-13, UDC: https://doi.org/10.2298/VETGL210629014K

		4.	Ena Dobrikj, Vlatko Ilieski, Ksenija Ilievska, Miroslav Kjosevski	USING SPECIES-SPECIFIC PROTOCOLS FOR THE WELFARE ASSESSMENT OF ELEPHANTS IN THE SKOPJE ZOO.	Mac Vet Rev 2022; 45 (2): i-viii
		5.	Pendovski L., Bozhinovski D., Ilievska K., Trojachanec P., Ilieski V.	Computer tomography (CT) scans as a diagnostic tool for interpretation of S10 plastinated slides from dog cadaver.	Mac Vet Rev 2022; 45 (2): Pages 127-135, (IF 0.4)
		6.	Boris Stojanov, Branko Atanasov, Juraj Grizelj, Silvijo Vince, **Ksenija Ilievska,** Martin Nikolovski, Toni Dovenski, Marko Sammardzija	External progesterone supplementation during the Ovsynch protocol reduces the incomplete luteolysis in dairy cows under heat stress,	Mac Vet Rev 2024; 47 (1): i – vi, doi 10.2478/macvetrev-2024-0015
	10.2.	Participation in national and international scientific-research projects (maximum 5)			
		No	Role in the project (project manager or participant)	Title	Time duration of the project The institution from which everything is organized, financed, implemented
		1.	Participant	Validation of 19 microsatellite DNA markers for individuality identification and parental testing in dogs (Canis lupus familiaris) – Ss. Cyril and Methodius University in Skopje	2021-2022, Ss. Cyril and Methodius University in Skopje
		2.	Participant	Cryopreservation of dog semen, endoscopic examination of the reproductive tract and transcervical endoscopic insemination – Ss. Cyril and Methodius University in Skopje	2023, Ss. Cyril and Methodius University in Skopje
		3.	Participant	Regenerative medicine — platelet-rich plasma (PRP) for innovative therapies in companion animals - Ss. Cyril and Methodius University in Skopje	2023-2024, Ss. Cyril and Methodius University in Skopje
		4.	Participant	Digital education in Veterinary Studies (DeVet),	2021-2022 ERASMUS + (KA2 - Cooperation for innovation and the exchange of good practices)
		5.	Coordinator	Reviving of Farriery; Disappearing profession	2018-2021, Erasmus Plus Programme / KA2 – Cooperation and Innovation for Good Practices Strategic Partnerships for Adult Education
		6.			

	10.3.	Published books in the last five years (maximum 5)			
		No	Author	Title	Publisher / Year
		1.	Pendovski, Lazo, Starič, Jože, Biricik, Halil S., Kjosevski, Miroslav, Ulchar, Igor, Hajrulai Musliu, Zehra, Nikolovski, Martin, Ilievska, Ksenija, . Popovska Percinikj, Florina	ANIMAL management in disasters : Basic principles /	Ss. Cyril and Methodius University in Skopje, Faculty of veterinary medicine, 2023. - 137 стр. : илустр. ; 30 см ISBN 978-9989-774-41-6 COBISS.MK-ID 59362565
		2.			
		3.			
		4.			
		5.			
	10.4.	Published professional papers in the last five years (maximum 5)			
		No	Author	Title	Publisher / Year
		1.	Dovenski Toni, Grizelj Juraj, Ilievska Ksenija, Atanasov Branko, Vince Silvijo, Nikolovski Martin, Dovenska Monika, Janevski Aleksandar, Nektarios D. Giadinis	Mastitis in small ruminants, etiology, prevalence and management	10. Scientific symposium reproduction of domestic animals and mammary gland diseases, Proceedings, 143-152; Divcibare 2019
		2.	Atanasov Branko, Adamov Nikola, Celeska Irena, Ilievska Ksenija, Mickov Ljupcho, Dovenski Toni	Comparison of two ovulation synchronization protocols to evaluate luteolysis, progesterone concentration and fertility rate in dairy cows	12. Scientific symposium reproduction of domestic animals and mammary gland diseases, Proceedings, 91-99; Divcibare 2021
		3.	Ksenija Ilievska, Elena Atanaskova Petrov, Filip Trojachanec, Todor Novakov, Miroslav Jovanovski, Jane Vlahov, Plamen Trojacanec	Opstrukcija jednjaka stranim tijelom – prikaz klinickih slucajeva	Zdravlje zivotinja, br. 3, 89-95, 2022
		4.	Atanasov B., Murdjeva E., Nikolovski M., Mickov Lj., Ilievska K., Esmerov I., Dovenski T	Implementation of the short synch protocol to increase the conception rate in small-scale cow dairy farms	14. Scientific symposium „Reproduction of domestic animals" p.53-69, Divcibare 2023
		5.			
		6.			
11.	Mentoring undergraduate, postgraduate and doctoral students				
	11.1.	Diploma works		12	
	11.2.	Master theses		/	
	11.3.	Doctoral dissertations		/	
12.	For mentors of PhD studies, selected results in the last four/five years				
	12.1.	Evidence of printed scientific papers in international scientific journals in the field (maximum 6) in the last five years			

		No	Author	Title		Publisher / Year
		1.				
		2.				
		3.				
		4.				
		5.				
		6.				
	12.2.	Evidence of at least two printed scientific papers in scientific journals with impact factor in the field in the last five years				
		No	Author	Title		Publisher / Year
		1.				
		2.				
		3.				
		4.				
	12.3.	Evidence of at least three participations on international meetings in last five years				
		No.	Author	Title	International meeting/ conference	Year
		1.				
		2.				
		3.				

No: 28	**Data for teaching staff and mentors of 3rd cycle of studies (PhD)**			
1.	Name and surname	**Nikola Adamov**		
2..	Date of birth	30.12.1977		
3.	Level of education	VIII		
4.	Title of teaching-scientific, teaching-professional, teaching, scientific and associate titles	PhD, Doctor of Veterinary sciences Associate professor		
5.	Data on completed education, i.e. acquired academic and scientific degrees	Education	Year	Institution
		Higher education	2002	Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje
		Master studies	2010	Agriculture faculty, University in Novi Sad
		Doctoral studies	2014	Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje
6.	Area, field, and area of the scientific degree master's studies	Area	Field	Discipline
		4 Agricultural and veterinary sciences	4.03 Veterinary sciences	4.03.00.27 Animal husbandry ad hereditary diseases
7.	Field, field, and area of the	Area	Field	Discipline

	scientific degree Doctor of Science with the corresponding code number of the scientific field of the doctorate thesis according to the International Frascati Classification of 2015 and relevant domestic acts that determine the scientific research fields of the third-level - areas		4 Agricultural and veterinary sciences	4.03 Veterinary sciences	4.03.00.27 Animal husbandry ad hereditary diseases
8.	If he/she is employed, the name of the institution where he/she works, title, and scientific field in which he/she was elected, according to the appropriate code number of the International Frascati Classification from 2015 and relevant domestic acts that determines the scientific research fields of the third level - fields		Institution	Title in which he was elected	Scientific field
			Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje	Associate professor	4.03 Veterinary sciences

9.	List of courses that the teacher leads separately for the first, second, and third cycle of studies			
	9.1.	List of courses taught by the teacher in the first cycle of studies		
		No	Course program title	Study program / Institution
		1.	Animal Husbandry 1	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		2.	Animal Husbandry 2	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		3.		
		4.		
		5.		
		6.		
	9.2.	List of courses taught by the teacher in the second cycle of studies		
		No	Course program title	Study program / Institution
		1.		
		2.		
		3.		
	9.3.	List of courses taught by the teacher in the third cycle of studies		
		No	Course program title	Study program / Institution
		1.		
		2.		
		3.		
		4.		
		5.		
		6.		

10.	Selected results in the last five years				
	10.1.	Relevant published scientific papers (maximum 5)			
		No	Author	Title	Publisher / Year

		1.	Adamov N., Atanasov B., Ilievska K., Nikolovski M.,Dovenska M., Petkov V., Dovenski T.	Allele and genotype frequencies ofthe kappa-casein (CSN3) locus in Macedonian Holstein-Friesian cattle.	Mac. Vet. Rev. 43 (1): 45-54 / 2020
		2.	Stojanov B., Atanasov B., Grizelj J., Vince S., Nikolovski M., Kjosevski M.,Dovenski T., Adamov N., Ilievska K., Samardzija M.	Induction and formation of accessory corpus luteum after artificial insemination (AI) mightincrease pregnancy rate per AI inheat stressed dairy cows.	Mac. Vet. Rev. 43 (1): 37-43 / 2020
		3.	Nikolovski M., Dovenska M., Ilievska K., Adamov N., Atanasov B., Radeski M., Kirovski D., Petkov V., Dovenski T.	Homologous seminal plasma and glutathione promote pre-capacitation motility and structuralstability of cryopreserved ram spermatozoa.	Mac. Vet. Rev. 42 (2): 169-179 / 2019
		4.	Angjelovski B., Radeski M.,Djadjovski I., Mitrov D., Bojkovski J., Adamov N., Dovenski T.	Prevalence and clinical signs of postpartum dysgalactia syndrome at the first day after farrowing in farmed sows in the Republic of Macedonia.	Mac. Vet. Rev. 42 (1): 79-86 / 2019
		5.	Nikolovski, M., Dovenska, M., Ilievska, K., Adamov, N., Atanasov, B., Radeski, M., Kirovski, D., Petkov, V., & Dovenski, T.	Homologous seminal plasma and glutathione promote pre-capacitation motility and structuralstability of cryopreserved ram spermatozoa.	Mac Vet Rev 42(2), 169-179 / 2019
	10.2.	Participation in national and international scientific research projects (maximum 5)			

		No	Role in the project (project manager or participant)	Title	Time duration of the project The institution from which everything is organized, financed, implemented
		1.	COST Project (CA20103)	"Biosecurity Enhanced Through Training Evaluation and Raising Awareness" (BETTER)	2021 – 2025 год.
		2.	Универзитет „Св. Кирил и Методиј" во Скопје	Криопрезервација на сперма од кучиња, ендоскопски преглед нарепродуктивен тракт и трансцервикална ендоскопска инсеминација	2022 - 2023 год.
		3.	Универзитет „Св. Кирил и Методиј" во Скопје	Влијание на семиналната плазмаи редуцираниот глутатион во зачувувањето на сперматозоидниот биолошки интегритет во криопрезервирани ејакулати од Овчеполска Праменка	2017 - 2018 год.
		4.			
		5.			
	10.3.	Published books in the last five years (maximum 5)			
		No	Author	Title	Publisher / Year
		1.			
		2.			
		3.			
		4.			
		5.			
	10.4.	Published professional papers in the last five years (maximum 5)			
		No	Author	Title	Publisher / Year
		1.			
		2.			
		3.			
		4.			
		5.			
		6.			
11.	Mentoring undergraduate, postgraduate and doctoral students				
	11.1.	Diploma works			
	11.2.	Master theses			
	11.3.	Doctoral dissertations			

12.	For mentors of PhD studies, selected results in the last four/five years				
	12.1.	Evidence of printed scientific papers in international scientific journals in the field (maximum 6) in the last five years			
	12.2.	Evidence of at least two printed scientific papers in scientific journals with impact facto field in the last five years			
		No	Author	Title	Publisher / Year
	12.3.	Evidence of at least three participations on international meetings in last five years			
		No.	Author	Title	International meeting/ conference / Year

No: _____	**Data for teaching staff and mentors of 3rd cycle of studies (PhD)**			
1.	Name and surname	**Sandra Mojsova**		
2..	Date of birth	13.04.1980		
3.	Level of education	VIII		
4.	Title of teaching-scientific, teaching-professional, teaching, scientific and associate titles	PhD, Doctor of Associate professor		
5.	Data on completed education, i.e. acquired academic and scientific degrees	Education	Year	Institution
		Higher education	2007	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje
		Master studies	2013	Faculty of Agricultural Sciences and Food, Ss Cyril and Methodius University in Skopje
		Doctoral studies	2016	Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje
6.	Area, field, and area of the scientific degree master's studies	Area	Field	Discipline
		4 Agricultural and veterinary sciences	4.03 Veterinary sciences	4.03.00.22 Food safety and veterinary public health
7.	Field, field, and area of the	Area	Field	Discipline

	scientific degree Doctor of Science with the corresponding code number of the scientific field of the doctorate thesis according to the International Frascati Classification of 2015 and relevant domestic acts that determine the scientific research fields of the third-level - areas	4 Agricultural and veterinary sciences	4.03 Veterinary sciences	4.03.00.22 Food safety and veterinary public health
8.	If he/she is employed, the name of the institution where he/she works, title, and scientific field in which he/she was elected, according to the appropriate code number of the International Frascati Classification from 2015 and relevant domestic acts that determines the scientific research fields of the third level - fields	Institution	Title in which he was elected	Scientific field

9.	List of courses that the teacher leads separately for the first, second, and third cycle of studies			
	9.1.	List of courses taught by the teacher in the first cycle of studies		
		No	Course program title	Study program / Institution
		1.	Meat Hygiene and Technology	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		2.	Milk Hygiene and Technology	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		3.	Meat, Fish, Eggs and Honey – Hygiene and Technology	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		4.	Food Safety and Veterinary Public Health	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		5.	Veterinary Inspection	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		6.	Food Microbiology	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		7.	Current Food Safety Systems	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
	9.2.	List of courses taught by the teacher in the second cycle of studies		
		No	Course program title	Study program / Institution
		1.		
		2.		
		3.		
	9.3.	List of courses taught by the teacher in the third cycle of studies		
		No	Course program title	Study program / Institution

		1.		
		2.		
		3.		
		4.		
		5.		
		6.		

