UNIVERSITY of THESSALY

SCHOOL of HEALTH SCIENCES

FACULTY OF VETERINARY MEDICINE

STUDY GUIDE

Academic year 2022-23

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The Study Guide 2022-23 of the Faculty of Veterinary Science of the University of Thessaly is released exclusively in electronic form and is updated up to September 1, 2022.

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USED ABBREVIATIONS

€: euro

BA: Bachelor of Arts

BSc: Bachelor of Science

DVM: Doctor of Veterinary Medicine

ECAAH: European College of Aquatic Animal Health

ECVD: European College of Veterinary Dermatology

ECVAA: European College of Veterinary Anaesthesia and Analgesia

EAEVE: European Association of Establishments for Veterinary Education

L.: Law

PA: Presidential Act

HAHE: Hellenic Authority for Higher Education

NSRF: National Strategic Reference Framework

G.G.: Government Gazette

Dip: Diplomate

ECZM: European College of Zoological Medicine

ECAR: European College of Animal Reproduction

ECBHM: European College of Bovine Health Management

ECSRHM: European College of Small Ruminant Health Management

ECTS: European Credit Transfer and Accumulation System

MPhil: Master of Philosophy

MPVM: Master in Preventive Veterinary Medicine

MSc: Master of Science

PhD: Doctor of Philosophy

UNIVERSITY of THESSALY

The University of Thessaly was founded through the Presidential Acts (PA) 83/1984, 302/1985 and 107/1986 and first enrolled students during the academic year 1988-89. The University is self-governed, supervised by the Ministry of Education and Religious Affairs.

The seat of the University of Thessaly is at the city of Volos.

The University of Thessaly mission is as follows (L. 4485/2018):

- to produce and to disseminate knowledge through research and teaching, to educate its students for its implementation and to develop arts and culture,
- to contribute in lifetime learning with modern methods of teaching, including the long distance teaching, based on the scientific and technological research of higher quality according to the widely accredited standards,
- to develop the critical ability and the skills of students, to shape the necessary conditions for the promotion of young scientists and to provide to its graduates the essential knowledge and tools for their scientific and professional career,
- to serve the needs of the country, to promote the dissemination of knowledge and the development of arts, the use of research results and innovation, taking into account scientific ethics, sustainable development and social cohesion, including contribution in national plan for the proliferative reconstruction of the country in the direction of sustainability,
- to promote cooperation with other educational foundations and research institutions in Greece and abroad, the effective mobility of the teaching personnel, of the students and their graduates, participating in European and International academia,
- to contribute in the promotion of active citizens, able to satisfy the demands of all fields of human activities with scientific, professional and cultural proficiency and responsibility and with respect to the values of social justice, freedom, democracy, social solidarity, peace and equality,
- to develop/invent common, open sources in education, research, technology and culture.

In the context of its educational mission, the University of Thessaly provides qualitative and integrated education, in line with the trends of contemporary science, technology and arts, as well as of the international scientific practice.

In order to fulfill its mission, the Institution is organized and operates with rules and practices which ensure the compliance and protection, especially, of the principles:

- of freedom in research and teaching,
- of research and scientific ethics,
- of the quality of education,
- of the quality of services, effectiveness and efficiency in human resource management, its sources and its infrastructures,
- of transparency on the whole of its activities,
- of fairness of its bodies during carrying out their work and during decision-making,
- of the meritocracy in the selection and development of its personnel,
- of equal deal between sexes and the respect of every diversity.

Currently, there are 36.500 under-graduate and 6.000 post-graduate and PhD students enrolled in the University. Academic staff include 650 faculty members, whilst further 900 people work as teaching and administrative staff.

GOVERNING BODIES

RECTOR

Professor Z. Mamouris

(Department of Biochemistry and Biotechnology)

VICE RECTORS

Vice Rector of Research and Lifelong Learning

Professor Ioanna Laliotou (Department of History, Archaeology and Social Anthropology)

Vice Rector of Financial Planning and Development

Professor Charalambos Billinis (Faculty of Veterinary Science)

Vice Rector of Academic and Student Affairs

Professor Ioannis Theodorakis (Department of Physical Education and Sport Science)

Vice Rector of Administrative Affairs

Professor Stefanos Paraskeuopoulos (Department of Special Education)

SENATE

The Senate is composed of (a) the Rector, (b) the Vice-Rectors, (c) the Heads of the Schools of the University, (d) the Deans of the Faculties and Departments of the University, (e) representatives of the undergraduate, postgraduate and PhD students of the University, (f) representatives of the teaching support staff of the University and (g) representative of the administrative staff of the University.

HEAD of the SCHOOL of HEALTH SCIENCES

Professor I. Stefanides (Faculty of Medicine, University of Thessaly)

GOVERNING BODY OF THE SCHOOL of HEALTH SCIENCES

The governing body of the School of Health Science includes (a) the Head of School, (b) the Deans of the six Faculties and Departments of the School, (c) representatives of the undergraduate, postgraduate and PhD students of the School and (d) representatives of the teaching support staff of the School.

SCHOOLS AND DEPARTMENTS

The University of Thessaly includes the following 8 schools.

SCHOOL of HEALTH SCIENCES

(*seat: Larisa*)

- Faculty of Medicine
- Faculty of Veterinary Science (*seat: Karditsa*)
- Department of Biochemistry and Biotechnology
- Faculty of Public Integrated Health (*seat: Karditsa*)
- Department of Nursing
- Department of Physiotherapy (*seat: Lamia*)

SCHOOL of HUMANITIES and SOCIAL SCIENCES

(*seat: Volos*)

- Department of Primary Education
- Department of Early Childhood Education
- Department of Special Education
- Department of History, Archaeology and Social Anthropology
- Department of Lingual and Intercultural Studies
- Department of Culture, Creative Media and Industries

SCHOOL of ENGINEERING

(seat*: Volos*)

- Department of Mechanical Engineering
- Department of Spatial Planning, Urban Planning and Regional Development
- Department of Civil Engineering
- Department of Architecture Engineering
- Department of Electrical and Computer Engineering

SCHOOL of AGRICULTURAL SCIENCES

(*seat: Volos*)

- Department of Agriculture Crop Production and Rural Environment
- Department of Ichthyology and Aquatic Envoronment
- Department of Agrotechnology (*seat: Larisa*)
- Department of Animal Production (seat*: Larisa*)
- Department of Food Science and Human Nutrition (*seat: Karditsa*)

SCHOOL of SCIENCE

(seat*: Lamia*)

- Department of Computer Science and Biomedical Informatics
- Department of Computer Science
- Department of Mathematics
- Department of Physics

SCHOOL of PHYSICAL EDUCATION and SPORT SCIENCE

(*seat: Trikala*)

- Department of Physical Education and Sport Science
- Department of Nutrition and Dietetics

SCHOOL of TECHNOLOGY

(*seat: Larisa*)

- Department of Forestry, Wood Science and Design (*seat: Karditsa*)
- Department of Environmental Sciences
- Department of Energy Systems
- Department of Digital Systems

SCHOOL of ECONOMICS and BUSINESS

(seat*:Volos*)

- Department of Economics
- Department of Business Administration (*seat: Larisa*)
- Department of Accounting and Finance (seat*: Larisa*)

GENERAL DEPARTMENTS

- General Department Larisa
- General Department Lamia

FACULTY of VETERINARY SCIENCE

The Faculty of Veterinary Science of the University of Thessaly was founded through Presidential Act 177/1993, and has been integrated in the School of Health Sciences of the University. The operation of the Faculty began at 1994, and since the Faculty actively promotes training of veterinarians in Greece. The first veterinarian graduated in 1999 and the first PhD degree was awarded in 2004.

The Faculty started to self-govern in 2006. In 2011, a successful evaluation was accomplished from the Hellenic Authority for Higher education by a committee of foreigner evaluators.

Since 2003, the Faculty has become a member of the European Association of Veterinary Educational Establishments (EAEVE). In 2017, an evaluation of the Faculty from the European System of Evaluation of Veterinary Training took place; in the relevant evaluation, distinctions were awarded for clinical training in farm animals, for training of food safety and for entirety of care and welfare provided by the Faculty to the students.

The Faculty of Veterinary Science promotes the discipline of the Veterinary Science and Medicine and is responsible for the organization and implementation of the educational and research activity in the discipline. Mission of the Faculty is the training of scientists, which will practice the veterinary profession, working in the sectors of health and animal protection, growth, and improvement of animal production, of hygiene and technology of products of animal origin, of human protection from zoonoses, of environmental protection, of experimental medicine, of veterinary research and its applications. With its research activity and the academic teaching, the Faculty aims towards development and promotion of veterinary science, exaltation of the veterinary profession and resolution of issues relevant to veterinary science.

The Faculty of Veterinary Science is based in Karditsa, housed in a complex, with a total surface area of 15.215 m^2 at the north-west entrance of the town. The complex comprises a central building, a building of auditoria and library, a building of teaching rooms, many small-scale laboratory buildings and teaching hospital. The total surface area of the housed spaces of the complex is 7.070 m^2.

The Faculty awards the Degree of Veterinary Medicine, a postgraduate degree of Master of Science, the degree of Doctor of Philosophy, as well as various postgraduate training degrees after completion of predetermined studies and successful passing in the relevant exams. Until now, in total, 595 veterinarians have graduated. Moreover, in total 116 MSc and 55 PhD degrees have been awarded.

In the Faculty, there are 34 academic staff, in all academic ranks and 1 more academic staff pending final appointment. All academic staff hold a PhD degree from Greek or foreign universities. Additionally, nine academic staff hold an official European Veterinary specialization diploma. Currently, the Faculty includes 478 enrolled undergraduate students, 26 postgraduate students and 50 PhD students.

ORGANIZATION of the FACULTY

ADMINISTRATION

The highest administrative authority of the Faculty is the General Assembly. This includes all academic staff, representatives of the teaching support staff and representatives of undergraduate, postgraduate and PhD students of the Faculty.

Dean of the Faculty for the academic years 2022-23 and 2023-24 is associate professor V. Papatsiros.

Vice-Dean of the Faculty for the academic years 2022-23 and 2023-24 is Professor A. Pourlis.

Secretary of the Faculty is Ms M. Bountolou.

The following committees and administrative responsibilities are available in the Faculty.

Committee for administrative issues in study matters: V. Papatsiros (ex officio), A. Pourlis, K. Sideri The committee, which is composed of Academic Teachers, with the aid of the corresponding teacher assess the requests of courses recognition and takes care for the mapping of grades and credits in the grading scale of the Faculty. Additionally considers the request for cessation of studies and recommends on these matters in the Assembly of the Faculty.

Committee of ethics in the use of animals: L. Athanasiou (chair), G. Amiridis, G. Valiakos (substitute members: A. Galatos, I. Valasi , D. Doukas) The committee has the mission to take care for the implementation of the recognized rules of ethics in the use of animals both in research activities and in teaching and training of undergraduate and postgraduate students of the Faculty

Committee for quality assurance: L. Athanasiou (chair), I. Valasi, K. Theodosiadou, G. Valiakos, A. Pexara, N. Solomakos, a delegate of students (*Ad hoc*). The Internal Evaluation Unit (OMEA) coordinates the annual internal evaluation, based on the guidelines defined by ADIP and described by the MODIP of the Foundation. The OMEA of the Faculty meets four (4) times a year with physical presence or video conference, while additional meetings can be held at the invitation of the Chair, the President of the Faculty, the Chair of MODIP of the University or 1/3 of the members of the OMEA.

Committee of PhD studies: N. Solomakos (chair), I. Valasi, K. Koutoulis, P. Pantazis, P. Xenoulis. The Doctoral Studies Committee is appointed by the Assembly of the Department, consisting of three members of the Faculty and two deputies and examines the respective applications for a doctoral dissertation and thesubmitted documents in accordance with the Regulation of Doctoral Studies.

Education committee: A. Pourlis (chair), I. Valasi, E. Saridomichelakis, K. Sideri, N. Solomakos, a delegate of students

Dissemination committee: A. Pourlis (coordinator), K. Koutoulis, P. Xenoulis, V. Mavrogianni, N. Solomakos

The dissemination committee is occupied in the organization of actions and events aiming at the broaden of cooperation, the promotion and publicity of the Faculty. This is intended through designing and accomplishing activities relevant to four portals of extroversion:

- Liaison actions with 2nd Degree Education
- Actions relevant to undergraduate and postgraduate students of the Faculty
- Activities aiming at the promotion of the scientific research of the Faculty
- Actions aiming at the cooperation of the Faculty with organizations and enterprises

Committee for examination for students enrolling for a 2nd degree: V. Papatsiros (chair), I. Valasi, K. Theodosiadou, G. Kontopidis, I. Pappas, A. Pourlis, V. Tsioli. The Committee is appointed after assembly's decision and is in charge of the entire process of the exams for students enrolling.

Committee of student affairs: P. Gouletsou (chair), K. Theodosiadou, K. Sideri. The members of the committee fulfill advisory and supportive actions in student affairs administration. These issues include studies (attendance, practice, exams, absence, etc), students life (adaptation to the city environment, to the Faculty etc.), health, cooperation and communication (classmates, administrative, teaching staff, etc.), financial matters, etc. as are mentioned in the Regulations of Students Advise and Support, in cooperation with the Academic Advisors.

Clinical training: V. Tsioli (companion animals), V. Papatsiros (farm animals) The Academic officers of Clinical Operation and Education manage issues relevant to the orderly function of clinics and clinical education.

Extra-mural training: I. Pappas The Academic officer for the extramural training supervises the implementation of the Regulations for the Practical Training of Students.
Erasmus program: L. Athanasiou (deputy: I. Valasi) The Academic Coordinator of the Erasmus program undertakes, during the Erasmus mobility period, the communication with the student for every academic issue (i.e. Learning Agreement etc.)

Infrastructures: G. Kontopidis (deputies: K. Katsoulis, P. Xenoulis)
Website officer: G. Valiakos The Website officer is the administrator of the electronic media for the promotion of all the topics and actions of the Faculty.
Library officer: I. Pappas (deputy: K. Theodosiadou)
Financial administrator: I. Pappas (deputy: A. Galatos)
Committee for students' restaurant: A. Pexara, S. Doikou

Former Deans of the Faculty

The former Deans of the Faculty are the following.