10.	Selected results in the last five years				
	10.1.	Relevant published scientific papers (maximum 5)			
		No	Author	Title	Publisher / Year
		1.	Maurizio Ferri, Bojan Blagojevic, Patric Maurer, Brigita Hengl, Claudia Guldimann, Sandra Mojsova, Ioannis Sakaridis, Boris Antunovic, Eduarda Gomes-Neves, Nevijo Zdolec, Madalena Vieira-Pinto, Sophia Johler	Risk based meat safety assurance system – An introduction to key concepts for future training of official veterinarians	Food control, Elsevier, 2022
		2.	Branko Velebit, Lazar Milojević, Tatjana Baltić, Nevena Grković, Sanjay Gummalla, Marina Velebit, Ines Škoko, Sandra Mojsova, Predrag Putnik	Efficacy of cold atmospheric plasma for inactivation of viruses on raspberries	Innovative Food Science & Emerging Technologies, Elsevier, 2022
		3.	Angelovski Lj., Popova Z., Blagoevska K., Mojsova S., Ratkova Manovska M., Prodanov M., Jankuloski D., Sekulovski P.	Prevalence, Detection of Resistance Genes and Antimicrobial Resistance of Campylobacter jejuni in Broilers in North Macedonia.	Veterinary Sciences: Research and Reviews, 2021
		4.	Simonovska, J., Temkov, M., Mojsova, S., Dimitrovski, D., Rafajlovska, V., Velickova, E.,	Influence of the chitosan coating type on the cow's yellow cheese storage stability	9th International Congress of Food technologist, Biotechnologist and Nutritionists, 2018
		5.			
	10.2.	Participation in national and international scientific research projects (maximum 5)			

		No	Role in the project (project manager or participant)	Title	Time duration of the project The institution from which everything is organized, financed, implemented
		1.	Bojan Blagojevic	Risk based meat inspection and intergrated meat safety assurance- RIBMINS	COST Action CA18105
		2.	Leo Van Overbeek	Control of Human PathogenicMicro-organisms in Plant Production System - HUPLANT	COST Action CA16110
		3.	д-р Катерина Благоевска	Биомониторинг на антимикробна отпорност и типизација на патогени и коменсални бактерии во отпадни води од објекти на производство на храна.	Универзитет “Св. Кирил иМетодиј” во Скопје
		4.	проф. д-р Деан Јанкулоски	Антимикробна резистенција кај изолати на коменсална *Escherichia coli* во РепубликаСеверна Македонија	Факултет за ветеринарна медицина Скопје
		5.	д-р Елизабета Димитриеска Стојковиќ	Проценка на контаминацијатана некои видови храна со акриламид како продукт на реакцијата и евалуација на одредени постапки за негова редукција во термички обработени производи одкомпир	Факултет за ветеринарна медицина Скопје
	10.3.	Published books in the last five years (maximum 5)			
		No	Author	Title	Publisher / Year
		1.	Mateva, V. Levkov, S. Srbinovska, D. Santa, S. Mojsova, E. Sulejmani	Characteristics of Traditional Cheeses Produced in the Republic of North Macedonia, Current. Developments in Food and Nutrition Research, Vol. 1,	Bentham Science Publishers, 2019

		2.			
		3.			
		4.			
		5.			
	10.4.	Published professional papers in the last five years (maximum 5)			
		No	Author	Title	Publisher / Year
		1.	Mojsova S., Angelovski Lj., Jankuloski D.,Simonovska J.,Velickova E..	Antimicrobial effect of oregano-chitosan double coatings on Listeria monocytogenes in meat products	IOP Conference Series: Earth and Environmental Science, 2019
		2.	V. Levkov, N. Gjorgovska, S. Mojsova	Yeasts and moulds species evolving during production of traditional Beaten cheese	International conference of Agronomy and Food Science & Technology, 2019
		3.			
		4.			
		5.			
		6.			
11.	Mentoring undergraduate, postgraduate and doctoral students				
	11.1.	Diploma works			
	11.2.	Master theses			
	11.3.	Doctoral dissertations			
12.	For mentors of PhD studies, selected results in the last four/five years				
	12.1.	Evidence of printed scientific papers in international scientific journals in the field (maximum 6) in the last five years			
	12.2.	Evidence of at least two printed scientific papers in scientific journals with impact facto field in the last five years			
		No	Author	Title	Publisher / Year
	12.3.	Evidence of at least three participations on international meetings in last five years			
		No.	Author	Title	International meeting/ conference	Year

No:30	**Data for teaching staff and mentors of 3rd cycle of studies (PhD)**	
1.	Name and surname	**Mirko Prodanov**
2..	Date of birth	12.05.1983

3.	Level of education	VIII		
4.	Title of teaching-scientific, teaching-professional, teaching, scientific and associate titles	PhD, Doctor of Veterinary science Associate professor		
5.	Data on completed education, i.e. acquired academic and scientific degrees	Education	Year	Institution
		Higher education	2008	Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University from Skopje
		Master studies	2013	Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University from Skopje
		Doctoral studies	2016	Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University from Skopje
6.	Area, field and area of the scientific degree master's studies	Area	Field	Discipline
		4 Agricultural and veterinary sciences	4.03 Veterinary sciences	4.03.00.22 Food safety and veterinary public health
7.	Field, field and area of the scientific degree Doctor of Science with the corresponding code number of the scientific field of the doctorate thesis according to the International Frascati Classification of 2015 and relevant domestic acts that determine the scientific research fields of the third level - areas	Area	Field	Discipline
		4 Agricultural and veterinary sciences	4.03 Veterinary sciences	4.03.00.22 Food safety and veterinary public health
8.	If he/she is employed, name of the institution where he/she works, title and scientific field in which he/she was elected, according to the appropriate code number of the International Frascati Classification from 2015 and relevant domestic acts that determines the scientific research fields of the third level - fields	Institution	Title in which he was elected	Scientific field
		Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University from Skopje	Associate professor	4.03 Veterinary sciences
9.	List of courses that the teacher leads separately for the first, second and third cycle of studies			

	9.1.	List of courses taught by the teacher in the first cycle of studies		
		No	Course program title	Study program / Institution
		1.	Meat Hygiene and Technology	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		2.	Milk Hygiene and Technology	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		3.	Meat, Fish, Eggs and Honey – Hygiene and Technology	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		4.	Food Safety and Veterinary Public Health	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		5.	Veterinary Inspection	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		6.	Food Microbiology	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		7.	Current Food Safety Systems	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
	9.2.	List of courses taught by the teacher in the second cycle of studies		
		No	Course program title	Study program / Institution
		1.	Hygiene and Technology of meat and meat products	Food Safety and Quality with Veterinary Public Health / Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje
		2.	Hygiene and Technology of Milk and Dairy Products	Food Safety and Quality with Veterinary Public Health / Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje
		3.	HACCP in Food Production	Food Safety and Quality with Veterinary Public Health / Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje
		4.	Animal feed hygiene	Food Safety and Quality with Veterinary Public Health / Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje

		5.	By-products of animal origin	Food Safety and Quality with Veterinary Public Health / Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje	
		6.	Sampling methods and techniques for feed and animal feed (for testing of residues, contaminants and microbiological criteria)	Food Safety and Quality with Veterinary Public Health / Faculty of veterinary medicine-Skopje, Ss Cyril and Methodius University in Skopje	
	9.3	List of courses taught by the teacher in the third cycle of studies			
		No	Course program title	Study program / Institution	
		1.	Food Safety and Veterinary Public Health	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje	
		2.	Food Microbiology	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje	
		3.	Molecular-genetic methods for the epidemiology of food poisoning	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje	
10.	Selected results in the last five years				
	10.1.	Relevant published scientific papers (maximum 5)			
		No	Author	Title	Publisher / Year
		1.	Igor Tomasevic, Danijela Bursać Kovačević, Anet Režek, Jambrak, Szendrő Zsolt, Antonella Dalle Zotte, Aleksandra Martinović, Mirko Prodanov, Bartosz Sołowiej, Alexandrina Sirbu, Jonel Subić, Svetlana Roljević, Anastasia Semenova, Miro Kročko, Viera Duckova, Andriy Getya, Oksana Kravchenko, Ilija Djekic	*Comprehensive insight into the food safety climate in Central and Eastern Europe*	Food control, Elsevier/ 2020

		2.	Igor Tomasevic, Danijela Bursać Kovačević, Anet Režek, Jambrak, Szendrő Zsolt, Antonella Dalle Zotte, Aleksandra Martinović, Mirko Prodanov, Bartosz Sołowiej, Alexandrina Sirbu, Jonel Subić, Svetlana Roljević, Anastasia Semenova, Miro Kročko, Viera Duckova, Andriy Getya, Oksana Kravchenko, Ilija Djekic	*Validation of novel food safety climate components and assessment of their indicators in Central and Eastern European food industry*	Food control, Elsevier/ 2020
		3.	Maksud Kerluku, Dean Jankuloski, Marija Ratkova Manovska, Mirko Prodanov, Biljana Stojanovska Dimzoska, Aleksandar Dodovski, Katerina Blagoevska	*β-Lactamase Genes (blaCTX-M, blaSHV, blaTEM, blaOXA1 and blaOXA2) and Phylogenetic Groups in ESBL Producing Commensal Escherichia coli Isolated from Faecal Samples from Dairy Farm in the Municipality of Debar*	Macedonian Veterinary Review/ 2023
		4.	Herluku Maksud, Marija Ratkova Manovska, Mirko Prodanov, Biljana Stojanovska-Dimzoska, Zehra Hajrulai-Musliu, Dean Jankuloski, and Katerina Blagoevska	*Phenotypic and Genotypic Analysis of Antimicrobial Resistance of Commensal Escherichia coli from Dairy Cows' Feces*	Processes/2023
		5.			
	10.2.	Participation in national and international scientific-research projects (maximum 5)			
		No	Role in the project (project manager or participant)	Title	Time duration pf the project The institution from which everything is organized, financed, implemented
		1.	Faculty of Veterinary Medicine – Skopje	*Immunohistochemical identification of the morphological types if skeletal muscle fibers in lambs in the period of postnatal development and applicative use as indicators for evaluation of the quality of the lamb meat*	2014

		2.	COST FA1404 - COREMI	*One health overview of PRM infestation and treatment – interdisciplinary approach*	2018
		3.	COST CA18105 – RIBMINS	*Risk-based meat inspection and integrated meat safety assurance*	2019
		4.	COST CA23152	*Building Consensus on Biofilm Regulatory Decision Making (RegulatoryToolBox)*	2024
		5.			
	10.3.	Published books in the last five years (maximum 5)			
		No	Author	Title	Publisher / Year
		1.	д-р Павле Секуловски, д-р Андреј Кирбиш, д-р Мирко Проданов, д-р Мања Крижман и д-р Петра Распор Лаиншчек	*Ветеринарно-санитарен надзор над животните за колење месо*	Универзитет „Св. Кирил и Методиј“ во Скопје/2015
	10.4.	Published professional papers in the last five years (maximum 5)			
		No	Author	Title	Publisher / Year
		1.	Mirko Prodanov, Miroslav Kjosevski	*Implementation of Risk management in ISO/IEC 17025:2018 accredited laboratories*	Fifth international conference “Quality and competence 2022”
		2.	Mirko Prodanov, Marija Ratkova Manovska, Sandra Mojsova, Ljupco Angelovski, Dean Jankuloski	*Bacterial contamination in different stages of poultry slaughtering process*	Book of abstracts: 9th International scientific meeting days of veterinary medicine 2022
		3.	Marija Ratkova Manovska, Mirko Prodanov, Dean Jankuloski, Pavle Sekulovski, Katerina Blagoevska	*Enterotoxigenic staphylococcus strains isolated from raw milk and dairy products from R. N. Macedonia*	Book of abstracts: 9th International scientific meeting days of veterinary medicine 2022
		4.	Marija Ratkova Manovska, Mirko Prodanov, Dean Jankuloski, Pavle Sekulovski, Katerina Blagoevska	*Detection of enterotoxigenic potential of Staphylococcus aureus isolates from cheese samples with two different methods*	Mac Vet Rev 2022

		5.	Ljupco Angelovski, Zagorka Popova, Katerina Blagoevska, Sandra Mojsova, Marija Ratkova Manovska, Mirko Prodanov, Dean Jankuloski, Pavle Sekulovski	*Prevalence, Detection of Resistance Genes and Antimicrobial Resistance of Campylobacter jejuni in Broilers in North Macedonia*	Veterinary Sciences: Research and Reviews / 2021
		6.	Marija Ratkova Manovska, Mirko Prodanov, Ljupcho Angelovski, Dean Jankuloski, Pavle Sekulovski	*Prevalence of the enterotoxigenic Staphylococcus aureus strains isolated from raw milk and cheese produced in North Macedonia*	Mac Vet Rev 2021

No: 31	**Data for teaching staff and mentors of 3rd cycle of studies (PhD)**			
1.	Name and surname	**Aleksandar Cvetkovikj**		
2..	Date of birth	31.03.1977		
3.	Level of education	VIII		
4.	Title of teaching-scientific, teaching-professional, teaching, scientific and associate titles	PhD, Doctor of Veterinary science Associate professor		
5.	Data on completed education, i.e. acquired academic and scientific degrees	Education	Year	Institution
		Higher education	2002	Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje
		Master studies	2009	Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje
		Doctoral studies	2013	St. Clement of Ohrid University in Bitola, Biotechnical Faculty
6.	Area, field and area of the scientific degree master's studies	Area	Field	Discipline
		4 Agricultural and veterinary sciences	4.03 Veterinary sciences	4.03.00.12 Diseases of fish, bees and game
7.	Field, field and area of the scientific degree Doctor of Science with the corresponding code number of the scientific field of the doctorate thesis according to the International Frascati Classification of 2015 and relevant domestic acts that determine the scientific research fields of the third level - areas	Area	Field	Discipline
		4 Agricultural and veterinary sciences	4.03 Veterinary sciences	4.03.00.20 Therapy and animal health
8.	If he/she is employed, name of the institution where he/she	Institution	Title in which he was elected	Scientific field

	works, title and scientific field in which he/she was elected, according the appropriate code number of the International Frascati Classification from 2015 and relevant domestic acts that determines the scientific research fields of the third level - fields		Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje	Associate professor	4.03 Veterinary sciences 4.03.00.20 Therapy and animal health
9.	List of courses that the teacher leads separately for the first, second and third cycle of studies				
	9.1.	List of courses taught by the teacher in the first cycle of studies			
		No	Course program title	Study program / Institution	
		1.	Parasitology and Parasitic Diseases 1	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje	
		2.	Parasitology and Parasitic Diseases 2	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje	
		3.	Veterinary Entomology	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje	
		4.	Tropical Parasitic Diseases	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje	
		5.	Veterinary Clinical Parasitology	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje	
		6.	Parasitological Cases	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje	
		7.	Parasitology in Public Health	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje	
	9.2.	List of courses taught by the teacher in the second cycle of studies			
		No	Course program title	Study program / Institution	
		1.			
	9.3.	List of courses taught by the teacher in the third cycle of studies			
		No	Course program title	Study program / Institution	
		1.	Laboratory diagnostics in veterinary parasitology	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje	
		2.	Parasitic diseases of game	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje	
		3.	Parasitic zoonoses	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje	
		4.	Immunoparasitology	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje	
		5.	Ectoparasites of medical and veterinary importance	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje	

		6.	Vector entomology	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje
		7.	Population control of arthropod vectors	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje
		8.	Surveillance and capture of arthropod vectors	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje
		9.	Fisheries, aquaculture and fish health protection	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje
		10.	Beekeeping and bee health protection	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje

10.	Selected results in the last five years				
	10.1.	Relevant published scientific papers (maximum 5)			
		No	Author	Title	Publisher / Year
		1.	Attila J. Trájer, Ina Hoxha, Betim Xhekaj, Katharina Platzgummer, Vit Dvořák, Adelheid G. Obwaller, Jovana Stefanovska, Aleksandar Cvetkovikj, Julia Walochnik, Kurtesh Sherifi, Edwin Kniha	Ecological setting of phlebotomine sand flies in the Republic of Kosovo	Heliyon 10, e.33029, 2024.
		2.	Miroslav Agarski, Vojislava Bursić, Gorica Vuković, Nikola Puvača, Aleksandra Petrović, Bojan Konstantinović, Dragana Ljubojević Pelić, Aleksandar Cvetkovikj, Marijana Ćurčić	Detection of glyphosate and its metabolite aminomethylphosphonic acid-Risk assessment for the aquatic organisms	Journal of Central European Agriculture 25 (2), 567-579, 2024.
		3.	Naida Kapo, Ivana Zuber Bogdanović, Ema Gagović, Marina Žekić, Gorana Veinović, Ratko Sukara, Darko Mihaljica, Bojan Adžić, Përparim Kadriaj, Aleksandar Cvetkovikj, Igor Djadjovski, Aleksandar Potkonjak, Enkelejda Velo, Sara Savić, Snežana Tomanović, Jasmin Omeragić, Relja Beck, Adnan Hodžić	Ixodid ticks and zoonotic tick-borne pathogens of the Western Balkans	Parasites & Vectors 17:45, 2024.

		4.	Aleksandar Trajchovski, Igor Djadjovski, Kiril Krstevski, Zagorka Popova-Hristovska, Martin Nikolovski, Ljubica Rashikj, Dimitar Bozinovski, Angela Grujovska, Niccolò Vendramin, Argelia Cuenca, Aleksandar Cvetkovikj	Distribution and genotyping of infectious hematopoietic necrosis virus in farmed rainbow trout and autochthonous salmonids in North Macedonia	Macedonian Veterinary Review 47 (1): 37-43, 2024.
		5.	Aleksandar Cvetkovikj, Ljubica Rashikj, Boris Dimitrievski, Aleksandar Trajchovski, Ivana Shikoska, Petre Dimov, Iskra Cvetkovikj, Jovana Stefanovska	First report of bovine coenurosis in North Macedonia	Macedonian Veterinary Review 47 (1): 65-70, 2024.
	10.2.	Participation in national and international scientific-research projects (maximum 5)			
		No	Role in the project (project manager or participant)	Title	Time duration pf the project The institution from which everything is organized, financed, implemented
		1.	Participant	Enhancing National Capabilities for Early and Rapid Detection of Priority Vector Borne Diseases of Animals (Including Zoonoses) by Means of Molecular Diagnostic Tools	IAEA RER5023, 2018 – 2020.
		2.	Participant	One Health Network For The Prevention Of Vector-Borne Diseases Around The Mediterranean And Sahel Regions.	MediLabSecure, 2019 – 2021.
		3.	Participant	Improving Early Detection and Rapid Response to Potential Outbreaks of Priority Animal and Zoonotic Diseases.	IAEA RER5025, 2020 – 2022.
		4.	Participant, National coordinator	Enhancing the Capacity to Integrate Sterile Insect Technique in the Effective Management of Invasive Aedes Mosquitoes. Project Counterpart.	IAEA RER5026, 2021 – 2023.
		5.	Participant	Enhancing Preparedness Capacities of the Veterinary Sector to Confront with Emerging and Re-emerging Diseases of Livestock and Wildlife.	IAEA RER5027, 2022-2024.
	10.3.	Published books in the last five years (maximum 5)			

		No	Author	Title	Publisher / Year	
		1.	Hijran Yavuzcan Yildiz, Vladimir Radosavljevic, Giuliana Parisi, Aleksandar Cvetkovikj	Insight into Risks in Aquatic Animal Health in Aquaponics. In: Goddek S., Joyce A., Kotzen B., Burnell G. (eds) Aquaponics Food Production Systems	Springer International Publishing / 2019.	
		2.	Jovana Stefanovska, Aleksandar Cvetkovikj	Practicum for parasitology and parasitic diseases	Faculty of veterinary medicine – Skopje / 2021.	
	10.4.	Published professional papers in the last five years (maximum 5)				
		No	Author	Title	Publisher / Year	
		1.				
11.	Mentoring undergraduate, postgraduate and doctoral students					
	11.1.	Diploma works		3		
	11.2.	Master theses				
	11.3.	Doctoral dissertations		1		
12.	For mentors of PhD studies, selected results in the last four/five years					
	12.1.	Evidence of printed scientific papers in international scientific journals in the field (maximum 6) in the last five years				
		No	Author	Title	Publisher / Year	
		1.	Same as 10.1			
	12.2.	Evidence of at least two printed scientific papers in scientific journals with impact factor in the field in the last five years				
		No	Author	Title	Publisher / Year	
		1.	Same as 10.1			
	12.3.	Evidence of at least three participations on international meetings in last five years				
		No.	Author	Title	International meeting/ conference	Year
		1.	Ljubica Rashikj, Aleksandar Cvetkovikj, Ivana Arsovska, Iskra Cvetkovikj, Jovana Stefanovska	Prevalence and genetic characterization of *Echinococcus granulosus* in domestic ruminants in North Macedonia	Days of Veterinary Medicine 2022", Ohrid, North Macedonia.	2022
		2.	Stevan Canak, Nebojsa Savic, Aleksandar Trajchovski, Aleksandar Cvetkovikj	Risks in trout aquaculture in Serbia, Bosnia and Herzegovina and North Macedonia	The 6th International Symposium on Agricultural Engineering - ISAE 2023, Belgrade, Serbia.	2023
		3.	Radosavljevic Vladimir, Cvetkovikj Aleksandar, Zuko Almedina, Jazic Adnan, Markovic Zoran	Overview of Freshwater Fish Diseases Situation in Western Balkans – Serbia, North Macedonia, and Bosnia and Herzegovina	14th International Aquaculture Conference, Vukovar, Croatia.	2023

No: 32	**Data for teaching staff and mentors of 3rd cycle of studies (PhD)**			
1.	Name and surname	**Branko Angjelovski**		
2..	Date of birth	14.06.1981		
3.	Level of education	VIII		
4.	Title of teaching-scientific, teaching-professional, teaching, scientific and associate titles	PhD, Doctor of Veterinary science Associate professor		
5.	Data on completed education, i.e. acquired academic and scientific degrees	Education	Year	Institution
		High education	2007	Faculty of veterinary medicine, Skopje, Macedonia University Ss. "Cyril and Methodius" in Skopje
		Master studies	/	/
		Doctoral studies	2017	Faculty of veterinary medicine, Skopje, Macedonia University Ss. "Cyril and Methodius" in Skopje
6.	Area, field and area of the scientific degree master's studies	Area	Field	Discipline
		/	/	/
7.	Field, field and area of the scientific degree Doctor of Science with the corresponding code number of the scientific field of the doctorate thesis according to the International Frascati Classification of 2015 and relevant domestic acts that determine the scientific research fields of the third level - areas	Area	Field	Discipline
		4 Agricultural and veterinary sciences	4.03 Veterinary sciences	4.03.00.10 Diseases of non-ruminant (monogastric) and small animals
8.	If he/she is employed, name of the institution where he/she works, title and scientific field in which he/she was elected, according the appropriate code number of the International Frascati Classification from 2015 and relevant domestic acts that determines the scientific research fields of the third level - fields	Institution	Title in which he was elected	Scientific field
		Faculty of veterinary medicine, Skopje, Macedonia, University Ss. "Cyril and Methodius" in Skopje	Associate professor	4.03 Veterinary sciences

9.	List of courses that the teacher leads separately for the first, second and third cycle of studies			
	9.1.	List of courses taught by the teacher in the first cycle of studies		
		No	Course program title	Study program / Institution
		1.	Swine Diseases	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		2.		
		3.		
		4.		
		5.		
	9.2.	List of courses taught by the teacher in the second cycle of studies		
		No	Course program title	Study program / Institution
		1.		
		2.		

	9.3.	List of courses taught by the teacher in the third cycle of studies		
		No	Course program title	Study program / Institution
		1.	Viral diseases in pigs	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje
		2.	Bacterial diseases in pigs	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje
		3.	Non-infectious diseases in pigs	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje
		4.	Laboratory diagnostics of pig diseases	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje
		5.	Management of postpartum uterine infections in domestic animals	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje
10.	Selected results in the last five years			
	10.1.	Relevant published scientific papers (maximum 5)		
		No	Author	Title	Publisher / Year
		1.	**Branko Angjelovski**, Aleksandar Janevski, Elena Atanaskova-Petrov, Clara Marin Orenga, Jovan Bojkovski	Serological profile and pleurisy lesions associated with Actinobacillus pleuropneumoniae in pig farms in North Macedonia	Veterinarski glasnik 77 (2),2023
		2.	**Branko Angjelovski**, Clara Marin Orenga, Aleksandar Janevski, Aleksandar Dodovski, Radisa Prodanovic, Jovan Bojkovski	Profiling mycoplasma hyopneumoniae infection in commercial pig farms using serology and lung lesions assessment	Macedonian Veterinary review 46 (2), 2023
		3.	Jovan Bojkovski, Jasna Prodanov-Radulović, Sreten Nedić, Sveta Arsić, Miloje Đurić, Aleksandra Mitrović, Jadranka Žutić, Jasna Kureljušić, Ivan Pavlović, Nemanja Zdravković, Branislav Kureljušić, **Branko Angjelovski**, Dragoş Constantin Anita, Luanda Oslbanu, Adriana Elena Anita, Radiša Prodanović	Mycoplasmatic (enzootic) pneumonia of pigs as a health problem in fattening units	Scientific Papers – vol. 66 no 3 / 2023, series Veterinary Medicine

		4.	Jovan Bojkovski, Branislav Kureljušić, Jasna Prodanov Radulović, Dragos Anita, Luanda Oslobanu, Adriana Elena Anita, **Branko Angjelovski,** Nemanja Zdravković, Ivan Pavlović, Jasna Kureljušić, Sveta Arsić, Sreten Nedić, Miloje Đurić, Eleni Tzika, Ioannis A Tsakmakidis, Aleksandra Mitrović, Radiša Prodanović	The role of viral infections in the devolopment of respiratory disease in swine	Scientific Papers Journal – vol. 65 no 4 /2022, VETERINARY SERIES
		5.	**Branko Angjelovski,** Branko Atanasov, Miroslav Kjosevski	Virulence genes of Escherichia coli vaginal isolates associated with postpartum dysgalactia syndrome in sows	Journal of Swine Health and Production, 29(6), 2021
	10.2.	Participation in national and international scientific-research projects (maximum 5)			
		No	Role in the project (project manager or participant)	Title	Time duration of the project The institution from which everything is organized, financed, implemented
		1.	Participant	National platform for improving biosecurity in Dairy cattle farms (NAPIB)	2020-2021 EuFMD
		2.	Participant	Biosecurity Enhanced Through Training Evaluation and Raising Awareness (BETTER)	2021-2025 COST Action CA20103 European union
		3.	Participant	European swine influenza network (ESFLU)	2022-2026 COST Action CA21132
		4.	Participant	*"*FEPC for North Macedonia and Biosecurity Assessment and Scoring In Cows – Regional Approach (BASIC)	2023 EuFMD
		5.	Project manager	Genetic diversity of swine influenza viruses A and their implication to intensive pig production and public health	Faculty of veterinary medicine, Skopje, Macedonia 2023-2025
	10.3.	Published books in the last five years (maximum 5)			
		No	Author	Title	Publisher / Year
		1.	Miroslav Kjosevski, Branko Angjelovski, Aleksandar Dodovski, Aleksandar Janevski, Kiril Krstevski, Igor Dzadzovski	Manual for biosecurity and biosecurity measures in dairy cattle farms	Faculty of veterinary medicine, Skopje, Macedonia, 2021
	10.4.	Published professional papers in the last five years (maximum 5)			

		No	Author	Title	Publisher / Year
		1.	Branko Angjelovski, Igor Djadjovski, Zagorka Popova, Kiril Krstevski	First detection of porcine epidemic diarrhea virus in Macedonia	Book of proceedings of XVII Symposium of Health Protection, Selection and Reproduction of Pigs, 2019.
		2.	Jovan Bojkovski, Becskei Z, Branislav Kureljusic, Ivan Pavlovic, Nemanja Zdravkovic, Jasna ProdanovRadulović, Teodora Vasiljevic, **Branko Angjelovski**, Jan Plut, Ivan Dobrosavljevic, Jelena Maletic, Susana Dedovic, Branislav Stankovic	Biosecurity and health care on commercial pig farms.	Zdravstvena zastita kopitara, papkara,zivine I mesojada, Cetvrti simpozium sa medjunarodnim ucesce, 2022.
		3.	Jovan Bojkovski, Nemanja Zdravković, Jadranka Žutić, Oliver Radanović, Ivan Pavlović, Jasna Prodanov Radulović, Sveta Arsić, Sreten Nedić, **Branko Angjelovski,** Ivan Dobrosavljević, Radiša Prodanović, Dmitar Nakov, Miloje Đurić	Bronchopneumonia as a health problem on pig farms (research review)	Lucrări ştiinţifice medicină veterinară Timişoara, 2022
		4.	Jovan BOJKOVSKI, Jasna PRODANOV-RADULOVIĆ, Sreten NEDIĆ, Sveta ARSIĆ, Miloje DJURIĆ, Aleksandra MITROVIĆ, Jadranka ŽUTIĆ, Jasna KURELJUŠIĆ, Ivan PAVLOVIĆ, Nemanja ZDRAVKOVIĆ, Branislav KURELJUŠIĆ3, **Branko ANGJELOVSKI,** Dragoş Constantin ANIŢĂ, Luanda OSLBANU, Adriana Elena ANITA, Radiša PRODANOVIĆ	Mycoplasmatic (enzootic) pneumonia of pigs as a health problem in fattening units	Scientific Papers – vol. 66 no 3 / 2023, series Veterinary Medicine
11.	Mentoring undergraduate, postgraduate and doctoral students				
	11.1.	Diploma works			
	11.2.	Master theses			
	11.3.	Doctoral dissertations			
12.	For mentors of PhD studies, selected results in the last four/five years				
	12.1.	Evidence of printed scientific papers in international scientific journals in the field (maximum 6) in the last five years			
		No	Author	Title	Publisher / Year
		1.			
		2.			
		3.			

		4.			
		5.			
		6.			
	12.2.	Evidence of at least two printed scientific papers in scientific journals with impact factor in the field in the last five years			
		No	Author	Title	Publisher / Year
		1.			
		2.			
	12.3.	Evidence of at least three participations on international meetings in last five years			
		No.	Author	Title	International meeting/ conference / Year
		1.			
		2.			

No: 33	**Data for teaching staff and mentors of 3rd cycle of studies (PhD)**			
1.	Name and surname	**Ivica Gjurovski**		
2..	Date of birth	05.08.1984.		
3.	Level of education	VIII		
4.	Title of teaching-scientific, teaching-professional, teaching, scientific and associate titles	PhD, Doctor of Veterinary science Associate professor		
5.	Data on completed education, i.e. acquired academic and scientific degrees	Education	Year	Institution
		High education	2008	Faculty of veterinary medicine-Skopje, Ss. Cyril and Methodius University in Skopje
		Master studies		
		Doctoral studies	2018	Faculty of veterinary medicine-Skopje, Ss. Cyril and Methodius University in Skopje
6.	Area, field and area of the scientific degree master's studies	Area	Field	Discipline
7.	Field, field and area of the scientific degree Doctor of Science with the corresponding code number of the scientific field of the doctorate thesis according to the International Frascati Classification of 2015 and relevant domestic acts that determine the scientific research fields of the third level - areas	Area	Field	Discipline
		4 Agricultural and veterinary sciences	4.03 Veterinary sciences	4.03.00.07 Pathomorphology and forensic veterinary medicine
8.	If he/she is employed, name of the institution	Institution	Title in which he was elected	Scientific field

	where he/she works, title and scientific field in which he/she was elected, according the appropriate code number of the International Frascati Classification from 2015 and relevant domestic acts that determines the scientific research fields of the third level - fields	Faculty of Veterinary Medicine- Skopje	Associate Professor of Veterinary Medicine medicine	4.03 Veterinary sciences

9.	List of courses that the teacher leads separately for the first, second and third cycle of studies			
	9.1.	List of courses taught by the teacher in the first cycle of studies		
		No	Course program title	Study program / Institution
		1.	Basic Pathology	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		2.	Special Veterinary Pathology	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		3.	Forensic Veterinary Medicine and Veterinary Ethics	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		4.	Oncology	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		5.	Dermatopathology	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		5.		
		6.		
	9.2.	List of courses taught by the teacher in the second cycle of studies		
		No	Course program title	Study program / Institution
		1.		
		2.		
		3		
		4		
	9.3.	List of courses taught by the teacher in the third cycle of studies		
		No	Course program title	Study program / Institution
		1.	Pathological morphology	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje
		2.	Forensic veterinary medicine and veterinary medicine Ethics	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje
		3	Oncology	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje
		4	Dermatopathology	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje
10	Selected results in the last five years			
	10.1.	Relevant published scientific papers (maximum 5)		
		No	Author	Title	Publisher / Year