Before self-governing of the Faculty

Sep. 1994-Jan. 1999 Professor A. Karamanlides (Faculty of Veterinary Medicine, Aristotle University of Thessaloniki)

Feb. 1999-Jun. 2000 Assistant Professor A. Galatos

Jul. 2000-Sep. 2004 Professor I. Tsitsipis (School of Agricultural Sciences, University Thessaly)

Oct. 2004-Aug. 2006 Professor P.A. Molybdas (School of Medicine, University of Thessaly)

After self-governing of the Faculty

Sep. 2006-Aug. 2008	Professor F. Athanasopoulou
Aug. 2008-Sep. 2010	Professor F. Athanasopoulou
Sep. 2010-Dec. 2012	Professor C. Billinis
Jan. 2013-Aug. 2014	Professor C. Billinis
Sep. 2014-Aug. 2016	Professor A. Govaris

Sep. 2016-Aug. 2018	Professor G.C. Fthenakis
Sep. 2018-Aug. 2020	Professor G.C. Fthenakis
Sep. 2020-Aug. 2022	Associate Professor V. Papatsiros

DIVISIONS

Within the Faculty of Veterinary Science, the following divisions have been founded, based on the 15275/20 decision of the Rector of the University of Thessaly.

Division of Structure and Function of Animal Organisms

Division of Animal Production, Ichthyology-Fish Diseases, Apiculture and Applied Ecology

Division of Food Safety and Technology and Epidemiology

Division of Laboratory Diagnostics

Division of Clinical Veterinary Studies

The divisions cooperate the teaching of a part of the scientific discipline of the Faculty, which corresponds to particular fields of the science.

LABORATORIES and CLINICS

The laboratories and clinics of the Faculty of Veterinary Science have been established and organized based on PA 286/1996 (GG A' 200/27.08.96) and ministerial decision B1/289/2000 (GG B' 662/24.05.00). The laboratories and clinics which operate within the Faculty, as well as, their personnel is as follow.

Laboratory of Anatomy, Histology and Embryology

Director A. Pourlis

Objective The study of the fine and gross structure of body parts and organs of the domestic animals. The study of animal cell, tissues, and embryo development as well as of developmental malformations.

Staff Professor A. Pourlis, *DVM, PhD*

Laboratory personnel Th. Chatzis, *BSc (Animal Production)*, *DVM*

Laboratory of Animal Husbandry and Animal Nutrition

Director P. Pantazis

Objective The study of genetic material, of morphologic and production traits of various animal species and breeds, the management of animal farms, in order to improve production characteristics of the animals. The study of interactions between ecosystems and

farm animals, waste management, along with best use of animal feed and compilation of rational feed rations that permit cost-effective animal farming and correct prevention and treatment of animal diseases.

Staff Assistant Professor P. Pantazis, *BSc (Agriculture), PhD*
Assistant Professor K. Manolakou, *BSc (Agriculture), PhD*
Assistant Professor K. Katsoulis, *BSc (Chemical Engineering), DVM, PhD*

Laboratory of Biochemistry

Director G. Kontopidis

Objective The study of chemical composition and metabolism of the living organisms.

Staff Professor G. Kontopidis, *BSc (Chemistry), MPhil, PhD*

Laboratory of Biostatistics, Epidemiology and Animal Production Economics

Director L. Leontides

Objective The study and implementation of biostatistical methods for analysis of data pertinent to morbidity and productivity of animal populations, the study of disease prevalence and the distribution of diseases or of health in animal populations, along with the factors which influence them and, at last, the application of microeconomic analysis methods of animal production at the farm level.

Staff Professor L. Leontides, *DVM, MPVM, PhD*
Associate professor V. Skampardonis, *DVM, PhD*

Laboratory of Hygiene of Foods of Animal Origin

Director N. Solomakos

Objective The inspection of macroscopic and microscopic lesions of foods of animal origin (meat and meat products, eggs, milk and dairy products, games, catch, honey etc), including prevention of lesion development in these foods, due to causes which occur during animal farming, food preparation and conservation. Also, the study of food-borne diseases, of methods of sanitation and inspection of foods of animal origin, of the relevant legislation and the waste management of manufacturing plants of foods of animal origin.

Staff Associate Professor A. Pexara, *DVM, PhD*
Associate Professor N. Solomakos, *DVM, PhD*

Laboratory of Ichthyology and Fish Diseases

Director F. Athanasopoulou

Objective The diagnosis, prevention, control and treatment of diseases and disorders of fishes, crustaceans, molluscs and echinoderms.

Staff Professor F. Athanasopoulou, *DVM, MSc, PhD, DipECAAH*

Laboratory of Microbiology and Parasitology

Director X. Billinis

Objective The study of microorganisms (bacteria, fungi, viruses and parasites), which cause diseases in animals, but also are transmitted from the animals to humans resulting in zoonoses, along with the diagnosis of animal microbial and parasitic diseases, and the study of animal immunological mechanisms against the microorganims.

Staff Professor C. Billinis, *DVM, PhD, DipECZM*
Assistant professor M. Leukaditis, *DVM, PhD*
Assistant professor G. Valiakos, *DVM, PhD*
Academic teacher A. Giannakopoulos, *BSc (Forestry), PhD*
Academic teacher M. Sofia, *DVM, PhD*
Laboratory personnel D. Patsiaoura

Laboratory of Pathology

Director D. Tontis

Objective The study of macroscopic and microscopic lesions of animal organs in otoestigate the etiopathogenesis and the diagnosis of their diseases and disorders.

Staff Professor D. Tontis, *DVM, PhD*
Assistant professor D. Doukas, *DVM, MSc, PhD*
Administrative staff A. Gorillas

Laboratory of Pharmacology and Toxicology

Director I. Pappas

Objective The study of mechanisms of action of drugs, their interaction and their action in animals, along with the impact of toxic substances and the plants of veterinary importance in the animals.

Staff Professor I. Pappas, *BSc (Pharmacy), PhD*

Laboratory of Physiology

Director A. Theodosiadou

Objective The study of the physiological functions and regulations at all levels of animal organization, and the exchange of substances, energy and of information both within the organism itself and between the organism and the environment.

Staff Associate professor I. Valasi, *DVM, PhD, DipECSRHM*
Associate professor K. Theodosiadou, *DVM, PhD*

Clinic of Medicine

Director E. Saridomichelakis

Objective The diagnosis, prevention, control and conservative treatment of animal diseases and disorders, except poultry and fish, both in individuals and in livestock.

Staff Professor E. Saridomichelakis, *DVM, PhD, DipECVD*
Professor L. Athanasiou, *DVM, PhD*
Associate professor V. Papatsiros, *DVM, PhD*
Associate professor P. Xenoulis, *DVM, DrMedVet, PhD*
Assistant professor D. Gougoulis, DVM, MSc, PhD
Academic teacher A. Tzivara, *DVM, PhD*
Administration S. Doikou, *BA (Theology)*

Clinic of Obstetrics and Reproduction

Director G.C. Fthenakis

Objective The diagnosis, prevention, control and treatment of diseases and disorders of the genital system and udders of animals, as well as the artificial insemination and the reproduction management of breeding plants.

Staff Professor G.C. Fthenakis, *DVM, MSc, PhD, DipECAR, DipECSRHM*
Professor G.S. Amiridis, *DVM, PhD, DipECAR, DipECBHM*
Associate professor P.G. Gouletsou, *DVM, PhD*
Associate professor V.D. Mavrogianni, *DVM, PhD, DipECSRHM*

Clinic of Poultry Diseases

Director K. Koutoulis

Objective The diagnosis, prevention, the control and the conservative treatment of avian diseases and disorders, both on an individual level and flock level.

Staff Associate professor K. Koutoulis, *DVM, PhD*

Clinic of Surgery

Director A.D. Galatos

Objective The diagnosis, prevention and thesurgical treatment of animal diseases and disorders, the anaesthesia and intensive care, as well as the diagnostic imaging.

Staff Professor A.D. Galatos, *DVM, PhD, DipECVAA*

Associate professor V. Tsioli, *DVM, PhD*

Assistant professor K. Sideri, *DVM, PhD*

Assistant professor E. Flouraki, *DVM, PhD*

Assistant professor M. Barbagianni, *DVM, PhD*

Assistant professor P. Tyrnenopoulou, *DVM, PhD*

Administrative staff K. Christodoulou

ADMINISTRATIVE SERVICES

The administrative services of the Faculty support teaching and the general work of the Faculty.

Secretary

Head of services M. Bountolou

Responsibilities The administrative support of the Faculty, particularly: support of undergraduate, postgraduate and PhD students of the Faculty, administrative support of athe cademic staff of the Faculty, record keeping and handling of the post, keeping of minutes of assemblies and processing of the decisions of administrative organs, conducting procedures of academics election and maintenance of accounts of the Faculty.

The Secretary is housed in the central building of the Faculty and serves the members of the Faculty every day.

Staff Senior administrative staff M. Boundolou, *BSc (Physical Education & Sport Science), MSc*

Administrative staff B. Diamanti, *BA (Philosophy)*

Administrative staff E. Vasilaki, *BA (Philosophy)*

Administrative staff E. Voulgari

Library

The library of the Faculty of Veterinary Science is a branch of the central library of the University of Thessaly, which is based in Volos. Its main mission is the support and

promotion of the research and teaching work of the Faculty. The collection the library is composed of Greek and foreign language veterinary books and journals.

The library of the Faculty of Veterinary Science is open on the working days, from 08.00 to 20.00 during the teaching semesters and from 08.00 to 14.30 during the academic vacation. In extraordinary conditions, they may occur modifications in the work schedule. Within the building of the library, a reading room is functional as well. According to the regulation of library operation, δικαίωμα χρήσης της use of its services have both the members of academia of the University of Thessaly (personnel and students), as well as the general public.

The undergraduate students of the University are allowed, at maximum, to borrow up to 10 items for 21 days. The postgraduate and PhD students of the University are allowed, mat aximum, to borrow up to 10 items for 28 days.

Personnel Librarian A. Bazouki
Librarian A. Papakavoura

Telematics network service

The telematics network service of the Faculty of Veterinary Science is a branch of the central telematics network of the University of Thessaly, which seats Volos. Within the Faculty of Veterinary Science, a unit of computers operates, for research and educational purposes and for access to the internet. Within the Faculty, a subdivision of the network of integrated services operates, which enables the teaching, research and administrative operations of the University of Thessaly and broadens the ability to provide services to the members of academia. Hence, the opportunity for internet connection and fast communication among the various facilities of the University is provided.

The members of academia, the following services are available: e-mail (electronic mail account and Web Mail service), Web Server (http://www.uth.gr) with information regarding the academia and virtual private network.

Staff Network administrative staff C. Kalatzis, *BSc (Physics), MSc*

Maintenance service

Responsibilities The maintenance and security of the buildings and equipment of the faculty.

Staff Administrative staff G. Anastasiou

Transport service

Responsibilities The transport of personnel and students to the clinical training, to the educational visits and to any other activity of the Faculty, as well as the transport of animals from and to livestock farms to fulfill clinical, educational or research purposes.

Staff Driver G. Liotsos

ORGANISATION of UNDERGADUATE STUDIES

BEGINNINING of STUDIES

Permission to register in the Faculty of Veterinary Science of the University of Thessaly have the graduates of secondary education, based on their record in the national exams which take place every year at the C class of the Lyceum. Also, the Faculty of Veterinary Science can register graduates of Greek or foreign universities after their enrollment, which is carried out annually in the Faculty. Finally, citizens of foreign states can be registered in the Faculty based on the current interstate agreements, including applicants of special categories, as predicted with specific provisions of admission in higher education institutes, for example, distinguished athletes or individuals with severe illness.

The registration of freshmen occurs usually during the second fortnight of September after a relevant mandate of the Ministry of Education and Religious Affairs. The registration of the freshmen is realized through the internet. Where required, based on the current legislation, the registration of students takes place with the relevant decision of the Assembly.

DURATION of STUDIES – COURSES

The studies in the Faculty of Veterinary Science endure five academic years (ten semesters). The graduates of the Faculty possess the academic proficiency and practical expertise to practice the profession of the Veterinary Medical Doctor.

The prerequisites for the graduation, are successful attendance and examination in 83 courses, as well as successful practical training, which altogether correspond to a total of 300 ECTS.

After the successful completion of the studies ,a degree in Veterinary Medicine is awarded. The degree of Veterinary Medicine is equivalent to level 6 of the National Qualifications Framework, to level 6 of the European Qualifications Framework and the level 1 of the Framework for Qualifications of the European Education Area. The degree of Veterinary Medicine of the Faculty allows the practice of the veterinary profession throughout the European Union.

The students, after their written request to the Secretary of the Faculty, can interrupt their studies for as many semesters, continuous or not, that they wish. The total duration of

interruption of study cannot surpass the minimum number of semesters which are required in order to obtain the degree, that is ten (10) semesters. During the interruption of study, the student status is not valid, therefore the period of interruption does not count on the potential maximum permissible duration of the study, whereas the provisions of student care are suspended.

The resume of study is realized after approval of the Assembly or the authorized body, following the relevant request of the concerned students. The resume of the studies is always valid from the beginning of the next, from the deposition of the request teaching semester, unless the Assembly sets out the retrospective effect of its decision. Students, whose request for a resume of study is accepted, are enrolled in the same teaching semester as that, which their studies ceased, regardless of the time within the calendar year in which their request for a resume of study has been deposited.

ACADEMIC YEAR

Each academic year begins on September 1 and terminates on August 31 of the next calendar year, and is subdivided into two teaching semesters, the winter and the spring. Each semester comprises 13 teaching weeks, followed by a 4 weeks examination period. Also, there is a recurrent examination period for both semesters.

The precise dates of beginning and termination of the teaching and examination periods of every academic year are determined every year with the decision of the Senate, and are customized with the decision of the Assembly for better management of the academic time according to the specific needs of the Faculty.

The academic calendar for the period 2022-23 is as follows:

Beginning of the courses of the winter semester:	03 October 2022
Termination of the courses of the winter semester:	20 January 2023
Beginning of the examination period:	23 January 2023
Termination of the examination period:	17 February 2023
Beginning of the courses of the spring semester:	20 February 2023
Termination of the courses of the spring semester:	09 June 2023
Beginning of the examination period:	12 June 2023
Termination of the examination period:	07 July 2023
Beginning of the recurrent examination period:	04 September 2023
Termination of the recurrent examination period:	30 September 2023

Academic teaching is interrupted during the festive periods of Christmas and Easter and summer. In addition, holidays are the established official holidays of the state, the 4th of December (local holiday) and the 17th of November and the 30 th of January (academic holidays). The realization of on-call services by the students in the context of the operation of the Hospital of the Faculty does not interrupted and takes place throughout the academic year (including holidays and periods without teaching), based on the operational schedule of the Hospital and the relevant schedule of on-call services of the academic staff, and it is obligatory.

If for any reason, the number of realized teaching hours of a course is less than t/3 of the intended hours in the study guide , te respective course is considered that has not been taught.

TEACHING

OBJECTIVES

The Faculty of Veterinary Science aims to provide efficient education, based on the adopted curriculum of undergraduate studies. The program of undergraduate studies aims at the shaping of properly qualified scientists and professionals, with structured notions for the veterinary science, comprehension of the discipline in which they will be occupied and perception of the human-centric significance of veterinary science. The undergraduate curriculum provides the students with the opportunity:

- of understanding the principles of biology, as well as the structure and function of animal organisms,
- of distinction of the pathological from the normal and the understanding of the pathogenesis of the diseases,
- of management of animal production, to achieve the best production, the maintenance of animal health and welfare and the protection of public health through the implementation of the control of foods of animal origin,
- of prevention of diseases and animal protection,
- of diagnosis and treatment of the most common and important animal diseases, once consider the results of clinical and paraclinical exams,
- of effective communication with the animal owners, in order to receive the suitable information and to guide them towards the resolution of the problem,
- of understanding of complicated cases for referral to specialized veterinarians or to veterinary clinics,

• of understanding of the need for continuous professional and scientific training and education.

The teaching of the courses comprises lectures, tutorials, laboratory practice, clinical practice, and training visits.

Academic Teachers

The teaching of courses in the Undergraduate Program of Studies is undertaken by the following categories of teachers.

- Academics of the University of Thessaly
- Academic teachers and qualified laboratory personnel of the University of Thessaly.
- Scientists, which hold a PhD degree, according to the dispositions of PA 407/1980.
- Post-Doctors selected for teaching work.
- Academic fellows, scientists of recognized scientific status or outstanding technical expertise, according to the provisions of L. 4009/2011 and 4115/2013.

The participation of the academic teachers of all the aforementioned categories is approved by the Assembly of the Faculty.

In extraordinary cases, Greek or foreign invited speakers can give lectures.

Lectures

During the lectures, the most important parts of every course are presented and analysed. The lectures are realized in the auditoriums and the teaching classes of the Faculty with the aid of educational tools.

Laboratory training and tutorials

The laboratory practice and tutorials constitute a significant part of training; they are realized in groups of students in the laboratories of the Faculty. The scopes of the practical training are the familiarization with approach techniques, the advancement of skills and the practical attendance of effects described during the lectures. Attendance of laboratory training and tutorials is obligatory. To presume that the attendance of a course is completed, a student, cannot be unduly absent in more than 10% of laboratory training hours.

Clinical training

The clinical practice constitutes the main part of training in the 4th and 5th year of studies; they are carried out in groups of students in the clinics and laboratories of the Faculty, along with livestock holdings and slaughterhouses. Objectives of the clinical practice

are the improvement of the clinical skills of the students and the study of veterinary science on a professional level. In order to presume that the attendance of a course is completed, a student, cannot be unduly absent in more than 10% of clinical training hours.

Regarding the production of animals, veterinary services are provided in livestock farms throughout the Greek territory. In the context of their studies, the students accompany the teaching staff and participate in the treatment of clinical cases in bovines, ovines, caprines, swine, rabbits and poultry, along with regularly scheduled management visits in livestock farms. The training in the slaughterhouse comprises visits to industrial slaughterhouses, where the students are practiced during the examination of bovine, ovine, caprine, swine, avian, rabbit and game carcasses, according to the current legislation for public health protection.

Regarding the companion animals, veterinary medical services are provided to patients from across the country, which are referred by vets or are presented from their owners. In the context of their studies, the students attend clinical cases of dogs, cats, other companion animals, domestic birds and exotic animals and participate in scheduled surgical interventions.

The attendance of clinical training and the realization of various skills during the practice are recorded in is logbook of students.

Educational visits

The educational visits aim at the enrichment of experiences of the students, at the proliferation of their optical stimuli, at the closer interaction with the routine veterinary practice and the expansion of their professional horizon. The visits are carried out in research and diagnostic institutes, in industries of livestock products and foods and livestock farms.

Clinical associates

The veterinary surgeries and clinics nominated as clinical associates of the Faculty operate on their own business and operations plans.

The students attending clinical training in clinical associates must follow the full daily program of the surgery/clinic and they also must follow the plan for emergency cases and for hospitalized cases. The students are attending clinical training under the supervision of the members of the supervisory committee of the Faculty, who are in contact with each student daily, whilst the local supervisor is also responsible for daily tasks and guidance at the clinical associate.

Attending clinical training in clinical associates is equivalent to practice in the Department's Hospital. The University of Thessaly has approved the operation of certified External Affiliated Clinical Practice Centers (Minutes of the 162nd /14-09-2021 Meeting of the Rector's Council).

Teaching Attendance

Attendance of lectures is not obligatory. In the contrary, the attendance of tutorials, of the laboratory and clinical teaching, including educational visits is obligatory. The maintenance of a record book of the students which are in any practice, is the responsibility of the academic teachers.

Students which have been unduly absent in more than 10% (or on grounds of force majeure in more than 20%) of the realized practical training in a certain course during a semester are obliged to repeat the set of practice for the particular course. With the decision of the Head of each academic unit, the aforementioned percentages can offset for a group of courses which are taught from its own unit.

Within the academic units where a logbook is maintained, is possible, after the decision of the director of the unit, instead of a percentage of absences per realized practice, to be defined as a percentage of accomplishment of necessary skills, as it is recorded in the logbook.

Participation in the on-call services is obligatory. A record of the participation of students in the on-call services is maintained in each academic unit.

Beginning and termination of teaching

The time of the beginning of lectures is 15 min after the indicated on timetable hour (xx.15). The time of the beginning of practical training is 5 min after the indicated in timetable or in the specific schedule of each academic unit hour (xx.05). In any case, the teaching must begin within 2 min after the aforementioned hour. Especially for the practical training, each academic teacher can, in his view, to not accept the attendance of a student and to record the relevant absence after the expiry of the aforementioned time period.

The termination of each teaching hour must take place within 2 minutes from the scheduled termination of teaching. During the practical training, as long as the practice has not been completed, the academic teacher can prolong the teaching, provided that is feasible from the timetable, under no circumstances out of 10 min. from the scheduled termination of teaching.

TEACHING MATERIAL

The students can acquire gratis a textbook for every course, choosing from a list of at least two suggested textbooks, which, with the decision of the Assembly of the Faculty, have been considered suitable for the teaching of every course. In addition, in every course additional reference books can be designated for further study, from the existing books in the library of the Department. Finally, at the disposition of students there is a plethora of choices from teaching material like handouts, lectures in electronic form (e-class) etc.

STUDENT EVALUATION

The evaluation and the exams in the Faculty of Veterinary Science aim at the assumption and confirmation of knowledge examined in the context of learning objectives of each course of the curriculum. During the examinations, and the academic teacher's responsibility, the breadth the depth of knowledge of the examined students must be evaluated.

The student evaluation is continuous and is carried out based on their performance in the laboratory and clinical training, in the tutorials and the student works, and finally based on their performance in the exams.

Examinations

The exams take place at the end of every academic semester: January-February, for the course taught during the winter semester, and June, for the courses taught during the spring semester. The recurrent examination period takes place in September for all courses, where the successful exam has been defined as prerequisite for the attendance and examination of other courses, its examination is allowed, with no restrictions, during every exam period.

Examinations outside the exams period

The interim examination within the semester in order to out the progress and performance of the students, is allowed under the following conditions: (a) the relevant procedures of the examination must be at least two in the semester, (b) the latter procedure must take place during the last teaching week of the semester, (c) the exams must take place absolutely on Monday and the in time period at which the students of the corresponding year do not have teaching attendance(theoretical, laboratory or clinical), (d) the score of these

exam procedures to be taken into account with impact 50% (at least) to 70% (maximum) in the final score of the course.

Duration and program of the examination period

With the decision of the Assembly and relevant approval of the Senate, the duration of exams period can be fixed in four weeks. The relevant decision must be taken at the beginning of each academic year.

The program of the examination period must be fixed until the end of the 9th week of every academic semester. Specifically, for the program the of recurrent examination period, this must be fixed until the half of June. During the drawing up of the exams timetable, the opinion of the students is asked, which must be taken into account as much as possible.

The schedule of the exams period is approved with the decision of the Assembly. Modifications of the approved exam schedule is a Dean of the Faculty's decision, only for reasons of force majeure and after relevant cooperation with the Head of the academic unit which is responsible for the teaching of the respective course and the student's representatives.

The examination of certain students with *ad hoc* methods, different and additional of that one which has been fixed in the exams schedule is not allowed.

Examination process

The examination of each course can be written, oral, practical or a combination, at the discretion of the academic teacher of every course.

Regarding the disabled students with special educational needs, which are registered in the structure PROSVASI, the mode and the process of examination are recommended from the aforementioned structure of the University. The structure PROSVASI is responsible for the in time (at least one month before the beginning of the exams period) briefing of the academic teachers-examiners for the disabled students who registered in the structure, along with the procedure and preparation of the examination. For the unimpeded preparation of the examination from the examiners, the disabled students are obliged to denote in time the courses and the mode of examination at the Secretary of the Faculty.

The syllabus, on which the exams take place, must be notified to the students and must be posted on the platform e-class up to the 10th week of every academic semester. Within the same deadline, the details of the mode of examination (i.e., oral or written, theoretical or practical) and the methodology of the scoring (i.e., distribution of impact factor of various parts of the examination) must be notified as well.

Prerequisite courses

To sit in examinations of the following courses, the students must have successfully passed the respective referred courses ('prerequisite courses') in Table 1.

Table 1. Courses, that the students are obliged to successfully pass the relevant exams ('prerequisite courses'), in order to exams of the relevant courses.

Course	Sem.	Prerequisite courses	Sem.
Fish diseases and Health Management of Aquatic Species	5th	Ichthyology, aquatic fauna and aquacultures	3rd
Production Animal Medicine I	5th	Introduction to Animal Medicine	4th
Production Animal Medicine II	6th	Introduction to Animal Medicine	4th
Production Animal Medicine III	7th	Production Animal Medicine I	5th
Production Animal Medicine IV	8th	Production Animal Medicine I	5th
Practical trainining in Anesthesiology, Surgery and Diagnostic Imaging I	9th	Principles of Animal Surgery and Ophthalmology	6th
		Anesthesiology and intensive care	7th
		Orthopedic Surgery	7th
		Diagnostic Imaging	8th
		Soft tissues surgery	8th
Practical Training in Production Animal Medicine I	9th	Production Animal Medicine II	6th
		Production Animal Medicine III	7th
		Companion Animal Medicine IV	8th
		Production Animal Medicine IV	8th
Practical Training in Anesthesiology, Surgery and Diagnostic Imaging II	10th	Principles of Animal Surgery and Ophthalmology	6th
		Anesthesiology and Intensive Care	7th
		Orthopedic Surgery	7th
		Diagnostic Imaging	8th
		Soft tissues surgery	8th
Practical Training in Obstetrics and Reproduction	10th	Obstetrics and Reproduction I	5th
		Obstetrics and Reproduction II	6th

of Domestic Mammals II		Obstetrics and Reproduction III	7th
		Reproduction Physiology and Medicine of male mammal animals and artificial insemination	7th
		Obstetrics and Reproduction IV	8th
Practical Training in Companion Animal Medicine II	10th	Introduction to Animal Medicine	4th
		Companion Animal Medicine I	5th
		Companion Animal Medicine II	6th
		Companion Animal Medicine III	7th
		Companion Animal Medicine IV	8th
Practical Training in Production Animal Medicine II	10th	Production Animal Medicine II	6th
		Production Animal Medicine III	7th
		Companion Animal Medicine IV	8th
		Production Animal Medicine IV	8th
Practical training in Hygiene of Foods of Animal Origin II	10th	Technology of foods of animal origin and relevant legislation	3rd
		Hygiene and technology of milk and dairy products and relevant legislation	6th
		Hygiene of foods of Animal Origin and relevant legislation I	7th
		Hygiene of foods of Animal Origin and relevant legislation II, certification and composing reports	8th
		Practical training in Hygiene of Foods of Animal Origin I	9th

Permission of examination

The students are obliged to move to register for courses at the beginning of each semester, according to the relevant orders. Students which have not submitted registration forf courses within the fixed deadline at the beginning of the academic semester, according to the relevant orders are is considered that they do not attend the course and consequently cannot be examined. In case of mistaken examination, they do not receive a score.

Students, who failed to pass the exams of courses, which their success is prerequisite for the examination of other courses, they cannot be examined in the aforesaid courses.

The disabled students, at least one week before the beginning of the examination period, must submit to the Secretary of the Faculty a request to be examined in the denoted

course with a different mode, just as has been determined for every student specifically from the structure PROSVASI.

Students, which have been registered in the Faculty after their enrollment, deserve exemption from the exams of courses, which request accordingly to the Faculty. Their request is evaluated by a committee of academics, which *ad hoc* has been nominated and authorized from by the assembly. For decision-making, the committee asks for a relevant recommendation from the academic teachers of each course. f, within ten days, no submission of recommendation is delivered, the decision is considered positive. The score, is determined by the aforementioned committee based on the recommendation of the academic teachers.

Successful Examination

The evaluation of the students is considered successful when the score received in the examination is greater or equal to five (5) in a score scale from zero (0) to ten (10). The score scale has gradients of half a unit.

Requests from students for minimum score threshold, for success affirmation, which is submitted before, during or after the exam of a course, are not considered at all and are rejected immediately.

Use of irregular means for examination success

Students which use irregular means in order toto pass successfully the exams are rejected immediately. In such cases, the written matter does not examine at all and the student is scored with the score zero (‘0’). Incidents of students who use irregular means to pass successfully the exams are reported immediately, on academic teachers' responsibility, to the Dean of the Faculty and the Provost of the School of Health Sciences.

Re-examination of courses in which a student has already passed successfully

Re-examination of courses, in which a student has already passed successfully, is allowed after cooperation with academic teachers that permit such procedure, to ameliorate their score.

Re-examination will take place at two examination periods after the initial success, must be applied only once for each course and must be applied in a total of five courses of the entire curriculum, and the score is definitive.

Announcement of scores

The submission of scores from the academic teachers is inevitably accomplished within 21 days from the day of the examination. After the termination of the exams period, on Secretary's and Dean's responsibility, in the Assembly, the aggregated results of scoring are announced.

The scores which are announced by the Secretary, are the sole officials and qualifying. The informal announcement, of scores, from the academic teachers, is unofficial and does not create rights or obligations for the students.

Correction of scores

The correction of the score is realized from the academic teacher of the course or the head of the relevant academic unit. The correction is realized with in-person presence of the aforementioned at the Secretary and signed note of the corrected score in the class book of each score. Correction can be realized within two months from the termination of the respective exam period.