		1.	Ivica Gjurovski1, Monika Dovenska1, Slavica Kostadinova Kunovska2, Jordanco Milosevski3, Vesna Levajkovic Trajkov3, Trpe Ristoski1	*Mammary adenocarcinoma with widespread metastasis in a lion (Panthera Leo)*	Mac Vet Rev 2019; 42 (2): i-ix
		2.	Ivica Gjurovski1 , Spiro Bozinovski1 , Emilija Murdzevska1 , Todor Novakov1 , Mehmet Fatih Bozkurt2 , Trpe Ristoski1	*IMMUNOHISTOCHEMICAL DIAGNOSTIC CHARACTERISTICS OF PARVOVIRUS INFECTION IN DOGS*	Mac Vet Rev 2023; 46 (2): i-vi
		3.	Todor NOVAKOV1*, Ivica GJUROVSKI1, Spiro BOZINOSKI1, Aleksandar JANEVSKI1, Elena ATANASKOVA PETROV1, Slavica KOSTADINOVA KUNOVSKA2, Trpe RISTOSKI1	*IMMUNOHISTOCHEMICAL INVESTIGATION OF FIPV3-70 ANTIGEN EXPRESSION IN THE ILEUM OF CATS WITH EFFUSIVE FELINE INFECTIVE PERITONITIS*	Acta Veterinaria-Beograd 2023, 73 (3), 432-438 UDK: 636.8.09:616.98-097 DOI: 10.2478/acve-2023-0032
		4.	Irena Celeska, Martin Nikolovski, Todor Novakov, Anastasija Angelovska, Ivica Gjurovski, Elena Atanaskova Petrov	*RETROSPECTIVE STUDY ON TRILOSTANE TITRATION DOSE TREATMENT IN DOGS WITH TERMINAL STAGE OF HYPERADRENOCORTICISM*	Mac Vet Rev 2024; 47 (1): i-vii
		5.	Todor Novakov, Ivica Gjurovski, Spiro Bozinovski, Aleksandar Janevski, Nikola Adamov, Trpe Ristoski	*IMMUNOHISTOCHEMICAL DETECTION OF CD3 AND MAC387 ANTIBODIES IN THE MESENTERIC LYMPH NODES AND THE SMALL INTESTINE OF 20 DOGS THAT DIED OF CANINE PARVOVIRAL ENTERITIS*	Mac Vet Rev 2024; 47 (1): i-vi
	10.2	Participation in national and international scientific-research projects (maximum 5)			
		No	Role in the project (project manager or participant)	Title	Time duration pf the project The institution from which everything is organized, financed, implemented

		1.	Participant	*Application of immunohistochemical method in diagnostics of viral diseases in pets*	2020/2022 University of St. Cyril and Methodius - Skopje, Faculty of Veterinary Medicine-Skopje
		2.	Participant	Training course for pathohistological, pathological, biochemical and molecular assessment of pathological conditions and diseases in animals funded by IAEA (Colleague: Tserenjav JARGALSAIKHAN, IAEA TC project: Improvement of the analytical equipment for prevention, diagnostics and surveillance of diseases in animals)	02/11/2014 – 30/01/2015, Skopje, Macedonia
		3.	Participant	*"Non-enzymatic reduction of oxidative stress in chemotherapy-induced oral mucositis - animal model",*	*2023-2024 University of St. Cyril and Methodius - Skopje, Faculty of Dentistry – Skopje*
		4.			
		5.			
	10.3	Published books in the last five years (maximum 5)			
		No	Author	Title	Publisher / Year
		1.			
		2.			
		3.			
		4.			
		5.			
	10.4	Published professional papers in the last five years (maximum 5)			
		No	Author	Title	Publisher / Year
		1.			
		2.			
		3.			
		4.			
		5.			
		6.			
11	Mentoring undergraduate, postgraduate and doctoral students				
	11.1	Diploma works			
	11.2	Master theses			
	11.3	Doctoral dissertations			
12	For mentors of PhD studies, selected results in the last four/five years				
	12.1	Evidence of printed scientific papers in international scientific journals in the field (maximum 6) in the last five years			
		No	Author	Title	Publisher / Year
		1.			
		2.			
		3.			
		4.			
		5.			
		6.			

	12.2	Evidence of at least two printed scientific papers in scientific journals with impact factor in the field in the last five years			
		No	Author	Title	Publisher / Year
		1.	Todor Novakov, Ivica Gjurovski, Spiro Bozinovski, Aleksandar Janevski, Nikola Adamov, Trpe Ristoski	IMMUNOHISTOCHEMICAL DETECTION OF CD3 AND MAC387 ANTIBODIES IN THE MESENTERIC LYMPH NODES AND THE SMALL INTESTINE OF 20 DOGS THAT DIED OF CANINE PARVOVIRAL ENTERITIS	Mac Vet Rev 2024; 47 (1): i-vi
		2.	Ivica Gjurovski, Spiro Bozinovski, Emilija Murdzevska, Todor Novakov, Mehmet Fatih Bozkurt, Trpe Ristoski	IMMUNOHISTOCHEMICAL DIAGNOSTIC CHARACTERISTICS OF PARVOVIRUS INFECTION IN DOGS	Mac Vet Rev 2023; 46 (2): i-vi
	12.3	Evidence of at least three participations on international meetings in last five years			
		No.	Author	Title	International meeting/ conference	Year
		1.	*Trpe Ristoski, Mehmet Fatih Bozkurt, Ivica Gjurovski, Spiro Bozinoski, Aleksandar Janevski*	*"Metastatic pancreatic adenocarcinoma" 9th International scientific meeting*	*Days of Veterinary Medicine, Ohrid.*	*2022*
		2.	*Gjurovski Ivica, Slavica Kostadinova Kunovska, Jordanco Milosevski, Vesna Levajkovic-Trajkov, Ristoski Trpe.*	*"Facial Myxofibrosarcoma in a lion (Pantera Leo)"*	*Joint Congress of Veterinary Clinical Pathology (ECVP/ECVCP Congress),*	*September 25-28.2019 in Arnhem, the Netherlands*

No: 34		**Data for teaching staff and mentors of 3rd cycle of studies (PhD)**		
1.	Name and surname	**Martin Nikolovski**		
2..	Date of birth	12.09.1984		
3.	Level of education	VIII		
4.	Title of teaching-scientific, teaching-professional, teaching, scientific and associate titles	PhD, Doctor of Veterinary science Associate professor		
5.	Data on completed education, i.e.	Education	Year	Institution

	acquired academic and scientific degrees	High education	2011	Ss. Cyril and Methodius University in Skopje, Faculty of Veterinary Medicine in Skopje
		Master studies	/	/
		Doctoral studies	2019	Ss. Cyril and Methodius University in Skopje, Faculty of Veterinary Medicine in Skopje
6.	Area, field and area of the scientific degree master's studies	Area	Field	Discipline
		/	/	/
7.	Field, field and area of the scientific degree Doctor of Science with the corresponding code number of the scientific field of the doctorate thesis according to the International Frascati Classification of 2015 and relevant domestic acts that determine the scientific research fields of the third level - areas	Area	Field	Discipline
		4 Agricultural and veterinary sciences	4.03 Veterinary sciences	4.03.00.03 Physiology
8.	If he/she is employed, name of the institution where he/she works, title and scientific field in which he/she was elected, according the appropriate code number of the International Frascati Classification from 2015 and relevant domestic acts that determines the scientific research fields of the third level - fields	Institution	Title in which he was elected	Scientific field
		Faculty of Veterinary Medicine in Skopje, Ss. Cyril and Methodius University in Skopje	Assistant professor	4.03 Veterinary sciences

9. List of courses that the teacher leads separately for the first, second and third cycle of studies

9.1. List of courses taught by the teacher in the first cycle of studies

No	Course program title	Study program / Institution
1.	Animal Physiology 1	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
2.	Animal Physiology 2	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
3.	Exotic Animals Physiology	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
4.	Comparative Physiology	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
5.		
6.		

9.2. List of courses taught by the teacher in the second cycle of studies

No	Course program title	Study program / Institution
1.		

		2.			
	9.3.	List of courses taught by the teacher in the third cycle of studies			
		No	Course program title	Study program / Institution	
		1.	Selected topics in animal physiology	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje	
		2.	Selected topics in fish physiology	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje	
		3.	Selected topics in avian physiology	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje	
10.	Selected results in the last five years				
	10.1.	Relevant published scientific papers (maximum 5)			
		No	Author	Title	Publisher / Year
		1.	Nikolovski, M., Dovenska, M., Bozhinovski, D., Mickov, L., Atanasov, B., Porchu, K., Dzabirski, V., Petkov, V., Dovenski, T.	The effect of extending ram sperm before and after cryopreservation on their viability and velocity	Journal of Agricultural, Food and Environmental Sciences (Faculty of Agricultural Sciences and Food in Skopje) 2022
		2.	Janevski, A., Nikolovski, M., Cvetkovikj, I., Andreevska, S., Todorovski, A., Mitrov, D.	Clinical mastitis incidence in small-scale dairy cow farms	Macedonian Veterinary Review (FVMS, UKIM) 2023
		3.	Dovenska, M., Atanasov, B., Benc, M., Nikolovski, M., Pendovski L, Laurincik J., Dovenski T, Adamov N., Popovska-Percinic F.	Brilliant cresyl blue staining enhances the morphological quality evaluation of porcine oocytes–a preliminary study	Macedonian Veterinary Review (FVMS, UKIM) 2023
		4.	Stojanov, B., Atanasov, B., Grizelj, J., Vince, S., Ilievska, K., Nikolovski, M., Dovenski, T., Samardzija, M.	External progesterone supplementation during the ovsynch protocol reduces the incomplete luteolysis in dairy cows under heat stress	Macedonian Veterinary Review (FVMS, UKIM) 2024
		5.	Celeska, I., Nikolovski, M., Novakov, T., Angelovska, A., Gjurovski, I., Petrov, E. A.	Retrospective study on trilostane titration dose treatment in dogs with terminal stage of hyperadrenocorticism	Macedonian Veterinary Review (FVMS, UKIM) 2024
	10.2.	Participation in national and international scientific-research projects (maximum 5)			
		No	Role in the project (project manager or participant)	Title	Time duration of the project The institution from which everything is organized, financed, implemented

		1.	Participant	Validation of 19 microsatellite DNA markers for individual identification and testing of paternity and maternity in dogs (*Canis lupus familiaris*)	12 months Ss. Cyril and Methodius University in Skopje, Faculty of Veterinary Medicine – Skopje
		2.	Participant	Cryoconservation of dog sperm, endoscopic examination and transcervical endoscopic insemination	12 months Ss. Cyril and Methodius University in Skopje
		3.	Participant	Determination of prevalence and incidence of abortion caused by *Neospora caninum* in dairy farms in R. N. Macedonia	24 months Ss. Cyril and Methodius University in Skopje, Faculty of Veterinary Medicine – Skopje
		4.	Participant	Antimicrobial resistance in bacteria isolated in pets in R. N. Macedonia	24 months Ss. Cyril and Methodius University in Skopje, Faculty of Veterinary Medicine – Skopje
		5.	Participant	Regenerative medicine – Use of platelet-rich plasma in innovative therapeutical approaches for small pets	12 months Ss. Cyril and Methodius University in Skopje
	10.3.	Published books in the last five years (maximum 5)			
		No	Author	Title	Publisher / Year
		1.	Lazo Pendovski, Joze Starisic, Halil S. Selcuk, Miroslav Kjosevski, Igor Ulchar, Zehra H. Musliu, Martin Nikolovski, Ksenija Ilievska, Florina Popovska-Percinic	Animal management in disasters - Basic principles (ISBN: 978-9989-774-41-6)	Ss. Cyril and Methodius University in Skopje, Faculty of Veterinary Medicine – Skopje 2023
		2.			
		3.			
		4.			
		5.			
	10.4.	Published professional papers in the last five years (maximum 5)			
		No	Author	Title	Publisher / Year
		1.			
		2.			
		3.			
		4.			
		5.			
		6.			
11.	Mentoring undergraduate, postgraduate and doctoral students				
	11.1.	Diploma works		/	
	11.2.	Master theses		/	
	11.3.	Doctoral dissertations		/	

12.	For mentors of PhD studies, selected results in the last four/five years				
	12.1.	Evidence of printed scientific papers in international scientific journals in the field (maximum 6) in the last five years			
		No	Author	Title	Publisher / Year
		1.			
		2.			
		3.			
		4.			
		5.			
		6.			
	12.2.	Evidence of at least two printed scientific papers in scientific journals with impact factor in the field in the last five years			
		No	Author	Title	Publisher / Year
		1.			
		2.			
	12.3.	Evidence of at least three participations on international meetings in last five years			
		No.	Author	Title	International meeting/ conference	Year
		1.				
		2.				

No: 35	**Data for teaching staff and mentors of 3rd cycle of studies (PhD)**			
1.	Name and surname	**Elena Atanaskova Petrov**		
2..	Date of birth	29.10.1983		
3.	Level of education	VIII		
4.	Title of teaching-scientific, teaching-professional, teaching, scientific and associate titles	PhD, Doctor of Veterinary science Associate professor		
5.	Data on completed education, i.e. acquired academic and scientific degrees	Education	Year	Institution
		High education	2009	Faculty of Veterinary Medicine in Skopje, Ss. Cyril and Methodius University in Skopje
		Master studies	/	
		Doctoral studies	2018	Faculty of Veterinary Medicine in Skopje, Ss. Cyril and Methodius University in Skopje
6.	Area, field and area of the scientific degree master's studies	Area	Field	Discipline
7.	Field, field and area of the	Area	Field	Discipline

	scientific degree Doctor of Science with the corresponding code number of the scientific field of the doctorate thesis according to the International Frascati Classification of 2015 and relevant domestic acts that determine the scientific research fields of the third level - areas	4 Agricultural and veterinary sciences	4.03 Veterinary sciences	4.03.00.10 Diseases of non-ruminant (monogastric) and small animals
8.	If he/she is employed, name of the institution where he/she works, title and scientific field in which he/she was elected, according the appropriate code number of the International Frascati Classification from 2015 and relevant domestic acts that determines the scientific research fields of the third level - fields	Institution	Title in which he was elected	Scientific field
		Faculty of Veterinary Medicine in Skopje, Ss. Cyril and Methodius University in Skopje	Associate professor	4.03 Veterinary sciences

.	List of courses that the teacher leads separately for the first, second and third cycle of studies			
	9.1.	List of courses taught by the teacher in the first cycle of studies		
		No	Course program title	Study program / Institution
		1.	Clinical and Laboratory Diagnostics in Companion Animals and Equines	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		2.	Internal Diseases of Small Animals and Equids 1	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		3.	Internal Diseases of Small Animals and Equids 2	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		4.	Cynology	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		5.	Clinical Nutrition in Dogs and Cats	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		6.	Changes in Laboratory Profilees in Companion Animal Diseases	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		7.	Veterinary Dentistry in Dogs and Cats	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		8.	Visual Diagnostic Methods and Physical Therapy	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
	9.2.	List of courses taught by the teacher in the second cycle of studies		
		No	Course program title	Study program / Institution
		1.		
		2.		
	9.3.	List of courses taught by the teacher in the third cycle of studies		
		No	Course program title	Study program / Institution

		1.	Veterinary laboratory Medicine	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje
		2.	Clinical nutrition of dogs and cats	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje
		3.	Selected chapters of internal diseases in dogs and cats	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje
		4.	Laboratory diagnostics of internal diseases in dogs and cats	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje
		5.	Ultrasound diagnostics in Companion animals	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje
		6.	Regenerative medicine at orthopedic diseases in pets	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje

10. Selected results in the last five years

10.1. Relevant published scientific papers (maximum 5)

No	Author	Title	Publisher / Year
1.	**Atanaskova Petrov, E.**, Celeska, I., Popova, Z., Krstevski, K. and Djadjovski, I.	*Molecular Detection of Ehrlichia canis in the Pet-Dog Population in RN Macedonia*	Acta Veterianria Belgrade/2021
2.	**Atanaskova Petrov, E.,** Kjosevski, M., Celeska, I	*Evaluation of health related quality of life in dogs treated with chemotherapy for lymphoma*	Acta Veterianria Belgrade/2023
3.	Mitrevska E., Celeska I., Kjosevski M., **Atanaskova Petrov E**	*Clinical signs and behavior in dogs with hypothyroidism*	Macedonian Veterinary Review 2023
4.	Novakov T, Gjurovski I, Bozinoski S, Janevski A, **Petrov EA**, Kunovska SK, Ristoski T	*Immunohistochemical investigation of FIPV3-70 antigen expression in the ileum of cats with effusive feline infective peritonitis*	Acta Veterinaria/2023
5.	**Petrov A**E, Novakov T, Gjorgjievska S., Irena C	*Haematology and serum biochemistry parameters as indicators of the most common canine vector borne diseases in RN Macedonia*	Tradition and modernity in veterinary medicine/2023

10.2. Participation in national and international scientific-research projects (maximum 5)

No	Role in the project (project manager or participant)	Title	Time duration pf the project The institution from which everything is organized, financed, implemented

		1.	Participant	Reviving of Farriery; Disappearing Profession. Erasmus Plus Programme / KA2 – Cooperation and Innovation for Good Practices Strategic Partnerships for Adult Education.	ERASMUS/2018-2020
		2.	Földvári Gábor action chair E.A. Petrov MC member	COST Action CA21170, Prevention, anticipation and mitigation of tick-borne disease risk applying the DAMA protocol (PRAGMATICK)	COST/2022-2026
		3.	Participant	Antimicrobial resistance in bacteria isolated from pets in the Republic of North Macedonia	Faculty of veterinary medicine, 2023
		4.			
		5.			
	10.3.	Published books in the last five years (maximum 5)			
		No	Author	Title	Publisher / Year
		1.			
		2.			
		3.			
		4.			
		5.			
	10.4.	Published professional papers in the last five years (maximum 5)			
		No	Author	Title	Publisher / Year
		1.			
		2.			
		3.			
		4.			
		5.			
		6.			
11.	Mentoring undergraduate, postgraduate and doctoral students				
	11.1.	Diploma works		4	
	11.2.	Master theses		/	
	11.3.	Doctoral dissertations		/	
12.	For mentors of PhD studies, selected results in the last four/five years				
	12.1.	Evidence of printed scientific papers in international scientific journals in the field (maximum 6) in the last five years			
		No	Author	Title	Publisher / Year
		1.	**Atanaskova Petrov, E.**, Celeska, I., Popova, Z., Krstevski, K. and Djadjovski, I.	*Molecular Detection of Ehrlichia canis in the Pet-Dog Population in RN Macedonia*	Acta Veterianria Belgrade/2021
		2.	**Atanaskova Petrov, E.,** Kjosevski, M., Celeska, I	*Evaluation of health related quality of life in dogs treated with chemotherapy for lymphoma*	Acta Veterianria Belgrade/2023

		3.	Novakov T, Gjurovski I, Bozinoski S, Janevski A, **Petrov EA**, Kunovska SK, Ristoski T	*Immunohistochemical investigation of FIPV3-70 antigen expression in the ileum of cats with effusive feline infective peritonitis*	Acta Veterinaria/2023
		4.	Celeska I.,Nikolovski M.,Novakov T.,Angelovska A.,Gjurovski I. and **Petrov E**.	*Retrospective study on trilostane titration dose treatment in dogs with terminal stage of hyperadrenocorticism*	Macedonian Veterinary Review/2024
		5.	Mitrevska E., Celeska I., Kjosevski M., **Atanaskova Petrov E**	*Clinical signs and behavior in dogs with hypothyroidism*	Macedonian Veterinary Review 2023
		6.	**Petrov A**E, Novakov T, Gjorgjievska S., Irena C	*Haematology and serum biochemistry parameters as indicators of the most common canine vector borne diseases in RN Macedonia*	Tradition and modernity in veterinary medicine/2023
	12.2.	Evidence of at least two printed scientific papers in scientific journals with impact factor in the field in the last five years			
		No	Author	Title	Publisher / Year
		1.	**Atanaskova Petrov, E.**, Celeska, I., Popova, Z., Krstevski, K. and Djadjovski, I.	*Molecular Detection of Ehrlichia canis in the Pet-Dog Population in RN Macedonia*	Acta Veterianria Belgrade/2021
		2.	**Atanaskova Petrov, E.,** Kjosevski, M., Celeska, I	*Evaluation of health related quality of life in dogs treated with chemotherapy for lymphoma*	Acta Veterianria Belgrade/2023
		3.	Novakov T, Gjurovski I, Bozinoski S, Janevski A, **Petrov EA**, Kunovska SK, Ristoski T	*Immunohistochemical investigation of FIPV3-70 antigen expression in the ileum of cats with effusive feline infective peritonitis*	Acta Veterinaria/2023
		4.	Celeska I.,Nikolovski M.,Novakov T.,Angelovska A.,Gjurovski I. and **Petrov E**.	*Retrospective study on trilostane titration dose treatment in dogs with terminal stage of hyperadrenocorticism*	Macedonian Veterinary Review/2024

	12.3.	Evidence of at least three participations on international meetings in last five years				
		No.	Author	Title	International meeting/ conference	Year
		1.	**Atanaskova Petrov E.,** Novakov T., Celeska I.	Haematology and serum biochemistry parameters as indicators of the most common canine vector borne diseases in RN Macedonia.	International scientific conference “Tradition and modernity in veterinary medicine”, 2022 Sophia, Bulgaria	2022

		2.	**Elena Atanaskova Petrov***, Ksenija Ilievska, Todor Novakov, Ljubica Rashik, Igor Djadjovski, Miroslav Kjosevski, Irena Celeska	Clinicopathological alterations in pet dogs naturally infected with Ehrlichia canis and Leishmania infantum in Macedonia – case study.	9th International Scientific Meeting Days of Veterinary Medicine. 22-25 September2022, Ohrid, RN Macedonia	2022
		3.	Ilievska K., **Atanaskova Petrov E.**	Overview of regenerative therapy treatments in 1. Orthopaedics, 2. Internal medicine.	*2nd International Regenerative medicine workshop Scientific and Clinical Application of Stem Cells Therapy and PRP in Veterinary Practice 2023*	2023

No: 36	**Data for teaching staff and mentors of 3rd cycle of studies (PhD)**			
1.	Name and surname	**Risto Uzunov**		
2..	Date of birth	07.12.1983		
3.	Level of education	VIII		
4.	Title of teaching-scientific, teaching-professional, teaching, scientific and associate titles	PhD, Doctor of Veterinary Science Assistant professor		
5.	Data on completed education, i.e. acquired academic and scientific degrees	Education	Year	Institution
		Higher education	2009	Faculty of Veterinary Medicine – Skopje, Ss. Cyril and Methodius University in Skopje
		Master studies	/	/
		Doctoral studies	2019	Faculty of Veterinary Medicine – Skopje, Ss. Cyril and Methodius University in Skopje
6.	Area, field and area of the scientific degree master's studies	Area	Field	Discipline
		/	/	/
7.	Field, field and area	Area	Field	Discipline

	of the scientific degree Doctor of Science with the corresponding code number of the scientific field of the doctorate thesis according to the International Frascati Classification of 2015 and relevant domestic acts that determine the scientific research fields of the third level - areas	4 Agricultural and veterinary sciences	4.03 Veterinary sciences	4.03.00.26
8.	If he/she is employed, name of the institution where he/she works, title and scientific field in which he/she was elected, according the appropriate code number of the International Frascati Classification from 2015 and relevant domestic acts that determines the scientific research fields of the third level - fields	Institution	Title in which he was elected	Scientific field
		Faculty of Veterinary Medicine – Skopje, Ss. Cyril and Methodius University in Skopje	Assistant professor	4.03 Veterinary sciences

9.	List of courses that the teacher leads separately for the first, second and third cycle of studies			
	9.1.	List of courses taught by the teacher in the first cycle of studies		
		No	Course program title	Study program / Institution
		1.	Analytical Chemistry of Food	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		2.	Chemistry of Natural Compounds	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		3.	Chemistry of Food Quality	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		4.	Residues and Contaminants in Food	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		5.	Ecotoxicology	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		6.		
	9.2.	List of courses taught by the teacher in the second cycle of studies		
		No	Course program title	Study program / Institution
		1.	/	/
		2.	/	/

	9.3.	List of courses taught by the teacher in the third cycle of studies			
		No	Course program title	Study program / Institution	
		1.	Analytical methods for monitoring the food safety	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje	
		2.	Residues and contaminants such as chemical risks to the safety of food	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje	
		3.	Chemistry and analytics of food	Veterinary medicine, third cycle of studies Faculty of veterinary medicine – Skopje, Ss. Cyril and Methodius University in Skopje	
10.	Selected results in the last five years				
	10.1.	Relevant published scientific papers (maximum 5)			
		No	Author	Title	Publisher / Year
		1.	Gjylai Alija, Zehra Hajrulai-Musliu, Risto Uzunov	Development and validation of confirmatory LC–MS/MS method for multi-residue analysis of antibiotic drugs in bovine milк	SN Appl. Sci. 2, 1563, 2020 https://doi.org/10.1007/s42452-020-03361-2
		2.	Risto Uzunov, Zehra Hajrulai-Musliu, Velimir Stojkovski, Elizabeta Dimitrieska-Stojkovic, Biljana Stojanovska-Dimzoska, Pavle Sekulovski, Dean Jankuloski	Development and Validation of LC-MS/MS Method for Determination of Ten Beta Agonists in Bovine Urine	Kafkas Univ Vet Fak Derg, 25 (1): 55-60, 2019. DOI: 10.9775/kvfd.2018.20324
		3.	Zehra Hajrulai-Musliu, Risto Uzunov, Stefan Jovanov, Maksud Kerluku, Dean Jankuloski, Velimir Stojkovski, Lazo Pendovski, James Jacob Sasanya.	Determination of veterinary drug residues, mycotoxins, and pesticide residues in bovine milk by liquid chromatography electrospray ionisation–tandem mass spectrometry.	Journal of Veterinary Research 66, 2022. DOI: 10.2478/jvetres-2022-0027

		4.	Biljana Stojanovska Dimzoska, Zehra Hajrulai Musliu, Risto Uzunov, Aleksandra Angeleska, Katerina Blagoevska, Radmila Crceva Nikolovska, Gordana Ilievska, Elizabeta Dimitrieska Stojkovic	Application of reliable cost-effective strategy for analysis of mycotoxins in corn-based foods with HPLC-FLD after multi-toxin immunoaffinity clean-up.	Macedonian Journal of Chemistry and Chemical Engineering, 41(1), 77–88. https://doi.org/10.20450/mjcce.2022.2422
		5.	Radmila Crceva Nikolovska, Aleksandra Angeleska, Srecko Gjorgjievski, Katerina Blagoevska, Riste Uzunov, Vasilka Poposka Trenevska.	The microscopic detection of animal proteins in animal feed regarding bovine spongiform encephalopathy.	Mac Vet Rev 2021; 44 (2):169-178. 10.2478/macvetrev-2021-0021
	10.2.	Participation in national and international scientific-research projects (maximum 5)			
		No	Role in the project (project manager or participant)	Title	Time duration pf the project The institution from which everything is organized, financed, implemented
		1.	Participant	Integrated Radiometric and Complementary Techniques for Mixed Contaminants and Residues in Food”	17.03.2017-16.03.2022, IAEA, Faculty of Veterinary Medicine- Skopje
		2.	Participant	Assessment of contamination of certain foods with acrylamide as a product of the Maillard reaction and evaluation of certain procedures for its education in heat-treated potato products.	2018-2019, University „Ss. Cyril and Methodius” Skopje, Macedonia,
		3.	Participant	Depletion of Veterinary Pharmaceuticals and Radiometric Analysis of their Residues in Animal Matrices (D52043)	03.03.2020-01.6.2025, IAEA, Veterinary Medicine- Skopje, Faculty of Veterinary Medicine- Skopje

		4.	Participant	Evaluation of food safety in the Republic of North Macedonia in terms of the potential for contribution to antimicrobial resistance in the food chain,	30.03.2023-30.03.2025, Faculty of Veterinary Medicine Skopje
		5.	Participant	Development and validation of multi-residual and multi-class analytical methods for determination of veterinary drug residues and contaminants in food of animal origin using isotopically marked internal standards and application of the LC-Q / TOF technique.	10.2021-10.2023. Ministry of education and science, Faculty of Veterinary Medicine Skopje
	10.3.	Published books in the last five years (maximum 5)			
		No	Author	Title	Publisher / Year
		1.			
		2.			
		3.			
		4.			
		5.			
	10.4.	Published professional papers in the last five years (maximum 5)			
		No	Author	Title	Publisher / Year
		1.			
		2.			
		3.			
		4.			
		5.			
		6.			
11.	Mentoring undergraduate, postgraduate and doctoral students				
	11.1.	Diploma works			
	11.2.	Master theses			
	11.3.	Doctoral dissertations			
12.	For mentors of PhD studies, selected results in the last four/five years				
	12.1.	Evidence of printed scientific papers in international scientific journals in the field (maximum 6) in the last five years			
		No	Author	Title	Publisher / Year
		1.	Gjylai Alija, Zehra Hajrulai-Musliu, Risto Uzunov	Development and validation of confirmatory LC–MS/MS method for multi-residue analysis of antibiotic drugs in bovine milк	SN Appl. Sci. 2, 1563, 2020 https://doi.org/10.1007/s42452-020-03361-2

		2.	Risto Uzunov, Zehra Hajrulai-Musliu, Velimir Stojkovski, Elizabeta Dimitrieska-Stojkovic, Biljana Stojanovska-Dimzoska, Pavle Sekulovski, Dean Jankuloski	Development and Validation of LC-MS/MS Method for Determination of Ten Beta Agonists in Bovine Urine	Kafkas Univ Vet Fak Derg, 25 (1): 55-60, 2019. DOI: 10.9775/kvfd.2018.20324
		3.	Zehra Hajrulai-Musliu, Risto Uzunov, Stefan Jovanov, Maksud Kerluku, Dean Jankuloski, Velimir Stojkovski, Lazo Pendovski, James Jacob Sasanya.	Determination of veterinary drug residues, mycotoxins, and pesticide residues in bovine milk by liquid chromatography electrospray ionisation–tandem mass spectrometry.	Journal of Veterinary Research 66, 2022. DOI: 10.2478/jvetres-2022-0027
		4.	Biljana Stojanovska Dimzoska, Zehra Hajrulai Musliu, Risto Uzunov, Aleksandra Angeleska, Katerina Blagoevska, Radmila Crceva Nikolovska, Gordana Ilievska, Elizabeta Dimitrieska Stojkovic	Application of reliable cost-effective strategy for analysis of mycotoxins in corn-based foods with HPLC-FLD after multi-toxin immunoaffinity clean-up.	Macedonian Journal of Chemistry and Chemical Engineering, 41(1), 77–88. https://doi.org/10.20450/mjcce.2022.2422
		5.	Radmila Crceva Nikolovska, Aleksandra Angeleska, Srecko Gjorgjievski, Katerina Blagoevska, Riste Uzunov, Vasilka Poposka Trenevska.	The microscopic detection of animal proteins in animal feed regarding bovine spongiform encephalopathy.	Mac Vet Rev 2021; 44 (2):169-178. 10.2478/macvetrev-2021-0021