PRACTICAL TRAINING

The practical training aims at the familiarization of the students of the Faculty with the conditions that prevail in veterinary practice. The practical training has a total duration of at least two months and is compulsory. The practice is accomplished during the summer months, after the 6th or the 8th semester, and is officially integrated into the approved curriculum of the Faculty as an independent course. Its successful completion is essential prerequisite for the reception of degree.

The practical training of the students of the Faculty is financed by the program NSRF 2014-2020.

The practical training can be realizedi: in private veterinary services which keep up farms of production animals or examine and treat companion animals, in public veterinary services, in enterprises of processing products of animal origin or animal feed, in livestock farms or veterinary laboratories. During the practical training, the trainees have the same duties and enjoy equal treatment with the rest employees of the cooperating body, so that they can acquire professional conscience.

After the termination of practical training, the students submit at the Faculty of Veterinary Science the certificate of realization of practical training (granted from the body where the practice was accomplished), their evaluation sheet during practical training

(completed by from the supervisor officer of the body) and the evaluation report of the practical training (compiled from the students).

The realization of practical training is conditioned from the approved Regulation of practical training of the Faculty of Veterinary Science.

PROGRAM of STUDENTS' MOBILITY ('ERASMUS')

The students of the Faculty of Veterinary Science have the right to participate in the action Erasmus of the LLP program. The action concerns: (a) inter-European cooperation in the field of higher education, through the encouragement of the r-state cooperation among Universities and the increase of academic society and (b) the enforcement of transparency and promotion of complete academic recognition of studies and academic titles throughout European Union.

The students of the Faculty can participate in the curriculum of veterinary educational foundations of states that take part in the action Erasmus (the 27 states of the European Union and Iceland, Lichtenstein, Norway and Turkey) for recognized periods and for practical training. The University of Thessaly has until now signed bilateral agreements with 172 Universities ('foundations-partners') of the aforementioned states.

The period of studies, which is carried out by the foundation partner varies from three to twelve months and is recognized as an integral part of the curriculum at the University of Thessaly. This period (including the exams and other forms of evaluation that have taken place) is fully recognized to replace respective periods of studies (likewise including the exams or other types of evaluation in the University of Thessaly), even though the content differs. In the receiving university, fees are not paid by the mobile students.

Students, which have been successfully examined in other veterinary educational foundations, in the context of action Erasmus, deserve exemption from the relevant exams regarding the part of each course, on which they have been examined successfully. Students which study for some time in other veterinary educational foundations in the context of action Erasmus, submit the relevant documents for recognition of their training in the context of action within 2 weeks from their return. Once the relevant mapping has been completed, the recognition is obligatory for the Faculty and the respective academic teachers.

In the mobility program, are allowed to participate, students, which fulfill the following premises:

- Compliance about nationality criteria, that is (a) citizens or nationals of state-member of the European Union or other state which participates in the mobility program or (b) individuals

who have been recognized officially by the Greek authorities as refugees, stateless or permanent residents, a state which will be proved from official certificates of qualified Greek official authorities,

- At least completion, of the first year studies in the University of Thessaly,
- Incomplete supplementation of the minimum required number of teaching units for degree receipt (that is to lack a period of studies at the time of request submission, so that can be replaced with studies in a certain university which participates in the mobility program),
- Proficient knowledge of the language in which the courses of the reception foundation are taught.

In the action Erasmus, can participate under the aforementioned conditions, postgraduate students and PhD students of the Faculty of Veterinary Science.

More information about the action Erasmus (submission procedure of request, list of affiliate foundations cis are available from the academic liaison of the program Erasmus in the Faculty of Veterinary Science, and in the website of the University of Thessaly as well. The relative electronic address i: http://erasmus.uth.gr/index.php/el/.

CURRICULUM of UNDERGRADUATE STUDIES

The Assembly of the Faculty is qualified to compile, approve and revise the curriculum of undergraduate studies. The curriculum has been adopted at the number of semesters, which the attendance in the Faculty of Veterinary Science endures, and includes the titles of the courses, their content, the teaching hours of every course, the distribution of contact hours based on the type of teaching and the temporal sequence of the courses.

The titles of courses, their distribution per semester of studying and the teaching hours are presented in table 2.

A total of 76 obligatory courses are included in the curriculum. The successful examination in all compulsory courses is an essential condition for the degree receipt.

In the curriculum, a total of 24 elective courses are also included. The successful examination in a total of 7 elective courses (one in every semester in which elective courses are offered), based on the study guide, an is essential condition for degree receipt. In the following table, the number of elective courses which are offered per semester is presented; from those courses, only one can be selected in the corresponding semester.

he maximum proportion of students of the respective semester, that can register in the certain elective course is defined as:

70% of students of the semester, provided that in the semester, 2 elective courses are offered,

40% of students of the semester, provided that in the semester, 3 elective courses are offered,

30% of students of the semester, provided that in the semester, 4 elective courses are offered and

24% of students of the semester, provided that in the semester, 5 elective courses are offered.

The allocation of students in order toto attend the elective courses inevery semester is realized in chronological order during the registration of courses.

Ultimately, the successful examination in 84 courses (76 obligatory courses, 7 electives and successful completion of practical training) is essential for the degree receipt.

Table 2. Curriculum – Brief titles of the courses, their distribution per semester of study and their teaching hours in the Faculty of Veterinary Science.

	Lectures (contact hours per semester)	Laboratory training (contact hours per semester)	ECTS		Lectures (contact hours per semester)	Laboratory training (contact hours per semester)	ECTS
1st semester				**2nd semester**			
English veterinary terminology I	13	0	1	English veterinary terminology II	13	0	1
Genetics	26	26	4	Biochemistry of the metabolism	22	26	4
Introduction to Biochemistry	22	26	4	Animal husbandry, Ethology, Welfare and relevant legislation II	26	26	4
Animal Nutrition and Plant Biology	26	39	5	Macroscopic Anatomy II	39	39	6
Animal husbandry, Ethology, Welfare and related legislation I	26	26	4	Bee Production and Medicine	13	13	1
Macroscopic Anatomy I	39	39	6	Microscopic Anatomy II	26	20	5
Microscopic Anatomy I	26	20	5	Physiology I	39	78	8
Selective course: (1) Physics for Veterinary science, (2) Zoology	13	0	1	Selective course: (1) Cellular and Molecular Biology, (2) Ecology	13	13	1
TOTAL	191	176	30	TOTAL	191	215	30
3rd semester				**4th semester**			
Biostatistics	20	26	3	Immunology	20	39	4
General Microbiology	26	39	6	Introduction to Animal Medicine	26	52	7
Ichthyology, aquatic fauna and Aquacultures	26	26	5	General Pathology	26	26	4
Veterinary ethics and legislation	13	13	1	Diagnostic Microbiology	26	39	5
Animal health Economics	20	26	3	Parasitology and Parasitic diseases I	20	26	4
Technology of foods Animal origin and relevant Legislation	26	26	4	Pharmacology	39	50	5
Physiology II	39	78	8	Selective course: (1) Molecular microbiology and parasitology, (2) Bee products	13	13	1
TOTAL	170	234	30	TOTAL	170	245	30

	(contact hours per semester)				(contact hours per semester)		
5th semester				**6th semester**			
Organ Specific Pathology	26	26	4	Principles of Animal Surgery and Ophthalmology	39	13	5
Fish diseases and health management of Aquatic species	13	52	5	Veterinary Epidemiology	26	26	3
Infectious diseases and related νομοθεσία I	20	26	4	Infectious diseases and relevant legislation II	20	26	4
Obstetrics and Reproduction I	26	0	3	Obstetrics and Reproduction II	39	0	3
Companion Animal Medicine I	26	24	4	Companion Animal Medicine II	26	24	5
Production Animal Medicine I	26	16	4	Productive Animal Medicine II	26	16	5
Parasitology and Parasitic diseases II	20	26	4	Hygiene and technology of milk and dairy products and relevant legislation.	22	26	3
Toxicology	13	13	1	Summer Practical Training		240	1
Elective course : (1) Introduction to Intensive Care, (2) Husbandry/Pathology of most important aquatic organisms (except fishes), (3) Clinical laboratory diagnostics, (4) Zoonoses through a single health approach, (5) Comparative pathology and animal models of human diseases	13		1	Elective course: (1) Principles of function and use of anesthesiologic equipment, (2) General Histopathology of Animal Organisms, (3) Interpretation of clinical examination in companion animals, (4) Selective diseases of the wild fauna	13	13	1
TOTAL	183	183	30	TOTAL	211	384	30
7th semester				**8th semester**			
Anesthesiology and Intensive Care	39	13	4	Diagnostic Imaging	13	39	3
Diagnostic pathology – Veterinary Forensic Medicine I	20	23	3	Diagnostic pathology – Veterinary Forensic Medicine II	20	23	3
Obstetrics and reproduction III	20	29	3	Clinical pharmacology and pharmacy	13	0	1
Orthopedic Surgery	39	0	3	Obstetrics and Reproduction IV	26	39	4
Companion Animal Medicine III	26	23	4	Companion Animal Medicine IV	20	23	3
Productive Animal Medicine III	26	16	4	Productive Animal Medicine IV	20	16	3
Poultry Medicine I	26	16	3	Poultry Medicine II	26	16	3
Hygiene of Foods of Animal Origin I	39	39	4	Hygiene of foods of animal Origin and Relevant legislation II, Certification and Composing Reports	39	39	5

	Lectures (contact hours per semester)	Laboratory training (contact hours per semester)	ECTS		Lectures (contact hours per semester)	Laboratory training (contact hours per semester)	ECTS
7th semester (continued)				**8th semester (continued)**			
Reproduction Physiology and Medicine of male mammal animals and artificial insemination	20	10	2	Soft tissue surgery	39	39	5
TOTAL	255	169	30	TOTAL	255	169	30
9th semester				**10th semester**			
Practical training in Anesthesiology, Surgery and Diagnostic Imaging I	0	55	4	Herd heath management	13	13	1
Practical Training in Diagnostic Pathology and Veterinary Forensic Medicine I	0	39	3	Practical training in Anesthesiology, Surgery and Diagnostic Imaging II	0	55	4
Practical Training in Obstetrics and Reproduction of Domestic Mammals I	0	65	6	Practical Training in Diagnostic Pathology and Veterinary Forensic Medicine II	0	39	3
Practical Training in Companion Animals Medicine I	0	55	4	Practical Training in Obstetrics and Reproduction of Domestic Mammals II	0	65	5
Practical training in Production Animal Medicine I	0	36	3	Practical Training in Companion Animals Medicine II	0	55	5
Practical Training in Poultry Medicine I	0	26	2	Practical training in Production Animal Medicine II	0	36	3
Practical Training in Hygiene of foods I	0	65	6	Practical Training in Poultry Medicine II	0	26	2

	Lectures (contact hours per semester)	Laboratory training (contact hours per semester)	ECTS		Lectures (contact hours per semester)	Laboratory training (contact hours per semester)	ECTS
9th semester (continued)				**10th semester (continued)**			
Elective course: (1) Bovine Reproduction Elective course, (2) Companion Animal Dermatology Elective course, (3) Feline Medicine Elective course, (4) Application of innovative ideas and technology in pig	13	13	2	Practical training in Hygiene of Foods II	0	65	5

and poultry production							
				Career planning, Veterinary Practice Management and relevant legislation	13	13	1
				Elective course: (1) Companion Animal Reproduction elective course, (2) Small Ruminant Reproduction Elective course, (3) Tumors in companion animals, (4) Food Quality Control and Relevant Legislation, (5) Companion Animal Physical Therapy	13	13	1
TOTAL	13	354	30	TOTAL	39	380	30

Content of Courses

1) Macroscopic Anatomy I: Macroscopic anatomy of musculoskeletal and nervous system, sensory organs and digestive system of domestic mammals

Course category: Obligatory.

Course outline: Introduction to animal morphology, planes and regions of the animal body, and general anatomical terminology. Comparative osteology: introduction, vertebral column, thorax, fore limbs, hind limbs, skull. Comparative syndesmology. Comparative myology: introduction, terminology, muscles of the head, neck, thorax, abdomen, tail and limbs. Comparative neuroanatomy: introduction, terminology, functional anatomy of the central nervous system, brain and neural pathways, meninges of the brain and the spinal cord, functional anatomy of the peripheral nervous system and autonomic nervous system. Sensory organs: eye, ear. Anatomy of the digestive system: comparative anatomy of the oral cavity, teeth, salivary glands and pharynx; topographical anatomy of the esophagus, abdominal cavity, stomachs, small and large intestine, liver and pancreas; anatomy of the spleen.

A number of contact hours/semester: 39 hours for lectures and 39 hours for tutorials and laboratory training.

ECTS: 6.

Qualifications of coordinator(s): PhD with teaching, laboratory and/or research experience in Veterinary Anatomy, Histology and Embryology.

Teaching targets: 1) Knowledge of the topography of the body. 2) Recognition and identification of the organs of musculoskeletal system, sensory organs, and organs of the digestive system of domestic mammals. 3) Association of the anatomical structures of the musculoskeletal and nervous system, sensory organs and digestive system with relevant normal functions and selected pathological conditions. 4) Association between the muscles and relevant meat cuts.

2) Microscopic Anatomy I: Structure of cell and tissues, microscopic the anatomy of nervous systems digestive system and of sensory organs

Course category: Obligatory.

Course outline: Introduction. Cell structure: morphology of cell membrane, organelles, nucleus, mitosis, meiosis and apoptosis. Epithelial tissue: covering, lining and glandular epithelium. Connective tissue: connective tissue proper, blood cell morphology, myeloid and lymphatic tissue, microscopic anatomy of lymph nodes, tonsils, thymus and spleen,

cartilage, bony tissue, microscopic anatomy of joints. Muscle tissue: striated, smooth, and cardiac muscle. Nervous tissue: nerve cells, nerve fibers, neuroglia, microscopic anatomy of grey and white matter, nerves, ganglions, and meninges. Digestive system: introduction, microscopic anatomy of oral cavity, tongue, teeth, gingiva, pharynx, salivary glands, esophagus, stomachs, small and large intestine, liver and pancreas. Sensory organs: microscopic anatomy of eye bulb, eyelids, lacrimal apparatus, external, median, and inner ear.

Nnumber of contact hours/semester: 26 hours for lectures and 20 hours for tutorials and laboratory training.

ECTS: 5.

Qualifications of coordinator(s): PhD with teaching, laboratory and/or research experience in Veterinary Anatomy, Histology and Embryology.

Teaching targets: 1) Identification of various organs of the nervous and digestive systems, tissues and of cellular structures in histological sections. 2) Association between microscopic structures of various tissues, nervous, digestive system and sensory organs with basic normal functions of the body and with selected pathologic conditions.

3) Animal Nutrition and Plant Biology

Course category: Obligatory.

Course outline: Plant biology: morphologic characters of grasses, legumes and compound feeds; cultivation of the most important intensively cultivated feeds. Plant development: shoot, leaves, flowers, root, root hair, molecular genetics and role of hormones, water ion and biomolecules uptake and transport, conversion of radiant to chemical energy; medicinal plants. Animal nutrition: feeds, additives and their chemical analysis; physiology of nutrition: food intake, energy distribution and utilization, protein and lipid metabolism and biological value, the physiological role of minerals and vitamins, energy and nutrient requirements; livestock nutrition, ration formulation, feeding systems, the importance of nutrition on livestock health and product quality; canine and feline nutrition; essentials of clinical nutrition.

A number of contact hours/semester: 26 hours for lectures and 39 hours for tutorials, laboratory training, and farm and feed plant visits.

ECTS: 5.

Qualifications of coordinators: PhD with teaching, laboratory, clinical and/or research experience in Animal Nutrition.

Teaching targets: 1) Identification of grasses, legumes and compound feeds. 2) Essentials of feed cultivation. 3) Essentials of plant development. 4) Physiology of nutrition. 5) Livestock nutrition, ration formulation and feeding systems. 6) Canine and feline nutrition. 7) Essentials of clinical nutrition.

4) Animal Husbandry, Ethology, Welfare and relevant Legislation I: Husbandry, ethology and welfare of the dog, cat, equines, rabbits and birds and relevant legislation

Course category: Obligatory.

Course outline: Trends and prospects of canine, feline, equine, rabbit and poultry genetic improvement, husbandry and relevant legislation; essentials of canine, feline, equine, rabbit and poultry ethology, welfare and relevant legislation; definition and subdivision of breeds and importance of rare breed conservation; main canine, feline, equine, rabbit and poultry breeds; essentials of developmental physiology and breeding of dogs, cats, equines, rabbits and poultry and relevant legislation.

A number of contact hours/semester: 26 hours for lectures and 26 hours for tutorials, farm and breeding facility visits.

ECTS: 4.

Qualifications of coordinators: PhD with teaching and/or clinical experience in genetic improvement, husbandry, ethology and welfare of domestic animals.

Teaching targets: 1) Essentials of canine, feline, equine, rabbit and poultry ethology, welfare and relevant legislation. 2) Definition and subdivision of breeds and main canine, feline, equine, rabbit and poultry breeds. 3) Essentials of developmental physiology and breeding of dogs, cats, equines, rabbits and poultry.

5) Genetics

Course category: Obligatory.

Course outline: Genes and genetic code, biological information, functions and biological systems; molecular affinity of organisms and evolution of the genome; structure and mutations of eukaryotic genes, chromosomes and cellular division (mitosis, miosis); essentials of heredity; qualitative characteristics, types of crosses, splitting and independent recombination; genetic analysis, hypothesis testing and probabilities, pedigree analysis; sex determination, sex chromosomes, sex-linked heredity, relationship between sex and heredity; cytoplasmic heredity, maternal effect, epigenetic heredity, genetic expectation, genotype and the environment; linkage, recombination and gene mapping; changes of chromosome structure and number; population genetic structure, panmixia hypothesis,

Hardy-Weinberg (H-W) low, properties of equilibrium population (H-W) and equilibrium testing; extensions for multiple alleles, sex-linked and sex-influenced genes; effects of mutation, migration and selection on the genetic composition of a population for simple mendelian characteristics; adaptation coefficient types of selection and changes on the prevalence of alleles in a population.

A number of contact hours/semester: 26 hours for lectures and 26 hours for tutorials and laboratory training.

ECTS: 4.

Qualifications of coordinators: PhD with teaching, clinical and/or research experience in animal Genetics ann congenital and hereditary diseases.

Teaching targets: 1) Variation and relationship between genotype and phenotype. 2) Character inheritance models. 3) Genetic terminology. 4) Use of hypothesis-conclusion methodology and genetic problem-solving. 5) Study of molecular, individual and population characters. 6) Study and analysis of scientific articles relevant to domestic animal genetics.

6) Introduction to Biochemistry

Course category: Obligatory.

Course outline: Lectures: properties of molecules in living organisms, buffers, colloids (milk), suspensions (blood), osmosis (hemolysis); source and biological importance of minerals and trace elements; amino acids and proteins: structure and function, catalysis, enzymes, kinetics and control of enzymatic reactions, hemoglobin, membrane channels and pumps; lipids and cell membranes; carbohydrates: properties and biological importance. Tutorials and laboratory training: safety in biochemical laboratory, essentials of laboratory exercises, chemicals and equipment, use of analytical balances, solution preparation and dilution, preparation of use of buffer solutions, use of pH indicators, use of pH-meters, introduction and methodology of biochemical analysis, volume measurement, acid and base concentration, feed buffering capacity, chloride ion measurement, use of photometer, measurement of manganese and vitamin C, application of biochemical methods found in bibliographic sources.

NumberA number of contact hours/semester: 22 hours for lectures and 26 hours for tutorials and laboratory training.

ECTS: 4.

Qualifications of coordinator(s): PhD with teaching, laboratory and/or research experience in Biochemistry.

Teaching targets: 1) Molecular structure of living organisms. 2) Basic biochemical processes, chemical components of organisms and their properties. 3) Handling basic utensils, instruments, and equipment of biochemical laboratories. 4) Preparation of solutions and reagents for diagnostic purposes. 5) Interpretation of experimental data.

7) English Veterinary Terminology I: General and biological terms

Course category: Obligatory.

Course outline: Scientific terms which are used in biological sciences, especially in Veterinary Science, and are relevant to the structure and function of the orgaA number

Number of contact hours/semester: 13 hours for lectures.

ECTS: 2.

Qualifications of coordinator(s): PhD or other qualification that enables independent training at a University level with high-level knowledge and teaching experience in English Veterinary terminology.

Teaching targets: 1) English scientific terms which are relevant to the structure and function of organisms.

8) Elective courses

Every student will attend one of the three elective courses and the maximum number of students that can attend each of them corresponds to the 40% of the registered students attending the 2nd semester.

8.1) Zoology

Course Category: Elective.

Course outline: Taxonomy-systematics; ontogenesis and biological stages of animals; metazoan body components. General characteristics of protozoa; Mastigophora, Rhizopoda, actinopoda, Ciliophora, Sporozoa, cnidosporidia, Platyhelminthes, aschelminthes, Annelida; arthropods: general characteristics, arachnids, insects; Chordata: general characteristics, cephalochordate, vertebrates, Gnathostomata, tetrapods (general characteristics, amniotic fluid), amphibia, reptiles, aves, mammals; evolution, theories of evolution and phylogenesis.

A number of contact hours/semester: 13 hours for lectures and 13 hours for tutorials and laboratory training.

ECTS: 1

Qualifications of coordinator(s): PhD with teaching, laboratory and/or research experience in Zoology.

Teaching targets: 1) Current zoological terminology. 2) Organization and morphological characteristics of the most species for Veterinary Science. 3) Evolution and phylogenesis.

8.2) Physics for Veterinary Science

Course Category: Elective.

Course outline: Lectures: X-rays, interaction of photons and particles with materials, ionizing and non-ionizing radiation, ionizing radiation dosimetry, essential physics of radiology and nuclear medicine, essentials of actinobiology and radiation protection. Tutorials and laboratory training: X-ray producing device operation, radiation measurement and protection, operation of selected medical equipment (thermometer, sphygmomanometer, ultrasound, computed tomography, magnetic resonance imaging).

A number of contact hours/semester: 13 hours for lectures and 13 hours for tutorials and laboratory training.

ECTS: 1

Qualifications of coordinator(s): PhD with teaching, laboratory and/or research experience in Zoology.

Qualifications of coordinator(s): PhD, with teaching and/or research experience in Medical Physics.

Teaching targets: 1) Radiation and living tissue interactions. 2) Radiation protection. 3) Operation principles of medical devices.

1) Physiology I: Physiology of the cell, nervous system and sensory organs, muscular, cardiovascular, respiratory and digestive system

Course category: Obligatory.

Course outline: Lectures: cell (physiology of organelles, intracellular and extracellular fluid, membrane permeability, energy sources, cellular communication and homeostasis). Nervous system: physiology of neuron, synapses, nerves, spinal neurons brain, cerebrospinal fluid, blood-brain barrier, sleep, memory, pain, nerve tracts, autonomic nervous system and chemical mediators, the influence of nutrition and hormones and sex differences. Sensory organs: vision, hearing, balance, taste and smell. Muscular system: physiology of skeletal and smooth muscles and myocardium. Cardiovascular system: physiology of blood, hematopoietic system, bleeding, hemostasis, fibrinolysis; physiology of the heart, blood vessels and vasomotor fibres; heart cycle, venous return, blood pressure; parameters and mechanisms controlling cardiovascular function; blood circulation in various organs, cardiovascular changes in special conditions; lymphatic system; angiogenesis. Respiratory system: physiology of lungs and alveoli, inspiration and expiration, intrapulmonary and

intrathoracic pressure, air volumes, lung capacity, dead space, ventilation, transport of gases; frequency, characteristics and types of respiration, coughing, sneezing, yawning, purring, panting; respiration in special conditions. Digestive system of monogastrics and ruminants: gastrointestinal tract motility and reflexes, eructation, secretions, enzymatic and microbial digestion and absorption. Tutorials and laboratory training: neuron (membrane potential, action potential, impulse conduction), synapses (excitement, inhibition, properties), chemical mediators, receptors, brain and spinal cord reflexes, electroencephalogram, pain, encephalins, endorphins, acupuncture; electromyography of skeletal muscles (muscle tone, motor end-plate, isotonic and isometric contraction, relaxation, fatigue, tetanus). Microcirculation exchanges (hydrostatic and colloid osmotic pressure, capillaries, intracellular fluid, interstitial fluid, oedema, edema). Blood sampling (small ruminants, rabbits), physicochemical characteristics of blood and plasma, coagulation and anticoagulants, plasma and serum, bleeding and clotting times, blood groups, sedimentation rate and erythrocyte resistance, hemolysis; microhematocrit, phasmatophotometric haemoglobin determination, leukocyte measurement with ha emocytometer, differential count. Principles of electrocardiography and hemodynamics, blood pressure and pulse measurement, and heart auscultation. Respiration: air volumes, lung capacity and recordings of respiratory movements. Gastrointestinal tract motility (monogastrics and ruminants), smooth muscles. Liver.

A number of contact hours/semester: 39 hours for lectures and 78 hours for tutorials and laboratory training.

ECTS: 8.

Qualifications of coordinator(s): PhD with teaching and/or laboratory experience in comparative Veterinary Physiology.

Teaching targets: 1) Basic principles and mechanisms of normal animal body function and their relationships from the biochemical to the system level and the function of the entire organism. 2) Basic principles of comparative Veterinary Physiology of the nervous system, sensory organs, muscular, cardiovascular, respiratory and digestive system, relationship with macroscopic and microscopic structures, and with pathophysiological conditions. 3) Recording, evaluation and presentation of the results of Physiology exercises.

2) Macroscopic Anatomy II: Macroscopic anatomy of the cardiovascular, respiratory and urinary system, skin, mammary gland, a genital system of domestic mammals and avian macroscopic anatomy

Course category: Obligatory.

Course outline: Cardiovascular system: introduction, terminology, heart, topographic anatomy of arteries, veins and lymphatics. Respiratory system: comparative and topographic anatomy. Urinary system: kidneys, ureters, urinary bladder, urethra. Skin and mammary gland: horny elements of the skin, comparative anatomy of the mammary gland. Male and female genital system: comparative and topographic anatomy. Avian anatomy

A number of contact hours/semester: 39 hours for lectures and 39 hours for tutorials and laboratory training.

ECTS: 6.

Qualifications of coordinator(s): PhD with and must have teaching, laboratory and/or research experience in Veterinary Anatomy Histology and Embryology

Teaching targets: 1) Recognition and identification of the organs of cardiovascular, respiratory, urinary system, skin, mammary gland and genital systems of domestic mammals. 2) Association of the anatomical structures of the cardiovascular, respiratory, urinary system, skin, mammary gland and genital system with relevant normal functions and selected pathological conditions. 3) Avian anatomy.

3) Microscopic Anatomy II: Microscopic anatomy of the cardiovascular, respiratory and urinary system, endocrine glands, skin and genital system and embryology

Course category: Obligatory.

Course outline: Cardiovascular system: microscopic anatomy of heart, arteries, veins, capillaries and lymphatic vessels. Respiratory system: microscopic anatomy of nasal cavities, nasopharynx, larynx, trachea and the lungs. Urinary system: microscopic anatomy of kidneys, renal pelvis, ureters, urinary bladder and urethra. Endocrine glands: microscopic anatomy of pituitary gland, hypothalamus, thyroid, parathyroid and adrenal glands, Langerhans and pineal gland. Skin: microscopic anatomy of skin, skin glands and horny elements and mammary gland. Male genital system: microscopic anatomy of the testis, epididymis, ductus deferens, male accessory glands and penis. Female genital system: microscopic anatomy of ovaries, oviducts, uterus, vagina and vulva. Embryology: introduction, embryogenesis, morphogenesis, essentials of organogenesis; formation of nervous, musculoskeletal system, cardiovascular, digestive, respiratory and urogenital system, skin and organs of vision, hearing and balance; embryonic membranes, placenta; congenital malformations, essentials of teratology.

A number of contact hours/semester: 26 hours for lectures and 20 hours for tutorials and laboratory training.

ECTS: 5.

Qualifications of coordinator(s): PhD with teaching, laboratory and/or research experience in Veterinary Anatomy, Histology and Embryology.

Teaching targets: 1) Identification of various organs of the cardiovascular, respiratory and urinary system, endocrine glands, skin and genital system in histological sections.

Identify in histological sections, various organs, tissues and cellular structures. 2) Association between microscopic structures of the cardiovascular, respiratory system, endocrine glands, skin system with basic normal functions of the body and with selected pathologic conditions. 3) Essentials of embryology of domestic mammals

4) Animal Husbandry, Ethology, Welfare and relevant Legislation II: Genetic improvement, husbandry, ethology and welfare of the cattle, small ruminants, pigs and aquatic organisms and relevant legislation

Course category: Obligatory.