		6.	Zehra Hajrulai-Musliu, Risto Uzunov, Stefan Jovanov, Dean Jankuloski, Velimir Stojkovski, Lazo Pendovski, James Jacob Sasanya.	A new LC–MS/MS method for multiple residues/contaminants in bovine meat.	BMC Chemistry (2021) 15:62. https://doi.org/10.1186/s13065-021-00788-5	
	12.2.	Evidence of at least two printed scientific papers in scientific journals with impact factor in the field in the last five years				
		No	Author	Title	Publisher / Year	
		1.	Zehra Hajrulai-Musliu, Risto Uzunov, Stefan Jovanov, Dean Jankuloski, Velimir Stojkovski, Lazo Pendovski, James Jacob Sasanya.	A new LC–MS/MS method for multiple residues/contaminants in bovine meat.	BMC Chemistry (2021) 15:62. https://doi.org/10.1186/s13065-021-00788-5	
		2.	Biljana Stojanovska Dimzoska, Zehra Hajrulai Musliu, Risto Uzunov, Aleksandra Angeleska, Katerina Blagoevska, Radmila Crceva Nikolovska, Gordana Ilievska, Elizabeta Dimitrieska Stojkovic	Application of reliable cost-effective strategy for analysis of mycotoxins in corn-based foods with HPLC-FLD after multi-toxin immunoaffinity clean-up.	Macedonian Journal of Chemistry and Chemical Engineering, 41(1), 77–88. https://doi.org/10.20450/mjcce.2022.2422	
	12.3.	Evidence of at least three participations on international meetings in last five years				
		No.	Author	Title	International meeting/ conference	Year

		1.	Risto Uzunov, Zehra Hajrulai-Musliu, Stefan Jovanov, Elizabeta Dimitrieska-Stojkovikj, Aleksandra Angeleska, Biljana Stojanovska-Dimzoska, Velimir Stojkovski	Validation of the rapid ELISA method for determination of methyltestosterone in urine and muscle based on the new regulation (EU) 2021/808.	9th International Scientific Meeting Days of Veterinary Medicine 2022. 22-25.09.2022, Ohrid, R. N. Macedonia.	2022
		2.	Angeleska Aleksandra, Radmila Crceva Nikolovska, Elizabeta Dimitrieska Stojkovik, Risto Uzunov, Biljana Dimzoska Stojanovska, Katerina Blagoevska, Ana Angelovska	Accumulation of Radioactive Cesium in Marine Fish Used in North Macedonia.	Second International Congress on Biological and Health Sciences, on-line	2022
		3.	R. Crceva Nikolovska, A. Angeleska, K. Blagoevska, E. Dimitrieska-Stojkovic, R. Uzunov B., Stojanovska-Dimzoska	Radio cesium concentration in mushrooms collected in the Republic of North Macedonia.	3rd International Conference on Agriculture and Life Science (ICOALS III), Campobasso - Tirana, Albania,	2021

No: 37	**Data for teaching staff and mentors for 1st, 2nd and 3rd cycle of studies**	
1.	Name and surname	**Miroslav Kjosevski**
2..	Date of birth	15.03.1978
3.	Level of education	VIII
4.	Title of teaching-scientific,	PhD, Doctor of Veterinary science

	teaching-professional, teaching, scientific and associate titles	Assistant professor		
5.	Data on completed education, i.e. acquired academic and scientific degrees	Education	Year	Institution
		High education	2008	Faculty of veterinary medicine-Skopje, Ss. Cyril and Methodius University in Skopje
		Master studies		
		Doctoral studies	2020	Faculty of veterinary medicine-Skopje, Ss. Cyril and Methodius University in Skopje
6.	Area, field and area of the scientific degree master's studies	Area	Field	Discipline
		4 - Biotechnical Sciences	40727	Zoohygiene
7.	Field, field and area of the scientific degree Doctor of Science with the corresponding code number of the scientific field of the doctorate thesis according to the International Frascati Classification of 2015 and relevant domestic acts that determine the scientific research fields of the third level - areas	Area	Field	Discipline
		4 Agricultural and veterinary sciences	4.03 Veterinary sciences	4.03.00.21 Animal hygiene and environmental protection
8.	If he/she is employed, name of the institution where he/she works, title and scientific field in which he/she was elected, according the appropriate code number of the International Frascati Classification from 2015 and relevant domestic acts that determines the scientific research fields of the third level - fields	Institution	Title in which he was elected	Scientific field
		Faculty of veterinary medicine-Skopje, Ss. Cyril and Methodius University in Skopje	Assistant Professor	4.03 Veterinary sciences

9.	List of courses that the teacher leads separately for the first, second and third cycle of studies			
	9.1.	List of courses taught by the teacher in the first cycle of studies		
		No	Course program title	Study program / Institution
		1.	Animal Hygiene 1	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		2.	Animal Hygiene 2	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		3.	Animal Behaviour and Welfare	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		4.	Environmental Protection	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje
		5.	Biosecurity in Animal Husbandry and Veterinary Medicine	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje

		6.	Precision Agriculture and Veterinary Medicine	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje	
		7.	Measuring Animal Behaviour	Veterinary medicine - Integrated first and second cycle of studies / Faculty of veterinary medicine-Skopje	
	9.2.	List of courses taught by the teacher in the second cycle of studies			
		No	Course program title	Study program / Institution	
		1.			
		2.			
	9.3.	List of courses taught by the teacher in the third cycle of studies			
		No	Course program title	Study program / Institution	
		1.			
		2.			
10.	Selected results in the last five years				
	10.1.	Relevant published scientific papers (maximum 5)			
		No	Author	Title	Publisher / Year
		1.	Miroslav Kjosevski, Martin Nikolovski, Ksenija Ilievska, Lazo Pendovski, Vlatko Ilieski	The three pillars of applied farm animal welfare	Veterinarski glasnik, 2021
		2.	Maria Assunta Cafiero, Alessandra Barlaam, Antonio Camarda, Miroslav Radeski, Monique Mul, Olivier Sparagano & Annunziata Giangaspero	Dermanysuss gallinae attacks humans. Mind the gap!	Avian Pathology, 2019
		3.	Radeski, M., O'Shea, H., De Meneghi, D., & Ilieski, V.	Positioning Animal Welfare in the One Health Concept through Evaluation of an Animal Welfare Center in Skopje, Macedonia.	Frontiers in Veterinary Science, 2018
		4.	Mikuš, T., Radeski, M., Cziszter, L. T., Dimitrov, I., Jurkovich, V., Nenadović, K., Kirchner, M. K	A Review of Research on Animal Welfare Assessment in a Multi-lingual Area in Europe.	Journal of Agricultural and Environmental Ethics, 2018
		5.	Radeski, M., & Ilieski, V.	Gait and posture discrimination in sheep using a tri-axial accelerometer.	Animal, 2017
	10.2.	Participation in national and international scientific-research projects (maximum 5)			
		No	Role in the project (project manager or participant)	Title	Time duration pf the project The institution from which everything is organized, financed, implemented
		1.			
		2.			
		3.			
		4.			

		5.			
	10.3.	Published books in the last five years (maximum 5)			
		No	Author	Title	Publisher / Year
		1.	FAO UN	Biosecurity Assessment and Scoring In Cows – Regional Approach (BASIC)	FAO-2022 - 2023
		2.	FAO UN	National Platform for Improving Biosecurity in Dairy Cattle Farms	FAO-2020 - 2021
		3.	Macedonian Fund for innovations and technology development	Testing, Development and Commercialization of innovative feed additive product for use in livestock	2019 -2021
		4.	Scientific-Technological Cooperation	Accelerometers and data analysis in monitoring behaviour, locomotion and health of farm animals	2018-2020
		5.	Higher Education, Research and Applied Science	Heat stress and animal welfare in small-scale dairy holdings in Kosovo and FYR of Macedonia	2018-2019
	10.4.	Published professional papers in the last five years (maximum 5)			
		No	Author	Title	Publisher / Year
		1.			
		2.			
		3.			
		4.			
		5.			
		6.			
11.	Mentoring undergraduate, postgraduate and doctoral students				
	11.1.	Diploma works			
	11.2.	Master theses			
	11.3.	Doctoral dissertations			
12.	For mentors of PhD studies, selected results in the last four/five years				
	12.1.	Evidence of printed scientific papers in international scientific journals in the field (maximum 6) in the last five years			
		No	Author	Title	Publisher / Year
		1.			
		2.			
		3.			
		4.			
		5.			
		6.			
	12.2.	Evidence of at least two printed scientific papers in scientific journals with impact factor in the field in the last five years			
		No	Author	Title	Publisher / Year
		1.			
		2.			
	12.3.	Evidence of at least three participations on international meetings in last five years			

		No.	Author	Title	International meeting/ conference	Year
		1.				
		2.				

No: _____	**Data for teaching staff and mentors of 3rd cycle of studies (PhD)**			
1.	Name and surname	Riste Popeski-Dimovski		
2.	Date of birth	28.12.1984		
3.	Level of education	VIII		
4.	Title of teaching-scientific, teaching-professional, teaching, scientific and associate titles	PhD in Physics		
5.	Data on completed education, i.e. acquired academic and scientific degrees	Education	Year	Institution
		High education	2008	Institute of Physics, Faculty for natural sciences and mathematics, Ss. Cyril and Methodius university Skopje
		Master studies	2009	Institute of Physics, Faculty for natural sciences and mathematics, Ss. Cyril and Methodius university Skopje
		Doctoral studies	2015	Institute of Physics, Faculty for natural sciences and mathematics, Ss. Cyril and Methodius university Skopje
6.	Area, field and area of the scientific degree master's studies	Area	Field	Discipline
		Natural Sciences	Physics	Physics of soft condensed matter
7.		Area	Field	Discipline

	Field, field and area of the scientific degree Doctor of Science with the corresponding code number of the scientific field of the doctorate thesis according to the International Frascati Classification of 2015 and relevant domestic acts that determine the scientific research fields of the third level - areas	Natural Sciences	Physics	Physics
8.	If he/she is employed, name of the institution where he/she works, title and scientific field in which he/she was elected, according the appropriate code number of the International Frascati Classification from 2015 and relevant domestic acts that determines the scientific research fields of the third level - fields	Institution	Title in which he was elected	Scientific field
		Institute of Physics, Faculty for natural sciences and mathematics, Ss. Cyril and Methodius university Skopje	Associate professor	Physics and Biophysics

9.	List of courses that the teacher leads separately for the first, second and third cycle of studies			
	9.1.	List of courses taught by the teacher in the first cycle of studies		
		No	Course program title	Study program / Institution
		1.	Spectroscopy	Physics/Institute of Physics
		2.	Soft condensed matter	Physics/Institute of Physics
		3.	Physics for Biology students	Biology/Institute of Physics
		4.	Physics 1	Chemistry/Institute of Chemistry
		5.	Biophysics	Faculty of veterinary sciences
		6.		
	9.2.	List of courses taught by the teacher in the second cycle of studies		
		No	Course program title	Study program / Institution
		1.	Soft condensed matter	Physics/Institute of Physics
		2.		
	9.3.	List of courses taught by the teacher in the third cycle of studies		
		No	Course program title	Study program / Institution
		1.	Soft condensed matter	Physics/Institute of Physics
		2.		

10.	Selected results in the last five years				
	10.1.	Relevant published scientific papers (maximum 5)			
		No	Author	Title	Publisher / Year

		1.	Ivana Dimitriovska, Tanja Olumceva, Elena Markova, Riste Popeski-Dimvoski et al.	Topical gel with ethyl cellulose based microsponges loaded with clindamycin hydrochloride for acne treatment, *Cellulose*, 10.1007/s10570-020-03283-7	Springer . 2020
		2.	Silvana Gjosevaa, Nikola Geskovski, Simona Dimchevska Sazdovska, Riste Popeski-Dimovski, Gjorgji Petruševski , Kristina Mladenovska., Katerina Goracinova	Design and biological response of doxycycline loaded chitosan microparticles for periodontal disease treatment, *Carbohydrate Polymers*, 10.1016/j.carbpol.2018.01.043	Elsevier, 2018
		3.	Simona Dimchevska, Nikola Geshkovski, Riste Popeski-Dimovski et al.	SN-38 loading capacity of hydrophobic polymer blend nanoparticles: formulation, optimization and efficacy evaluation, *Drug Development and Industrial Pharmacy, 10.1080/03639045.2016.1268151*	Taylor Francis 2016
		4.	Toshiro Mifune, Todor Mihsonov, Alber Varonov, Alberto Barone, Riste Popeski-Dimovski et al.	Tunable high-Q resonator by general impedance converter, *Review of Scientific Instruments*, 10.1063/5.0041136	Amaerican Institute of Physics, 2021
		5.			
	10.2.	Participation in national and international scientific-research projects (maximum 5)			
		No	Role in the project (project manager or participant)	Title	Time duration pf the project The institution from which everything is organized, financed, implemented
		1.	Riste Popeski-Dimovski	"Influence of biopolymer interactions on the drug delivery from chitosan-alginate colloidal carrier systems", NATO Science for Peace Project No. 978023 (2002-2006)	2002-2006
		2.	Riste Popeski-Dimovski	Preparatio of sodium alginate fractions by radiation induced degradation and identification of their gelation and bioadhesive properties", researcher, joined Macedonian-Turkish research project 02-226/1 (2007 – 2010, extended to 2012)	2007-2012
		3.			
		4.			
		5.			
	10.3.	Published books in the last five years (maximum 5)			
		No	Author	Title	Publisher / Year

		1.	Many authors	*Numerical problems from national competitions - book 3*	2021
		2.			
		3.			
		4.			
		5.			
	10.4.	Published professional papers in the last five years (maximum 5)			
		No	Author	Title	Publisher / Year
		1.			
		2.			
		3.			
		4.			
		5.			
		6.			
11.	Mentoring undergraduate, postgraduate and doctoral students				
	11.1.	Diploma works			
	11.2.	Master theses			
	11.3.	Doctoral dissertations			
12.	For mentors of PhD studies, selected results in the last four/five years				
	12.1.	Evidence of printed scientific papers in international scientific journals in the field (maximum 6) in the last five years			
		No	Author	Title	Publisher / Year
		1.	Ivana Dimitriovska, Tanja Olumceva, Elena Markova, Riste Popeski-Dimvoski et al.	Topical gel with ethyl cellulose based microsponges loaded with clindamycin hydrochloride for acne treatment, *Cellulose*, 10.1007/s10570-020-03283-7	Springer . 2020
		2.	E Sulejmani, L Beqiri, R Popeski-Dimovski	*Effect of vegetable fat on the texture, colour and sensory properties of Macedonian white brined cheese*, Mljekarstvo: časopis za unaprjeđenje proizvodnje i prerade mlijeka, 2021 Volume 71, Pages 25-34	2021
		3.	Ema Stojchevska, Riste Popeski-Dimovski, Živko Kokolanski, Chiara Gualandi, Aleksandra Bužarovska	Effect of Particle Functionalization on Structural and Dielectric Properties of Flexible TPU/BaTiO3/MWCNTs Composite Films *Macromolecular Chemistry and Physics, Volume 224, 2023/3, (IF=2.983)*	2023
		4.	Toshiro Mifune, Todor Mihsonov, Alber Varonov, Alberto Barone, Riste Popeski-Dimovski et al.	Tunable high-Q resonator by general impedance converter, *Review of Scientific Instruments*, 10.1063/5.0041136	Amaerican Institute of Physics, 2021

		5.	**R. Popeski-Dimovski**, A. Veliu	Nonstandard Method for measuring Physical properties of Hommeade polymer filaments for FFD 3D printing, Proceedinngs of the 13th conference of the Society of Physicists of Macedonia, September, 2020	DFRM 2022
		6.	Albig, Jovana; Tofiloska, Valentina; Jovchevski, Sasha; **Popeski Dimovski, Riste** Stankov, Aleksandar	*Local nitric oxide synthesis in the vagina and its implication on premature delivery*, Academic Medical Journal, Vol. 3 No. 2 (2023) doi: 10.53582/amj2332099a	UKIM 2023
	12.2.	Evidence of at least two printed scientific papers in scientific journals with impa field in the last five years			
		No	Author	Title	Publisher / Year
		1.	Ivana Dimitriovska, Tanja Olumceva, Elena Markova, Riste Popeski-Dimvoski et al.	Topical gel with ethyl cellulose based microsponges loaded with clindamycin hydrochloride for acne treatment, *Cellulose*, 10.1007/s10570-020-03283-7	Springer . 2020
		2.	Ema Stojchevska, Riste Popeski-Dimovski, Živko Kokolanski, Chiara Gualandi, Aleksandra Bužarovska	Effect of Particle Functionalization on Structural and Dielectric Properties of Flexible TPU/BaTiO3/MWCNTs Composite Films *Macromolecular Chemistry and Physics, Volume 224, 2023/3, (IF=2.983)*	2023
	12.3.	Evidence of at least three participations on international meetings in last five years			
		No.	Author	Title	International meeting/ conference	Year
		1.				
		2.				