Course outline: Basic principles and methods of genetic improvement: selection and mating systems in qualitative characteristics; definition and importance of the coefficient of heritability. Breeding of cattle, small ruminants, pigs and aquatic organisms: social and economic importance, international and national data, origin and evolution, trends and prospects of genetic improvement and husbandry, population and quantitative genetics and relevant legislation; essentials of cattle, small ruminant, pig and aquatic organism ethology, welfare and relevant legislation; main bovine, small ruminant and porcine breeds and importance of rare breed conservation; essentials of developmental physiology and breeding of cattle, small ruminants, pigs and aquatic organisms and relevant legislation.

A number of contact hours/semester: 26 hours for lectures and 26 hours for tutorials and farm visits.

ECTS: 4.

Qualifications of coordinators: PhD with teaching and/or clinical experience in genetic improvement, husbandry, ethology and welfare of cattle, small ruminants, pigs and aquatic organisms.

Teaching targets: 1) Principles and methods of genetic improvement. 2) Origin, evolution, genetic improvement, population and quantitative genetics and husbandry of cattle, small ruminants, pigs and aquatic organisms and relevant legislation. 3) Essentials of bovine, small ruminant, porcine and aquatic organism ethology, welfare, and relevant legislation. 4) Main bovine, small ruminant, and porcine breeds. 5) Essentials of developmental physiology and breeding of cattle, small ruminants, pigs, and aquatic organisms.

5) Biochemistry of Metabolism

Course category: Obligatory.

Course outline: Lectures: regulation of body function and metabolism at the molecular level, chemical balance, energy and chemical reaction coupling, glycolysis, gluconeogenesis, citric acid cycle, oxidative phosphorylation, glycogen and fatty acid metabolism at the molecular level, protein turnover and amino acid metabolism at molecular level, organ-specific metabolism. Tutorials and laboratory training: determination of protein and phosphate concentration in serum, the kinetics of enzymatic reactions, standard curve, analysis and separation of amino acids in biological samples with thin layer chromatography, measurement of serum cholesterol concentration, semi-quantitative determination of amylase activity in biological fluids, finding and estimation of protein properties in databases, identification and analysis of serum proteins with agarose gel electrophoresis, animal identification fa rom serum sample.

A number of contact hours/semester: 22 hours for lectures and 26 hours for tutorials and laboratory training.

ECTS: 4.

Qualifications of coordinator(s): PhD with teaching, laboratory and/or research experience in Biochemistry.

Teaching targets: 1) Essentials of energy and important molecule production. 2) Handling specialized equipment of biochemical laboratories. 3) Finding and applying anaof lytical methods for diagnostic purposes.

6) English Veterinary Terminology II: Body system terms

Course category: Obligatory.

Course outline: Scientific terms which are used in Veterinary Science and are relevant to the structure and function of body systems.

A number of contact hours/semester: 13 hours for lectures.

ECTS: 1.

Qualifications of coordinator(s): PhD or other qualification that enables independent training at a University level with high-level knowledge and teaching experience in English Veterinary terminology.

Teaching targets: 1) English scientific terms which are relevant to the structure and function of body systems.

7) Bee Production and Medicine

Course category: Obligatory.

Course outline: Lectures: morphology, anatomy and physiology of bees; biology and nutrition of bee hive; essentials of beekeeping; defense mechanisms of a bee hive, diseases and enemies of bees, measures of hygiene and prevention of transmissible diseases; honey, toxicoses and adulteration. Tutorials, laboratory training and visits to beekeeping and honey processing plants: clinical examination, sampling for laboratory examinations, and basic manipulations in beekeeping.

Number of contact hours/semester: 13 hours for lectures and 13 hours for tutorials, laboratory training and visits to beekeeping and honey processing plants.

ECTS: 1.

Qualifications of coordinator(s): Veterinarians, PhD with teaching, laboratory, clinical and/or research experience in Bee Production and Medicine

Teaching targets: 1) Bee biology and physiology. 2) Essentials of bee production. 3) Diagnosis, treatment and prevention of bee diseases.

8) Elective courses

Every student will attend one of the three elective courses and the maximum number of students that can attend each of them corresponds to the 40% of the registered students attending the 2nd semester.

8.1) Ecology

Course Category: Elective.

Course outline: Ecosystem: stability, components of biotic and abiotic ecosystems and their interactions, energy flow, trophic webs, von Liebig law, bio-accumulation; production, productivity and restrictive factors in terrestrial and aquatic ecosystems; ecologic efficiency of ecosystems; biogeochemical cycles (water, carbon, nitrogen, oxygen, phosphorus, sulfur); fossil fuels: origin, disturbance of carbon cycle, the influence of chlorofluorocarbons on ozone, greenhouse effect, climate change, renewable energy sources; pollution, farm animal waste and their management.

A number of contact hours/semester: 13 hours for lectures and 13 hours for tutorials and laboratory training.

ECTS: 1.

Qualifications of coordinator(s): PhD with teaching, laboratory and/or research experience in Ecology.

Teaching targets: 1) Ecological terminology. 2) Current environmental issues, analysis and solutions. 3) Interactions between farmed animals and environment.

8.2) Cellular and Molecular Biology

Course category: Elective.

Course outline: Lectures: genetic material and gene function, organization sequence of cellular genes, genome analysis techniques, recombinant DNA technology; RNA synthesis; essentials of cell cycle function, extracellular signalling molecule cell-to-cell communication, cell death and renewal, carcinogenesis. Tutorials and laboratory training: safety in cellular and molecular biology laboratories, reagents, devices, separation of organelle, cell components, proteins and genetic material; techniques for protein, genetic material and plasmid isolation, genetic map, digestion of genetic material and plasmids with restriction enzymes, principles of polymerase chain reaction; DNA electrophoresis; cell induction-expression through operon, DNA sequencing; analysis of mitochondrial RNA and DNA markers for animal identification; additional analytical diagnostic methods; protein detection using western blot.

A number of contact hours/semester: 13 hours for lectures and 13 hours for tutorials and laboratory training.

ECTS: 1.

Qualifications of coordinator(s): PhD with teaching, laboratory and/or research experience in Cellular and Molecular Biology.

Teaching targets: 1) Essentials of cell biology , importance of cell structure and function of cells, of subcellular organelles and of basic functional biological macromolecules. 2) Communication between cells. 3) Analytical methods in molecular biology for diagnostic and research purposes.

3rd SEMESTER COURSES

1) Physiology II: Physiology of urinary, endocrine, male and female genital system, placenta, mammary gland, skin, thermoregulation, fluid and acid-base balance and behaviour

Course category: Obligatory.

Course outline: Lectures: urinary system: physiology of kidneys, urine production, hormonal regulation of kidney function, regulation of blood volume and osmotic pressure, micturition reflex. Endocrine system: hormones, hypothalamus, pituitary, thyroid, parathyroid, calcium and phosphorus homeostasis, osteogenesis, osteolysis, and adrenal

glands (medulla and cortex), endocrine pancreas, epiphysis, thymus gland; prostaglandins; adipose tissue and gastrointestinal hormones, stress, biological rhythms. Male genital system: physiology of testicles, scrotum, sperm, epididymis, accessory genital glands, hormones, erection and ejaculation, hypothalamus-pituitary-testicle axis. Female genital system: physiology of ovaries, ovarian follicles, follicular fluid, oocytes, oviducts, uterus, ovulation, spermatozoa transport in the female genital tract, activation and acrosome reaction of spermatozoa, ovum fertilization, corpus luteum, hormones, ovarian cycle, puberty, pregnancy and parturition, photoperiod, pheromones, hypothalamus-pituitary-ovarian axis. Placenta: hormone production, permeability, embryonic fluids. Mammary gland: growth and development, general physiological principles of lactogenesis and lactation, hormonal and other changes during lactation, colostrum, milk. Skin: role, blood flow, vasomotor changes, thermoregulation, production and metabolism of substances, role of cutaneous glands, permeability, hair. Thermoregulation: body temperature, heat balance, role of hypothalamus, thermoreceptors, increase and decrease of heat production and expenditure, hormones, and thermoregulation. Fluid balance: The role of intestinal tract, kidneys, cardiovascular and endocrine system. Acid-base balance: mechanisms, role of potassium ions, homeostasis. Behaviour: physiology of maternal and newborn animal behaviour, primary experience and socialization, social organization, reaction to fear, pain, food intake, oestrus and pregnancy, behaviour and thermoregulation, behaviour relationship between human and animals, the learning, training, influence of nutrition. Tutorials and laboratory training: physiology of urine and urine physicochemical characteristics, experimental partial nephrectomy, induction of arterial hypertension, hormonal regulation of kidney function. Determination of hormone concentration in biological fluids, experimental induction of diabetes mellitus, determination of glucose concentration in blood and the urine. Interactions between nervous, endocrine system and environment, epiphysis, oxidative stress, endogenous antioxidants. Semen collection from small ruminants, semen physiology and physicochemical characteristics, physiology of spermatozoa, examination for chromatin integrity and fertilizing capacity of spermatozoa, karyotype, determination of special acrosomal proteolytic enzyme activity, experimental orchiectomy. Experimental ovariectomy, ovum fertilization, zygote to blastocyst development, pregnancy diagnosis, estrus synchronization, multiple ovulations. Physicochemical characteristics and protein content of colostrum and milk. Thermoregulation ithe s, measurement of body temperature, heat and cold stress. Volume and acid-base imbalances of organic fluids. Behavioral abnormalities. Effect of environmental pollutants on body function, homeostasis.

A number of contact hours/semester: 39 hours for lectures and 78 hours for tutorials and laboratory training.

ECTS: 8.

Qualifications of coordinator(s): PhD with teaching and/or laboratory experience in comparative Veterinary Physiology.

Teaching targets: 1) Basic principles of comparative Veterinary Physiology of urinary, endocrine, male and female genital system, placenta, mammary gland, skin, thermoregulation, fluid and acid-base balance and behavior nervous, relationship with macroscopic and microscopic structures, and with pathophysiological conditions. 2) Recording, evaluation and presentation of the results of Physiology exercises.

2) General Microbiology

Course category: Obligatory.

Course outline: Lectures: introduction to bacteriology: morphology and structure of bacterial cells, nutrition, metabolism, antibacterial molecules, classification, and nomenclature. Introduction to virology: nature and origin of viruses, morphology, structure, functional properties of viral nucleic acids and proteins, chemical composition, effect of physicochemical agents, virus-host cell interactions, emerging viruses. Introduction to mycology: morphology, resistance, distribution, reproduction, and classification. Identification, classification and study of microorganism pathogenicity, description of bacteria, viruses and fungi associated with animal diseases, ecology, properties and pathogenic action. Tutorials and laboratory training: coating and direct microscopic detection of infectious agents; bacterial growth characteristics; techniques for etiological diagnosis of diseases, isolation, culture and identification of bacteria and viruses, detection of viruses using molecular and classical techniques; antibody titration.

A number of contact hours/semester: 26 hours for lectures and 39 hours for tutorials and laboratory training.

ECTS: 6.

Qualifications of coordinator(s): PhD with teaching, laboratory and/or research experience in Veterinary Microbiology.

Teaching targets: 1) Essentials of bacterial, viral and fungal classification, morphology, structure and function. 2) Essentials of laboratory diagnosis of bacterial, viral and fungal diseases.

3) Ichthyology, Aquatic Fauna and Aquaculture

Course category: Obligatory.

Course outline: Lectures: introduction to aquatic environment, water quality parameters. Introduction to ichthyology, general anatomy, morphology and taxonomy of fish and other farmed aquatic species. Skin, fins, skeletal, muscular, respiratory, and nervous systems, sensations and sensory organs in Teleostea and Chondrichthyes, cardiovascular, hematopoietic, excretory system, digestive and endocrine system. Principles of aquaculture, aquaculture system types, construction, operation rules and marketing; production systems of Mediterranean euryhaline species and salmonids; aquaculture of warm water species; tropical and ornamental fish; cage culture and offshore cage culture; aquaculture of bivalves, mollusks shrimps, lobsters and crayfishes. Tutorials, laboratory training and aquaculture farm visits: anatomy of fish species and other farmed aquatic species, allometry, length-weight relationship, condition factor, specific growth rate, gonadosomatic index, Von Bertalanffy equation; estimation of fish age; fish histology; nutritional plan and environmental impact of aquaculture farms and welfare.

A number of contact hours/semester: 26 hours for lectures and 26 hours for tutorials, laboratory training and aquaculture farm visits.

ECTS: 5.

Qualifications of coordinator(s): PhD with teaching, laboratory and/or research experience in Aquatic Sciences and especially in Biology and Culture of Aquatic Species.

Teaching targets: 1) Taxonomy, macroscopic and microscopic anatomy and physiology of most important cultured aquatic species. 2) Essentials of aquaculture of most important cultured aquatic species. 3) Essentials of management of aquaculture farms.

5) Biostatistics

Course category: Obligatory.

Course outline: Lectures: probabilities, Bayes' theorem; random, discrete and continuous variables, measures of central tendency and dispersion, probability distributions; confidence interval; hypothesis testing for a single mean, for two independent and two dependent means; parametric analysis of variance; correlation and simple linear regression; non-parametric alternatives to t-tests and analysis of variance; analysis of contingency tables for independent and dependent discrete variables. Tutorials and laboratory training: use of software for the calculation of statistical parameters and hypothesis testing.

Number of contact hours/semester: 20 hours for lectures and 26 hours for tutorials and laboratory training.

ECTS: 3.

Qualifications of coordinator(s): Veterinarians, PhD with teaching and/or research experience in Biostatistics.

Teaching targets: 1) Definition of a probability and calculation of probabilities based on permutations and combinations. 2) Definition and description of continuous and categorical random variables. 3) Calculation and interpretation of confidence intervals. 4) Parametric hypothesis testing. 5) Linear correlation and regression. 6) Non-parametric hypothesis testing. 7) Analysis of contingency tables.

6) Animal Health Economics

Course category: Obligatory.

Course outline: Lectures: principles of economic theory, introduction to animal health economics; supply and demand of animal products, elasticities and effect of disease; essentials of production theory, productivity and disease; cost of animal production, direct and indirect costs of disease; decision support tools in disease control (partial budgeting, cost-benefit and cost-effectiveness analysis, decision tree analysis); risk analysis and decision support tools in disease control; animal welfare economics. Tutorials and laboratory training: supply and demand of livestock products, cost management and the use of decision support tools.

Number of contact hours/semester: 20 hours for lectures and 26 hours for tutorials and laboratory training.

ECTS: 3.

Qualifications of coordinator(s): Veterinarians, PhD with teaching and/or research experience in Animal Health Economics.

Teaching targets: 1) Principles of economic theory. 2) Specifics of animal production and their influence on production, production costs, supply and demand of products. 3) Decision support tools to prioritize interventions. 4) Decision support tools to select the optimal diagnostic, therapeutic and managerial decision for disease control in companion and farm animals. 5) Importance of animal welfare on the quality and economics of animal production.

4) Technology of Foods of Animal Origin and Relevant Legislation

Course category: Obligatory.

Course outline: Lectures: food preservation methods (refrigeration, freezing, thermal processing, canning, drying, salting, smoking, fermentation, novel technologies) and their influence on the food; operation procedures in slaughterhouses, classification and retail cuts of carcasses; structure and chemical composition of meat; meat changes after slaughter, meat

properties and quality; meat preservation and processing methods and their effects on meat quality; classification of meat products, production technology and preservation; fish preservation methods and special fish-products; food additives and safety; legislation relevant to meat, fish and their products. Tutorials, laboratory training and food industry visits: determination of meat and meat product pH; chemical analysis (protein, ash, humidity, fat and sodium chloride content) and basic microbiologic examination of meat and meat products; classification of carcasses, retail cuts of beef, pork and lamb carcasses; classification of meat products; meat and meat product color evaluation by chronometry; water activity and *w*ater holding capacity; evaluation of thermal processing of canned foods and canned food inspection.

A number of contact hours/semester: 26 hours for lectures and 26 hours for tutorials, laboratory training food industry visits.

ECTS: 4.

Qualifications of coordinator(s): PhD with teaching, laboratory and/or research experience in the Technology of Foods of Animal Origin.

Teaching targets: 1) Food preservation methods. 2) Operation procedures in slaughterhouses. 3) Classification and retail cuts of carcasses. 4) Composition and properties of preservation methods. 5) Main meat products and their production process. 6) Composition and properties of fish and preservation methods. 7) Basic examination and analyses of meat, fish and their products. 8) Legislation relevant to meat, fish and their products.

8) Veterinary Ethics and Legislation

Course category: Obligatory.

Course outline: Professional integrity, good practices, advertisement, relationship with colleagues, professional and public organizations; responsibilities to clients-animal owners and animals; ethics of research and experimentation; professional fees; veterinary legislation in Greece and the European Union, essentials of administrative and European Community law, legal framework considering veterinary profession, rights, obligation, veterinary liability; legislation relevant to animal production; international and national conventions for wildlife protection: European Community directive 1992/43, CITES international agreement, African convention, convention of the word heritage, SPAMI protocol, OSPAR convention and ACCOBAMS agreement; legislation for stray animals, sanitary conditions and legislation for the transportation of companion animals for non-profit purposes.

NumberA number of contact hours/semester: 13 hours for lectures and 13 hours for tutorials.

ECTS: 1.

Qualifications of coordinator(s): Veterinarians, PhD with teaching and/or practical experience in Veterinary Ethics and Legislation.

Teaching targets: 1) Relationships with colleagues, professional and public organizations. 2) Responsibilities to clients-animal owners and animals. 3) Research and experimentation ethics. 4) Calculation of professional fees. 5) Legislation relevant to veterinary profession, rights, obligation, and liability. 6) Legislation for farm animal production, wildlife protection and companion animal transportation.

4ο ΕΞΑΜΗΝΟ

1) Introduction to Animal Medicine

Course category: Obligatory.

Course outline: Lectures: nosology, methods of physical examination of animals; body temperature, hypothermia, hyperthermia, fever; physical examination of dogs, cats, horses, pigs, rabbits, particularities of ruminant physical examination; canine and feline preventive medicine and basic principles of hospitalization; collection and handling of biological samples (blood, urine, lymph node fine needle aspiration); complete blood count, hematocrit, blood cell count and differential white blood cell count abnormalities, morphology and inclusions of red and white blood cells, platelet abnormalities and evaluation of hemostasis; evaluation of renal function, abnormal findings of urinalysis (physical, chemical analysis and sediment examination); evaluation of liver and pancreas, markers of muscle injury, electrolytic disorders. Tutorials, laboratory and clinical training: general physical examination, blood and urine sampling, lymph node fine needle aspiration, complete blood count, evaluation of hemostasis, urinalysis, blood biochemistry.

Number of contact hours/semester: 26 hours for lectures and 52 hours for tutorials, laboratory and clinical training.

ECTS: 7.

Qualifications of coordinator(s): Veterinarians, PhD with teaching, laboratory, clinical and/or research experience in Animal Propedeutics and Clinical Pathology.

Teaching targets: 1) Physical examination of animals. 2) Temperature measurement, diagnosis of abnormalities and symptomatic treatment. 3) Collection of the most important biological samples. 4) Evaluation and interpretation of complete blood count, hemostasis testing, urinalysis and blood biochemistry.

2) Diagnostic Microbiology

Course category: Obligatory.

Course outline: Lectures: correlation between infectious diseases and their etiological agents; laboratory diagnosis using serological and molecular techniques; bacterial and viral cultures; novel technologies: microarrays and techniques using magnetic beads. Tutorials and laboratory training: sampling and processing of samples for laboratory diagnosis of infectious diseases; molecular techniques: genetic material extraction, polymerase chain reaction (PCR), real-time PCR; serological techniques.

Number of contact hours/semester: 26 hours for lectures and 39 hours for tutorials and laboratory training.

ECTS: 5.

Qualifications of coordinator(s): PhD with teaching, laboratory and/or research experience in Veterinary Diagnostic Microbiology.

Teaching targets: 1) Essentials of etiological diagnosis of infectious diseases. 2) Traditional, current, and novel techniques for the diagnosis of bacterial, viral and fungal diseases.

3) Immunology

Course category: Obligatory.

Course outline: Lectures: innate and adaptive immunity; nature and properties of antigens and antibodies, antibody production, primary and secondary (memory) immune reactions, factors affecting antibody production; B- and T-lymphocytes; complement; histocompatibility complexes; regulatory proteins of immunological reactions; hypersensitivity and autoimmunity; vaccinology principles. Tutorials and laboratory training: immunological techniques (isolation of lymphocyte subpopulations, enzyme-linked immunosorbent assay, indirect immunofluorescence, Western blotting, virus neutralization testing, hemagglutination inhibition). Techniques to differentiate infected from vaccinated animals and strategies for eradication of infectious diseases using these tests.

Number of contact hours/semester: 20 hours for lectures and 39 hours for tutorials and laboratory training.

ECTS: 4.

Qualifications of coordinator(s): PhD with teaching, laboratory and/or research experience in Immunology.

Teaching targets: 1) Essentials of immune system function. 2) Innate and acquired, humoral and cell-mediated immunity. 3) Essentials of hypersensitivity and autoimmunity mechanisms. 4) Vaccination immunology.

4) Parasitology and Parasitic Diseases I: Parasitology and parasitic diseases of animals due to protozoa and arthropods and relevant legislation

Course category: Obligatory.

Course outline: Lectures: general principles of Veterinary Parasitology, nomenclature and classification of parasites; morphology, structure, function, reproduction and classification of protozoa; Sarcomastigophora (genera *Histomonas, Trichomonas, Tetratrichomonas, Giardia, Hexamita, Leismania* and *Trypamosoma*), Sporozoa (genera *Eimeria, Isospora, Cryptosporidium, Sarcocystis, Toxoplasma, Neospora, Hepatozoon, Babesia, Theileria* and *Plasmodium*), remaining classes (Ciliophora, Microspora, unidentified organisms and Richettsiae-like organisms); morphology, structure, function, life cycle and classification of arthropods, Crustacea, Myriapoda, Pentastomida, Arachnida (Scorpionida, Aranaida and Acarina), Insecta (Diptera, Pthiriaptera, Siphonaptera, Hemiptra, Coleoptera, Orthoptera, Hymenoptera, Ephemeroptera, Lepidoptera and Trichoptera); route of infection, pathogenesis, host defense mechanisms, lesions, clinical signs, diagnosis, treatment, prevention, public health relationship and legislation relevant to animal parasitoses caused by protozoan and arthropod parasites. Tutorials and laboratory training: collection, preservation, sample dispatch, parasitological examination of feces (simple, qualitative and quantitative after flotation and sedimentation, for nematode helminth larvae), blood, urine, skin and tissues; indirect diagnostic methods; polymerase chain reaction.

Number of contact hours/semester: 20 hours for lectures and 26 hours for tutorials and laboratory training.

ECTS: 4.

Qualifications of coordinator(s): PhD with teaching, laboratory and/or research experience in Parasitology and Parasitic Diseases of Animals.

Teaching targets: 1) Clinical signs, diagnosis, treatment, prevention, public health relationship and legislation relevant to animal parasitoses caused by protozoa and arthropods. 2) Laboratory examinations for the diagnoses and animal parasitoses.

5) Pharmacology

Course category: Obligatory.

Course outline: Lectures: drug formulation, drug absorption, distribution, metabolism and excretion, pharmacodynamics, adverse drug reactions and drug interactions; mechanisms of drug action, development of new drugs; pharmacology of autonomic and central nervous system, gastrointestinal drugs, analgesics, non-steroidal anti-inflammatory drugs, glucocorticosteroids, antihistamines, drug of hemopoetic, cardiovascular, respiratory and urinary system, topical ocular drugs, drugs acting on the ears and skin, hormones; pharmacology of reproductive system, growth promoters, trace elements, vitamins, electrolyte solutions, local anesthetics, cancer chemotherapy, immunomodulatory therapy, antibacterial chemotherapy (penicillins, cephalosporins, cephamycins, aminoglycosides, macrolides, lincosamides, quinolones, tetracyclines, sulfonamides), anthelmintics, coccidiocides, ectoparasiticides, antifungals, antivirals, vaccines, antiseptics, disinfectants, drugs used in euthanasia. Tutorials and laboratory training: drug metabolism and pharmacokinetics, drug action on isolated organs, central nervous system acting drugs, *in vitro* activity of antibacterials and drug resistance

Number of contact hours/semester: 39 hours for lectures and 39 hours for tutorials and laboratory training.

ECTS: 5.

Qualifications of coordinator(s): PhD, with teaching, laboratory and/or research experience in Pharmacology.

Teaching targets: 1) Pharmacokinetics and pharmacodynamics. 2) Drugs used in veterinary medicine: route of administration, mechanism of action, indications, contraindications and drug combinations.

6) General Pathology

Course category: Obligatory.

Course outline: Lectures: cell pathology (degeneration, apoptosis, necrosis, accumulation of various substances) and pathology of the intercellular tissue; changes of the circulation, essentials of immunopathology, inflammation and resolution, lesions in pathologic conditions caused by microorganisms and non-biological factors, disturbances of cellular growth and neoplasia. Tutorials and laboratory training: microscopy of cell and tissue morphological changes due to harmful factors.

Number of contact hours/semester: 26 hours for lectures and 26 hours for tutorials and laboratory training.

ECTS: 4.

Qualifications of coordinator(s): Veterinarians, PhD, with teaching, laboratory and/or research experience in Veterinary Pathology.

Teaching targets: 1) Inflammatory pathological changes of cells and tissues. 2) Neoplastic pathological changes of cells and tissues.

7) Elective courses

Every student will attend one of the three elective courses and the maximum number of students that can attend each of them corresponds to the 40% of the registered students attending the 4th semester.

7.1) Bee products

Course category: Elective.

Course outline: Honey, royal jelly, wax, poisonous product, propolis, pollination, equipment, honey quality, standardization, packaging and commerce.

Number of contact hours/semester: 13 hours for lectures and 13 hours for tutorials and laboratory training.

ECTS: 1.

Qualifications of coordinator(s): Veterinarians, PhD with teaching and/or laboratory experience in bee production.

Teaching targets: 1) Production methods and marketing of bee products.

7.2) Molecular Microbiology and Parasitology

Course category: Elective.

Course outline: Lectures: evolution of microbes, host-pathogen interactions, requirements for infection and transmission, control of microbial growth; viruses: genome analysis, relationship between viral genetic sequences and their structure and function, viral evolution and pathogenesis, antiviral drugs (targets, resistance); bacteria: pathogenesis of bacterial diseases, host immune responses; parasites: diagnostic parasitology, host-parasite interactions, anti-parasitic strategies, emerging parasitic diseases; advanced techniques: methodology, use of pathogens and their components for treatment, investigation of outbreaks and surveillance with the aim of molecular tools. Tutorials and laboratory training: conventional and real-time polymerase chain reaction, use of internet platforms for molecular microbiological analysis, analysis of genetic sequences of microorganisms using appropriate software, use of FASTA files for creation of phylogenetic trees.

Number of contact hours/semester: 13 hours for lectures and 13 hours for tutorials and laboratory training.

ECTS: 1.

Qualifications of coordinator(s): Veterinarians, PhD, with teaching, laboratory and/or research experience in Molecular Microbiology and Parasitology.

Teaching targets: 1) Molecular basis of the physiological processes involved in the life cycle of different types of microbes and how these affect animal health. 2) Application of molecular techniques for diagnosis and surveillance of infectious and parasitic diseases.

5o SEMESTER COURSES

1) Fish diseases and health management of aquatic species

Course category: Obligatory.

Course outline: Lectures: introduction to aquatic medicine: terminology, factors leading to diseases, essentials of diagnosis, history, macroscopic findings, euthanasia, necropsy, various examinations; sampling, sample size, methodology of sampling hatcheries, cage sites and processing plants, sample transportation, influence of water quality, immune system, welfare of aquatic animals, principles of good practice management, control and certification of aquatic production products and fish farming according to AGROCERT standards AGRO 4-1, AGRO 4-2 and AGRO 4-3. Medicine: disease classification; bacterial, fungal, viral, rickettsial, chlamydial, nutritional, metabolic, protozoal and parasitic diseases (differential diagnosis and histopathology), diseases of tropical and ornamental species, diseases of malacostraca, bivalves and marine mammals (differential diagnosis and histopathology); notifiable diseases, zoonoses; drug use and residues, alternative treatment methods and green farms; diseases in hatchery stage and in broodstock; prevention, vaccination; quality of aquatic products, relation between pollution and pathogenic organisms in aquatic ecosystems, protection from pollutants, toxicology in aquatic environment, legislation. Tutorials, laboratory training and aquaculture farm visits: necropsy techniques, blood sampling, fixation of pathological samples, bacterial culture, antibiotic susceptibility testing, histopathology, cell culture, polymerase chain reaction, parasitological examinations; examination of bivalves and malacostraca; oral and bath treatment, dose calculation, fish vaccination; clinical case solving.

Number of contact hours/semester: 13 hours for lectures and 52 hours for tutorials, laboratory training and aquaculture farm visits.

ECTS: 5.

Qualifications of coordinator(s): PhD with teaching, laboratory, clinical and/or research experience in Aquatic Medicine.