No: _____	**Data for teaching staff and mentors of 3rd cycle of studies (PhD)**			
1.	Name and surname	Milan Damjanoski		
2.	Date of birth	23.08.1977		
3.	Level of education	Doctoral studies		
4.	Title of teaching-scientific, teaching-professional, teaching, scientific and associate titles	Full professor		
5.	Data on completed education, i.e. acquired academic and scientific degrees	Education	Year	Institution
		Higher education	2000	Blaže Koneski Faculty of Philology - Skopje
		Master studies	2010	Blaže Koneski Faculty of Philology - Skopje
		Doctoral studies	2015	Blaže Koneski Faculty of Philology - Skopje
6.	Area, field and area of the scientific degree master's studies	Area	Field	Discipline
		Humanities	Literary science	English literature
7.		Area	Field	Discipline

	Field, field and area of the scientific degree Doctor of Science with the corresponding code number of the scientific field of the doctorate thesis according to the International Frascati Classification of 2015 and relevant domestic acts that determine the scientific research fields of the third level - areas	Humanities	Literary science	English literature
8.	If he/she is employed, name of the institution where he/she works, title and scientific field in which he/she was elected, according the appropriate code number of the International Frascati Classification from 2015 and relevant domestic acts that determines the scientific research fields of the third level - fields	Institution	Title in which he was elected	Scientific field
		Blaže Koneski Faculty of Philology - Skopje	Full Professor	English and American Literature (6.02.02.16) and Translation and Interpretation (6.02.01.31)

9.	List of courses that the teacher leads separately for the first, second and third cycle of studies			
	9.1.	List of courses taught by the teacher in the first cycle of studies		
		No	Course program title	Study program / Institution
		1.	Introduction to Anglophone Literature 1	English Language and Literature / Blaže Koneski Faculty of Philology - Skopje
		2.	English poetry of the 19th century	English Language and Literature / Blaže Koneski Faculty of Philology - Skopje

		3.	Theory of Translation and Interpretation 1	English Language and Literature / Blaže Koneski Faculty of Philology - Skopje
		4.	Theory of Translation and Interpretation 2	English Language and Literature / Blaže Koneski Faculty of Philology - Skopje
		5.	Conference interpreting 1	English Language and Literature / Blaže Koneski Faculty of Philology - Skopje
		6.	Conference Interpreting 2	English Language and Literature / Blaže Koneski Faculty of Philology - Skopje
		7.	Conference interpreting 3	English Language and Literature / Blaže Koneski Faculty of Philology - Skopje
		8.	Conference interpreting 4	English Language and Literature / Blaže Koneski Faculty of Philology - Skopje
		9.	The Essay in Anglophone Literature (elective course)	English Language and Literature / Blaže Koneski Faculty of Philology - Skopje
	9.2.	List of courses taught by the teacher in the second cycle of studies		
		No	Course program title	Study program / Institution
		1.	Historical discourse in English literature	Literary Science: English Literature and Cultural Studies / Blaže Koneski Faculty of Philology - Skopje
		2.	Translation in English Literature	Literary Science: English Literature and Cultural Studies / Blaže Koneski Faculty of Philology - Skopje
	9.3.	List of courses taught by the teacher in the third cycle of studies		
		No	Course program title	Study program / Institution
		1.	History as a Theme in English Literature	Literary science : English Literature / Blaže Koneski Faculty of Philology - Skopje
		2.	The Poetry of the Romantic and Victorian era	Literary science : English Literature / Blaže Koneski Faculty of Philology - Skopje
		3.	Contemporary English Poetry	Literary science : English Literature / Blaže Koneski Faculty of Philology - Skopje
10.	Selected results in the last five years			
	10.1.	Relevant published scientific papers (maximum 5)		

No	Author	Title	Publisher / Year
1.	Милан Дамјаноски	*Метафикцијата како форма за пренесување на туѓиот говор во Поседување на А.С. Бајат“.* Годишен зборник на Филолошкиот факултет „Блаже Конески“, кн. 49. 2024.	Скопје: Универзитет „Св. Кирил и Методиј“
2.	Damjanoski, M. Trajkova Strezovska, Z.	Pragmatic and Sociocultural Adaptation in Literary Translation Facta Universitatis, Series: Linguistics and Literature Vol. 22, No 1, 2024, pp. 163 - 179 https://casopisi.junis.ni.ac.rs/index.php/FULingLit/article/view/12740	2024. Скопје: Универзитет „Св. Кирил и Методиј“

		3.	Milan Damjanoski	*: The Dramatic Monologue in the Poetry of Blaze Koneski.,* *https://blesok.mk/en/literature/the-dramatic-monologue-in-the-poetry-of-blaze-koneski/*	*Blesok, No. 155, 2024*
		4.	Милан Дамјаноски	*Коњски житија на Зоран Анчевски – востоличување на драмскиот монолог во македонската поезија* *http://hdl.handle.net/20.500.12188/31851*	Blesok, No. 154, 2024
		5.	Damjanoski, M.	*The Theme of Crisis of Religion in the Poetry Of Robert Browning,* *International Journal of Arts and Humanities , Vol. 2 No. 2 (2024)* *https://bluemarkpublishers.com/index.php/IJAH/issue/view/19*	International Journal of Arts and Humanities , Bluemark Publishers, 2024
	10.2.	Participation in national and international scientific-research projects (maximum 5)			
		No	Role in the project (project manager or participant)	Title	Time duration pf the project The institution from which everything is organized, financed, implemented
		1.	Participant	*International project Translation in Motion*	Publishing house Goten in cooperation with the international translation network RECIT (2021-2023)
		2.	Participant	" Crowdsourcing Language Assessment Project – CLAP "	Center for English Corpus Linguistics, Catholic University of Leuven , Belgium (2023)
		3.	Participant	A Multilingual Repository of Phraseme Constructions in Central and Eastern European Languages (PhraConRep)	COST Action CA22115, – (2023-2027)

		4.			
		5.			
	10.3.	Published books in the last five years (maximum 5)			
		No	Author	Title	Publisher / Year
		1.	Милан Дамјаноски	*Поседување на А.С. Бајат модел за ново читање на Викторијанскиот роман Милан Дамјаноски*	М. Дамјаноски, 2024
		2.			
		3.			
		4.			
		5.			
	10.4.	Published professional papers in the last five years (maximum 5)			
		No	Author	Title	Publisher / Year
		1.	Milan Damjanoski	Приказ на резултатите од Студентската преведувачка работилница за поезијата на Ацо Шопов. Годишен зборник на Филолошкиот факултет „Блаже Конески“, кн. 49. 2024.	Скопје: Универзитет „Св. Кирил и Методиј“, 2024
		2.	Milan Damjanoski	Translation of a capital work of art: *Quichotte* by Salman Rushdie (Macedonian translation)	*Арт Конект (2022)*
		3.	Milan Damjanoski	***Осврт за наградата „Драги“*** Годишен зборник на Филолошкиот факултет „Блаже Конески“, кн. 47-48. 2022. ***https://journals.ukim.mk/index.php/zbornik/article/view/2503***	Скопје: Универзитет „Св. Кирил и Методиј“, 2024
		4.	Milan Damjanoski	Translation of a capital work of art: *Selection of Poetry* by Adam Horowitz (Macedonian translation)	Струшки вечери на поезијата (2023)
		5.	Milan Damjanoski	Translation of capital work of art: *10 Short Stories* by O. Henry	Светла комора (2024)
		6.			
11.	Mentoring undergraduate, postgraduate and doctoral students				
	11.1.	Diploma works	40		
	11.2.	Master theses	3		
	11.3.	Doctoral dissertations	/		
12.	For mentors of PhD studies, selected results in the last four/five years				
	12.1.	Evidence of printed scientific papers in international scientific journals in the field (maximum 6) in the last five years			

		No	Author	Title		Publisher / Year
		1.	Damjanoski, M. Trajkova Strezovska, Z.	Pragmatic and Sociocultural Adaptation in Literary Translation Facta Universitatis, Series: Linguistics and Literature Vol. 22, No 1, 2024, pp. 163 - 179 https://casopisi.junis.ni.ac.rs/index.php/FULingLit/article/view/12740		2024. Скопје: Универзитет „Св. Кирил и Методиј“
		2.	Milan Damjanoski	*: The Dramatic Monologue in the Poetry of Blaze Koneski.,* *https://blesok.mk/en/literature/the-dramatic-monologue-in-the-poetry-of-blaze-koneski/*		*Blesok, No. 155, 2024*
		3.	Милан Дамјаноски	*Коњски житија на Зоран Анчевски – востоличување на драмскиот монолог во македонската поезија* *http://hdl.handle.net/20.500.12188/31851*		Blesok, No. 154, 2024
		4.	Damjanoski, M.	*The Theme of Crisis of Religion in the Poetry Of Robert Browning,* *International Journal of Arts and Humanities , Vol. 2 No. 2 (2024)* *https://bluemarkpublishers.com/index.php/IJAH/issue/view/19*		International Journal of Arts and Humanities , Bluemark Publishers, 2024
		5.				
		6.				
	12.2.	Evidence of at least two printed scientific papers in scientific journals with impact factor in field in the last five years				
		No	Author	Title		Publisher / Year
		1.				
		2.				
	12.3.	Evidence of at least three participations on international meetings in last five years				
		No.	Author	Title	International meeting/ conference	Year
		1.	Milan Damjanoski	*“The Narrative Strategies in Reporting Covid 19 Stories”*	International conference Transformations and Consequences In Society Due to Covid-19 Pandemia,, Faculty of Philology, AAB University, Prishtina, Kosovo, 5.09.2020. Presentation title:	*2020*

		2.	Milan Damjanoski	"Challenges and benefits from the introduction of remote interpreting in conference interpreting training"	English Studies at the Interface of Disciplines (ESIDRP 2022), University of Skopje, Republic of North Macedonia. March 8-9. 04.2022.	Milan Damjanoski
		3	Damjanoski, M. Trajkova Strezovska, Z.	"Pragmatic and Sociocultural Adaptation in Literary Translation"	Teaching Languages and Cultures in the Post-Method Era: New Insights and Innovations (TLC 2023) Faculty of Philosophy Nish	2023.
		4.	Milan Damjanoski	"Adaptation As an Intertextual and Intercultural Process in Quichotte By Salman Rushdie"	7th International Conference English Language and Literature Studies: Modern Perspectives and Beyond, Faculty of Philology Belgrade	2024

No: _____	**Data for teaching staff and mentors of 3rd cycle of studies (PhD)**			
1.	Name and surname	Sasho Todorovski		
2.	Date of birth	29.03.1965		
3.	Level of education	PhD		
4.	Title of teaching-scientific, teaching-professional, teaching, scientific and associate titles	Associate Professor		
5.	Data on completed education, i.e. acquired academic and scientific degrees	Education	Year	Institution
		High education	1990	Faculty of Physical Education, Sport and Health, Skopje
		Master studies	2004	Faculty of Physical Education, Sport and Health, Skopje
		Doctoral studies	2009	Faculty of Physical Education, Sport and Health, Skopje
6.	Area, field and area of the scientific degree master's studies	Area	Field	Discipline
		Kinesiology	Basketball	Youth Basketball
7.	Field, field and area of the scientific degree Doctor of Science with the corresponding code number of the scientific field of the doctorate thesis according to the International Frascati Classification of 2015 and relevant domestic acts that determine the scientific research fields of the third level - areas	Area	Field	Discipline
		PhD	Kinesiology	Basketball
8.	If he/she is employed, name of the institution where he/she works, title and scientific field in which he/she was elected, according the appropriate code number of the International Frascati Classification from 2015 and relevant domestic acts that determines the scientific research fields of the third level - fields	Institution	Title in which he was elected	Scientific field
		Faculty of Physical Education, Sport and Health, Skopje	Associate Professor	Kinesiology
9.	List of courses that the teacher leads separately for the first, second and third cycle of studies			
	9.1.	List of courses taught by the teacher in the first cycle of studies		
		No	Course program title	Study program / Institution

		1.	Sport and Health	First study program	
		2.			
		3.			
		4.			
		5.			
		6.			
	9.2.	List of courses taught by the teacher in the second cycle of studies			
		No	Course program title	Study program / Institution	
		1.			
		2.			
	9.3.	List of courses taught by the teacher in the third cycle of studies			
		No	Course program title	Study program / Institution	
		1.			
		2.			
10.	Selected results in the last five years				
	10.1.	Relevant published scientific papers (maximum 5)			
		No	Author	Title	Publisher / Year
		1.			
		2.			
		3.			
		4.			
		5.			
	10.2.	Participation in national and international scientific-research projects (maximum 5)			
		No	Role in the project (project manager or participant)	Title	Time duration pf the project The institution from which everything is organized, financed, implemented
		1.			
		2.			
		3.			
		4.			
		5.			
	10.3.	Published books in the last five years (maximum 5)			
		No	Author	Title	Publisher / Year
		1.			
		2.			
		3.			
		4.			
		5.			
	10.4.	Published professional papers in the last five years (maximum 5)			
		No	Author	Title	Publisher / Year

		1.	Dimitrioska, K.J., Novačevska, S., Stamenov, R., & Todorovski, S.	Defining and comparing the anthropometric structure whit male and female students at the age of 11 years with different methodological and statistic approaches Research in Physical Education, Sport and Health	2021
		2.	Dimitrioska, K.J., Novačevska, S., Stamenov, R., & Todorovski, S.	The preference of physical and sports activities in students with and without deviant behavior between the age 11 to 15, Research in Physical Education, Sport and Health	2020
		3.	Dimitrioska, K.J., Novačevska, S., Stamenov, R., & Todorovski, S.	Differences between students that showed and did not show deviation in behavior and sport activities and several psychosocial factors Research in Physical Education, Sport and Health	2022
		4.	Dimitrioska, K.J., Novačevska, S., Stamenov, R., & Todorovski, S.	Discriminatory analysis between male and female in motor tests in students from 11 years of age, Research in Physical Education, Sport and Health	2022
		5.	Dimitrioska, K.J., Novačevska, S., Stamenov, R., & Todorovski, S.	Physical activity among students 6 to 8 years old. (Abstract), 18th FIEPS European Congress & 6th Scientific Conference–RPESH	2024
		6.	Dimitrioska, K.J., Novačevska, S., Stamenov, R., & Todorovski, S.	The developing trend of body growth in girls from 6-14 years old, Research in Physical Education, Sport and Health	2020
11.	Mentoring undergraduate, postgraduate and doctoral students				
	11.1.	Diploma works			
	11.2.	Master theses			
	11.3.	Doctoral dissertations			
12.	For mentors of PhD studies, selected results in the last four/five years				

	12.1.	Evidence of printed scientific papers in international scientific journals in the field (maximum 6) in the last five years				
		No	Author	Title	Publisher / Year	
		1.				
		2.				
		3.				
		4.				
		5.				
		6.				
	12.2.	Evidence of at least two printed scientific papers in scientific journals with impact field in the last five years				
		No	Author	Title	Publisher / Year	
		1.				
		2.				
	12.3.	Evidence of at least three participations on international meetings in last five years				
		No.	Author	Title	International meeting/ conference	Year
		1.				
		2.				

Anex no. 5

Diploma Supplement

FACULTY OF VETERINARY MEDICINE-SKOPJE

1. Data on diploma's owner

1.1 Name	
1.2 Parrent's name	
1.3 Surname	
1.3 Date of birth, birth place and state	
1.5 ID number	
2. Data on acquired qualification	
2.1 Date of issuing	
2.2 Qualification title	**Doctor of veterinary medicine (DVM)**
2.3 Name of study program, i.e. main study area, field and discipline	Veterinary medicine, study area: Agriculture and veterinary sciences; study field: Veterinary science
2.4 Name and status of higher education.scientific institution which issues diploma	Ss Cyril and Methodius University in Skopje, Faculty of Veterinary Medicine – Skopje, public higher education institution, study program accredited by Higher Education Accreditation and Elaboration Board (Decision No. _____, from _____), and approved by Minister of Education and Science (Decision on starting to function No. ____ from _____).
2.5 Name and status of higher education.scientific institution (if different) which administrates diploma	Ss Cyril and Methodius University in Skopje Faculty of Veterinary Medicine – Skopje
2.6 Education language	English
3. Data on qualification grade (cycle)	
3.1 Qualification type (academic/professional)	Academic studies
3.2 Qualification grade according Macedonian and Eurpean qualification frame	Integrated studies of first and second cycle
3.3 Study program duration: years and ECTS credit points	6 years, 12 semesters, 360 credit points
3.4 Conditions for enrolling study program	Four-year high school, state matura or school matura
4. Data on program's contains and acquired results	
4.1 Mode of study (ordinary, extraordinary)	Ordinary studies
4.2 Study program requirements and results	With completion of the academic studies, graduated doctor of veterinary medicine acquires competences and knowledge from following disciplines from the field of veterinary medicine: basic and clinical disciplines, animal production disciplines, veterinary public health disciplines and professional qualifications. Student in firs 4 semesters attends theory classes and practicals from fundamental and basic courses of veterinary medicine. In next 4 semesters

	student acquires knowledge and skills from the preclinical courses and gradually is introduced into studying clinical courses. In next 2 semesters student attends compulsory clinical courses, and courses related with food quality and safety and veterinary public health. In the 11th and 12th semester student acquires practical experience and skills within compulsory clinical practice in the University Veterinary Hospital within FVMS, on livestock farms and food industry enterprises, by supervision of Faculty's teacher and Elective practical trainings by supervision of mentor-doctor of veterinary medicine. At the end of the study student independently creates diploma work under mentorship of teacher, and its public presentation is prerequirement for completion of study.
	Study program allows acquiring competencies which have to be possessed by every doctor of veterinary medicine: Knowledge and understanding for: structure and function of animal health and reproduction; current procedures in molecular diagnostics of diseases; etiology, pathogenesis, clinical signs, diagnostics and treatment of diseases in animals, including infectious diseases and zoonoses; crucial aspects of preventive veterinary medicine which includes selection and rearing of normal and resistant production animals; hygienic conditions of animal housing and rearing animals and monitoring of main indicators of animal welfare; creation of breeding plans, technologies and animal selection; biology and basis of rearing aquatic organisms, wildlife and bees, i.e. procedures for sustaining their health; hygiene and technology of production, processing and deliverance on market food products of animal origin for human consumption; drug legislative and manuals for responsible use of drugs; laws, bylaws and other administrative regulations related with veterinary medicine, animal husbandry, hunting, food safety, and animal welfare and environment protection; compliance of veterinary ethics and norms in veterinary medicine. Application of knowledge and understanding in: taking relevant anamnesis; therapy in animals; use of main surgical techniques and other clinical procedures; care on all common domestic animals in case of emergency and giving main first aid; ability for appropriate assessment for use of analytical methods in laboratory diagnostics and result interpretation; ability of performing main post mortal examination and taking tissue samples, their appropriate storing and transport; euthanasia; planning of therapy approach; technology of production, feed contents and hygiene in aspect of animal's health; creation and application of preventive and prophylactic programs (herd health) and maintenance of accepted health standards, as well as ethic standards and animal welfare and veterinary public health standards. Research: ability of searching referent materials, data bases and other data resources; devising and performing experiments in the field of veterinary medicine; presentation and interpretation of results for making conclusions and ability for using of appropriate laboratory equipment and critical analysis of gained laboratory results. Practical skills: clinical and other practical experiences under supervision; selection and application of appropriate scientific principles, methods and diagnostic procedures in animal production and biotechnology, in veterinary public health, as well as in preclinical and clinical veterinary medicine; ability for sublimation of theoretical and practical knowledge and skills for solving professional issues; skills in organization and management of veterinary practice. Complementary skills: ability for individual and team work, i.e. interpretation (written and oral) of results from analyses and research; high consciousness for health, security and legal issues, and responsibility in veterinary profession and society; understanding of professional duties of

	need for professional improvement via continuous education and training during whole his/her professional life.
4.3 Data on study program (direction/module, grade marks, ECTS credit points)	Integrated firs and second cycle of studies (6 years) Doctor of veterinary medicine 360 ECTS credit points (Attachment Certificate on passed exams)
4.4 Grade mark system (grade mark sheme with criteria for grade mark acquiring)	93–100 points – 10 (A), 85-92 points – 9 (B), 77-84 points – 8 (C), 69-76 points – 7 (D), 60-68 points –6 (E), up to 59 points – 5 (F)
4.5 Average grade mark during studying	
5. Data on use of qualification	
5.1 Access to further studying	Postgraduate specialist studies or third cycle university studies – doctoral (PhD) studies
5.2 Professional status (if applicable)	Owner of this qualification is encharged to use trade mark academic title Doctor of veterinary medicine (DVM)
6. Additional data	
6.1 Additional data on student	/
6.2 Additional data on higher education institution	Ss. Cyril and Methodius University in Skopje, Faculty of Veterinary Medicine – Skopje, Lazar Pop Trajkov 5-7, Skopje, R. of Macedonia, tel: +389 2 3240 700, fax: +389 2 3114 619, e-mail: contact@fvm.ukim.edu.mk www.ukim.edu.mk; www.fvm.ukim.edu.mk; e-mail: contact@fvm.ukim.edu.mk
7. Verification of diploma supplement	
7.1 Data and place	
7.2 Name and signature	
7.3 Signatory's position	Dean Rector
7.4 Seal	Seal of the unit Seal of the University

As an addition, we would like to emphasize that for all subjects marked with an asterisk in table 8.1, there is no data provided in Appendix 4 for each subject individually, since the Teaching and Scientific Council adopts the list of course coverage by the respective subject instructors employed at FVM-S before the beginning of each academic year, in accordance with the Law on Higher Education, the Study Rules, and the Statute of FVM-S.

Прилог бр. 6

Копија од Решението за акредитација на студиска програма издадено од Одборот за акредитација и евалуација на високото образование на РМ односно Одборот за акредитација орган во состав на АКВО (доколку студиската програма се поднесува за реакредитација)

Прилог бр. 7

Копија од Решението за почеток со работа на студиска програма издадено од МОН на РСМ односно АКВО (доколку студиската програма се поднесува за реакредитација)

Прилог бр. 8

Договори за закуп

Прилог бр. 9

Банкарска гаранција – за приватните високообразовни установи
Финансиски план во циклуси од три односно четири години

Прилог бр. 10

М1/М2– за приватните високообразовни установи

Прилог бр. 11

Програма/Стратегија за развој и работа на високообразовната установа за период од 3 години

Прилог бр. 12

Акционен план за реализација на програмата/Стратегијата за развој и работа на високообразовната установа за период од 3 години

ФАКУЛТЕТ ЗА ВЕТЕРИНАРНА МЕДИЦИНА во СКОПЈЕ
Примено: 14.02.2020
Орг. Един. | Број: 03 229 | Прилог: | Вредност:

Република Северна Македонија
Republika e Maqedonisë së Veriut
МИНИСТЕРСТВО ЗА ОБРАЗОВАНИЕ И НАУКА
MINISTRIA E ARSIMIT DHE SHKENCËS
Бр.-Nr. 14-109/4
14-02-2020 20 год.-viti
Скопје - Shkup

Врз основа на член 55 став 1 од Законот за организација и работа на органите на државната управа („Службен весник на Република Македонија“ бр. 58/00, 44/02, 82/08 167/10 и 51/11), и врз основа на член 216 од Законот за високото образование („Службен весник на Република Македонија“ бр. 82/18), а во врска со член 104 став 2 од Законот за високото образование („Службен весник на Република Македонија“ бр. 35/08, 103/08, 26/09, 83/09, 99/09, 115/10, 17/11, 51/11, 123/12, 15/13, 24/2013, 41/14, 116/14, 130/14, 10/15, 20/15, 98/15, 145/15, 154/15, 30/16 и 127/16), Министерот за образование и наука донесе

РЕШЕНИЕ

за почеток со работа на студиската програма од прв и втор циклус на интегрирани студии по Ветеринарна медицина на англиски јазик на Факултетот за ветеринарна медицина при Универзитет „Св. Кирил и Методиј“ во Скопје

1. Со ова решение се утврдува дека се исполнети условите за почеток со работа на студиската програма од прв и втор циклус по Ветеринарна медицина на интегрирани студии на англиски јазик на Факултетот за ветеринарна медицина при Универзитет „Св. Кирил и Методиј“ во Скопје.

2. Ова решение влегува во сила со денот на донесување.

О б р а з л о ж е н и е

Факултетот за ветеринарна медицина од Скопје се обрати со барање бр. 03-2262 од 30.12.2019 година до Министерството за образование и наука, под наш бр. 14-109/1 од 08.01.2020 година, за утврдување на исполнетоста на условите за почеток со работа на студиската програма од прв и втор циклус на интегрирани студии по Ветеринарна медицина на англиски јазик на Факултетот за ветеринарна медицина при Универзитет „Св. Кирил и Методиј“ во Скопје, по добиеното Решение за акредитација 1409-234/3 од 10.05.2019 година од страна на Одборот за акредитација и евалуација на високото образование.

Министерството за образование и наука, со Решение бр. 14-109/2 од 05.02.2020 година формира Комисија за утврдување на исполнетоста на условите за почеток со работа на студиската програма наведена во точка 1 на ова решение.

Комисијата на ден 10.02.2020 година, изврши увид и изготви Извештај бр. 14-109/3 од 12.02.2020 година, каде е наведено дека за студиската програма од прв и втор циклус на интегрирани студии по Ветеринарна медицина на англиски јазик на Факултетот за ветеринарна медицина при Универзитет „Св. Кирил и Методиј“ во Скопје, се исполнети условите согласно одредбите утврдени со Законот за високото образование и Уредбата за нормативи и стандарди за основање на високообразовни установи и за вршење на високообразовна дејност („Службен весник на Република Македонија“ бр. 103/10, 168/10 и 10/11).

Имајќи го во предвид изнесеното, се одлучи како во диспозитивот на ова решение.

ПРАВНА ПОУКА: Против ова решение, може да се заведе управен спор, со поднесување на тужба до Управниот суд на Република Македонија, во рок од 30 дена од денот на приемот на ова решение.

МИНИСТЕР
Dr. Arbër Ademi

Доставено до:
- Архива

изработил: м-р Јорданчо Попоски
контролирал: Снежана Лазевска
одобрил: Борчо Алексов

Република Северна Македонија
Универзитет СВ. КИРИЛ И МЕТОДИЈ во Скопје
ФАКУЛТЕТ ЗА ВЕТЕРИНАРНА МЕДИЦИНА во СКОПЈЕ
Бр. 03-2257
27.12.2019 год.

РЕПУБЛИКА МАКЕДОНИЈА
Одбор за акредитација и евалуација
на високото образование
Бр. 1409-234/3
10.05.2019 год.
СКОПЈЕ

РЕПУБЛИКА МАКЕДОНИЈА
ОДБОР ЗА АКРЕДИТАЦИЈА И ЕВАЛУАЦИЈА
НА ВИСОКОТО ОБРАЗОВАНИЕ

Врз основа на член 71 став 2 алинеа 4 и член 104 став 2 од Законот за високото образование ("Службен весник на Република Македонија" број 35/08, 103/8, 26/9, 83/09, 99/09,115/10, 17/11,51/11, 123/12, 15/13, 24/13, 41/14, 116/14, 130/14, 10/15, 24/15, 98/15, 154/15, 30/2416, 127/16), Одборот за акредитација и евалуација на високото образование на Република Македонија, на својата 25 седница одржана на 02.05.2019 година, донесе

Р Е Ш Е Н И Е

за акредитација на студиската програма Ветеринарна медицина прв и втор циклус интегрирани студии на англиски јазик на Факултет за ветеринарна медицина при Универзитет „Св. Кирил и Методиј" Скопје

1. Се акредитира студиската програма **Ветеринарна медицина прв и втор циклус интегрирани студии на англиски јазик на Факултет за ветеринарна медицина при Универзитет „Св. Кирил и Методиј" Скопје** согласно Класификацијата на научно-истражувачки подрачја, полиња и области според меѓународната Фраскатиева класификација која е дадена како Прилог 1 на Уредбата за нормативите и стандардите за основање на високообразовни установи и за вршење високообразовна дејност („Службен весник на Република Македонија" бр.103/10, 168/10 и 10/11).

2. Студиската програма од точка 1 на ова решение е во траење од 5,5 години (единаесет семестри).

3. По завршените студии на студиската програма од точка 1 од ова решение, студентот се стекнува со 330 ЕКТС и со звање:
- Дипломиран доктор по ветеринарна медицина
Научно - истражувачко подрачје: Биотехнички науки.
Научно – истражувачко поле: 407.
Научно – истражувачко област: 40700 - 40734.

4. Акредитацијата на студиската програма од точка 1 на ова решение е за период од **пет** (I и II циклус) учебни години, почнувајќи од учебната 2020/2021.....

5. Ова решение е конечно и влегува во сила со денот на донесувањето.

РЕПУБЛИКА МАКЕДОНИЈА
ОДБОР ЗА АКРЕДИТАЦИЈА И ЕВАЛУАЦИЈА
НА ВИСОКОТО ОБРАЗОВАНИЕ

О б р а з л о ж е н и е

Врз основа на донесената одлука на Наставно-научниот совет на Факултет за ветеринарна медицина Скопје, прв и втор циклус интегрирани на студиската програма „Ветеринарна медицина„ на англиски јазик на 08.04.2019 година до Одборот за акредитација и евалуација на високото образование во РМ достави предлог за прифаќање на елаборат за акредитација на предметната студиска програма.

Одборот за акредитација и евалуација на високото образование во РМ, на 24 седница, одржана на 08.04.2019 година формира стручна комисија за оценка на доставениот предлог и врз основа на позитивната оценка содржана и извештајот на стручната комисија, на својата 25 седница одржана на 02.05.2018 година, одлучи како во диспозитивот на ова решение.

Претседател
на Одборот за акредитација и евалуација
на високото образование

Академик Владо Камбовски