Teaching targets: 1) Terminology of aquatic diseases. 2) Diagnostic principles and peculiarities in specific aquatic ecosystems. 3) Epidemics and essentials of aquatic epidemiology. 4) Methods of sampling and dispatching pathological material. 5) Differential diagnosis of diseases of aquatic animals. 6) Principles of prevention, treatment strategies and dose calculation. 7) Essentials of toxicology and prevention of pollution. 8) Diagnosis of notifiable diseases and legislation relevant to fish farming, diseases of aquatic organisms and aquaculture products. 9) Clinical case solving.

2) Companion Animal Medicine I: Canine and feline dermatology and behavioral disorders

Course category: Obligatory.

Course outline: Lectures: clinical and laboratory examinations of skin diseases; pruritic skin diseases, skin diseases with alopecia-hypotrichosis, keratinization abnormalities, skin diseases with macules, papules or pustules, with draining tracts, with erosions and ulcers, with wheals or masses in dogs and cats; otitis externa in dogs and cats. Behavioral disorders of dogs and cats: classification, general therapeutic approach, aggression in dogs and cats, destructive behavior in dogs, feline inappropriate elimination and canine psychodermatoses. Clinical training: clinical training in companion animal medicine.

Number of contact hours/semester: 26 hours for lectures and 24 hours for clinical training.

ECTS: 4.

Qualifications of coordinator(s): Veterinarians, PhD, with teaching, clinical and/or research experience in Companion Animal Medicine.

Teaching targets: 1) Essentials of dermatologic examination. 2) Etiology, diagnosis and treatment of common canine and feline pruritic skin diseases, skin diseases with alopecia-hypotrichosis, keratinization disorders, skin diseases with macules, papules, pustules, draining tracts, wheals and masses. 3) Essentials of the most common canine and feline skin diseases with erosions and ulcers. 4) Etiology, diagnosis and medical treatment of canine and feline otitis externa. 5) Etiologic and clinical classification of canine and feline behavioral disorders and general principles of their management. 6) Diagnostic and therapeutic approach of the most common canine and feline behavioral diseases: aggression, destructive behavior, house soiling, acral lick dermatitis.

3) Production Animal Medicine I: Introduction to the productof ion animal medicine and preventive medicine

Course category: Obligatory.

Course outline: Lectures: methodology of equine, bovine, sheep, goat, pig and rabbit examination and clinical approach in flock-herd level; differential diagnosis of common clinical signs of production animals; sampling for laboratory examinations; clinical pharmacology, essentials of production animal hospitalization, equine, bovine, sheep, goat and pig vaccination and antiparasitic protocols; risk factors for pig diseases. Clinical training: physical examination, subcutaneous, intramuscular and intravenous injections, blood sampling and esophageal tubing in production A numbers.

Number of contact hours/semester: 26 hours for lectures and 16 hours for clinical training.

ECTS: 4.

Qualifications of coordinator(s): Veterinarians, PhD, with teaching, clinical and/or research experience in Production Animal Medicine.

Teaching targets: 1) Essentials of production animal individual clinical examination and examination at the farm level. 2) Differential diagnosis based on the most common clinical signs. 3) Herd health program, clinical therapeutics and preventing medicine of production animals.

4) Parasitology and Parasitic Diseases II: Parasitology and parasitic diseases of animals due to helminths and relevant legislation

Course category: Obligatory.

Course outline: Lectures: morphology, structure, function, life cycle and classification of trematodes, cestodes, nematodes, Acanthocephala and Annelida; route of infection, pathogenesis, host defence mechanisms, lesions, clinical signs, diagnosis, treatment, prevention, public health relationship and legislation relevant to animal parasitoses caused by helminths. Tutorials and laboratory training: general morphological characteristics, recognition and identification of reproductive elements of animal parasites.

A number of contact hours/semester: 20 hours for lectures and 26 hours for tutorials and laboratory training.

ECTS: 4.

Qualifications of coordinator(s): Veterinarians, PhD with teaching, laboratory and/or research experience in Parasitology and Parasitic Diseases of Animals.

Teaching targets: 1) Clinical signs, diagnosis, treatment, prevention, public health relationship and legislation relevant to animal parasitoses caused by helminths. 2)

Recognition and identification of adult parasites of animals and of their reproductive elements.

5) Infectious Diseases and relevant Legislation I: Infectious diseases of the respiratory and reproductive system of animals

Course category: Obligatory.

Course outline: Lectures: bacterial, viral and fungal diseases of the respiratory and reproductive system of animals: etiology, pathogenesis, epidemiology, laboratory diagnosis, prevention, treatment, public health relationship and relevant legislation. Tutorials, laboratory training and visits of farms with infectious diseases): clinical manifestations of infectious diseases of the respiratory and reproductive system of animals; novel technologies (geographical information systems, multiplex diagnostic techniques).

A number of contact hours/semester: 20 hours for lectures and 26 hours for tutorials, laboratory training and farm visits.

ECTS: 4.

Qualifications of coordinator(s): Veterinarians, PhD with teaching, laboratory and/or research experience in Infectious Diseases of Animals.

Teaching targets: 1) Laboratory diagnosis, treatment, prevention, public health relationship and legislation relevant to infectious diseases of the respiratory and reproductive system of animals.

6) Obstetrics and Reproduction I: Female mammal reproduction physiology, mammary gland physiology, neonatal physiology and care

Course category: Obligatory.

Course outline: Female mammal reproduction physiology: reproductive cycle, reproduction physiology, reproduction physiology of cow, ewe, goat, gilt, mare, bitch, queen, male rabbit, female laboratory and exotic animals; puberty, reproduction physiology before pregnancy, fertilization, pregnancy physiology and diagnosis, fetal physiology, physiology of parturition and the post-partum period, regulation of reproduction; physiology of mammary gland and milk production; newborn physiology and number **of contact hours/semester**: 26 hours for lectures.

ECTS: 3.

Qualifications of coordinator(s): Veterinarians, PhD with teaching, clinical and/or research experience in Animal Obstetrics and Reproduction.

Teaching targets: 1) Reproduction physiology of female mammals. 2) Mammary gland physiology. 3) Fetal and neonatal physiology.

7) Organ-specific Pathology

Course category: Obligatory.

Course outline: Lectures: description of lesions caused by diseases and syndromes in respiratory, gastrointestinal, cardiovascular, urinary, genital systems, mammary glands, skin, bones, muscles, endocrine glands, nervous system and sensory organs with emphasis on the macroscopic lesions. Tutorials, laboratory and clinical training: macroscopic and histologic lesions of various animal organs.

A number of contact hours/semester: 26 hours for lectures and 26 hours for tutorials, laboratory and clinical training.

ECTS: 4.

Qualifications of coordinator(s): Veterinarians, PhD, with teaching, laboratory and/or research experience in Veterinary Pathology.

Teaching targets: 1) Description of the lesions of various organs and body systems of animals with emphasis on the macroscopic lesions.

8) Toxicology

Course category: Obligatory.

Course outline: Lectures: classification and origin of toxicants, mechanisms of toxicity, risk assessment; absorption, distribution and excretion of toxicants, biotransformation of xenobiotics; principles of therapy and detoxification; chemical carcinogenesis, mutagenesis and teratogenesis; organ-specific (liver, kidney, lungs, cardiovascular, nervous, reproductive, hematopoietic, immune, endocrine, skin and ocular) toxicities; toxic effects of insecticides, pesticides, mycotoxins, dioxins, heavy metals and plants.

Tutorials and laboratory training: Biotransformation of xenobiotics, organ-specific toxicities, detection of toxic substances, student essays.

A number of contact hours/semester: 13 hours for lectures and 13 hours for tutorials and laboratory training.

ECTS: 1.

Qualifications of coordinator(s): PhD with teaching, laboratory and/or research experience in Toxicology.

Teaching targets: 1) Toxic substances, mechanism of action and clinical signs. 2) Treatment of toxicoses. 3) Methods to prevent the presence of toxic substances in foods of animal origin

9) Elective courses

Every student will attend one of the two elective courses and the maximum number of students that can attend each of them corresponds to 70% of the registered students attending the 5th semester.

9.1) Introduction to Intensive Care

Course category: Elective

Course outline: *Lectures*: Introduction to acid-base balance and the blood gas analysis. Electrolyte disorders and their treatment. Initial management of the multi-injured patients anesthesia and analgesia in emergencies, gastric dilatation volvulus, status epilepticus, cranioencephalic injuries. Cardiopulmonary resuscitation.

A number of contact hours/semester: 13 hours for lectures and 13 hours for tutorials and laboratory training.

ECTS: 1.

Qualifications of coordinator(s): Veterinarians, PhD with teaching, laboratory and/or research experience in Intensive Care.

9.2) Clinical Laboratory Diagnosis

Course category: Elective.

Course outline: Lectures: total quality management in the veterinary diagnostic laboratory; laboratory classification of anaemia, evaluation of hemostasis, blood typing and cross-matching; complete blood count and common biochemical examinations in small mammals, reptiles and avian species; analysis of effusions, bronchoalveolar lavage, synovial fluid, conjunctival scrapings; acute phase proteins and dysproteinemias. Tutorials and laboratory training: preparation and implementation of standard operating procedures, quality control and quality assurance of the veterinary diagnostic laboratory; reticulocyte count, myelogram evaluation, measurement of prothrombin, activated partial thromboplastin time and antithrombin; blood typing and cross-matching; analysis of effusions, bronchoalveolar lavage, synovial fluid and examination of conjunctival scraping; complete blood count and common biochemical examinations in small mammals, reptiles and avian species.

A number of contact hours/semester: 13 hours for lectures and 13 hours for tutorials and laboratory training.

ECTS: 1.

Qualifications of coordinator(s): Veterinarians, PhD with teaching, laboratory and/or research experience in Clinical Laboratory Diagnosis.

Teaching targets: 1) Essentials of total quality management in the diagnostic laboratory. 2) Interpretation of laboratory test results in animals with anemia and hemostatic abnormalities. 3) Blood typing and cross-matching. 4) Performance and interpretation of the results of complete blood count and common biochemical parameters in small mammals, reptiles and birds. 5) Performance and interpretation of the results of effusion analysis, bronchoalveolar lavage, synovial fluid analysis and conjunctival scraping. 6) Interpretation of protein gram and acute phase proteins.

9.3) Husbandry/pathology of important aquatic organisms (except fishes)

Course category: Elective.

Course outline: *Lectures*: Breeding and pathology of Gastropoda. Breeding of marine Decapoda Pathology of decapoda. Breeding and pathology of Echinacea, Trochophores, and Anostraca. Breeding and pathology of bivalvia. Breeding and pathology of cephalopoda. Breeding and pathology of cnidaria. Pathology of amphibians. Pathology of pinnipedia. Pathology of cetacea.

Number of contact hours/semester: 13 hours for lectures and 13 hours for tutorials and laboratory training.

ECTS: 1.

Qualifications of coordinator(s): Veterinarians, PhD with teaching, laboratory and/or research experience in Ichthypathology

9.4) Comparative Pathology and Animal Models of Human Diseases

Course category: Elective.

Course outline: *Lectures*: Principles of comparative pathology. Aetiology, similarities in pathogenetic mechanisms - anatomopathological lesions and comparative immunopathology during the evolution of human and animal diseases. Their importance in the context of Single Health. The use of laboratory animals in biomedical research: bioethics, ethics and contemporary legislation of the experiments with animal species. Types of animal models for human diseases – selection criteria of the suitable animal model. Comparative pathology of nutritional/metabolic diseases and animal models. Comparative pathology of toxicosis. Principles of toxicologic anatomic pathology. Comparative pathology of tumours and animal models for the study of carcinogenesis. Comparative pathology of diseases due to prion

(spongiform encephalopathies). Comparative pathology of neurodegenerative diseases. Animal models for the study of mental health disorders.

A numberr of contact hours/semester: 13 hours for lectures and 13 hours for tutorials and laboratory training.

ECTS: 1.

Qualifications of coordinator(s): Veterinarians, PhD with teaching, laboratory and/or research experience in Pathology.

9.5 Zoonoses through a single health approach

Course category: Elective**.**

Course outline: *Lectures*: Diseases with particular importance, which are transmitted between humans and animals. A etiology, Epidemiology, Pathogenesis, Clinical picture, Diagnosis, Treatment and Prevention both in involved animals and in humans. Suggestive diseases: Brucellosis, Contagious Ecthyma, Dermatophytosis, Tuberculosis, West Nile virus, Hepatitis E, Influenza, Q fever, Cat Scratch Disease, Lyme disease e.t.c.

Number of contact hours/semester: 13 hours for lectures and 13 hours for tutorials and laboratory training.

ECTS: 1.

Qualifications of coordinator(s): Veterinarians, PhD with teaching, laboratory and/or research experience**.**

1) Principles of Animal Surgery and animal Ophthalmology

Course category: Obligatory.

Course outline: Surgical asepsis (essentials, active ingredients, techniques of sterilization and disinfection of operative suite, instruments, surgical team and surgical field); surgical facilities and equipment; suturing (equipment, techniques) and hemostasis; wound healing, essentials of skin surgery, skin wounds, bandages, plastic and reconstructive surgery; laparotomy in companion animals, horses and farm animals; ocular pharmacology and examination, non-surgical treatment principles, essentials of ocular surgery and common surgical procedures, diseases of eyelids, conjunctiva, third eyelid, lacrimal system, cornea, sclera, uvea, lens, vitreous, ocular fundus, orbit and globe, glaucoma.

Number of contact hours/semester: 39 hours for lectures and 13 hour for clinical training.

ECTS: 5.

Qualifications of coordinator(s): Veterinarians, PhD with teaching, clinical and/or research experience in Animal Surgery and Ophthalmology.

Teaching targets: 1) Essentials of animal surgery. 2) Essentials and techniques of skin surgery, wound management, plastic and reconstructive surgery. 3) Essentials and technique of laparotomy. 4) Etiology, diagnosis, medical and surgical treatment of ocular diseases of companion animals and of the most common ocular diseases of farm animals.

2) Obstetrics and Reproduction II: Obstetrics and reproduction medicine of cow, ewe, goat and gilt, farm reproduction management and prevention

Course category: Obligatory.

Course outline: Diseases and pathologic conditions of cow, ewe, goat and gilt genital system and conditions that reduce fertility or interfere with pregnancy of obstetric, microbial, parasitic, nutritional, metabolic, traumatic and managemental cause and which appear before, during and after pregnancy: etiology, financial consequences, pathophysiology, clinical signs, diagnosis, prevention, control, conservative and surgical treatment and public health significance.

Number of contact hours/semester: 39 hours for lectures.

ECTS: 4.

Qualifications of coordinator(s): Veterinarians, PhD with teaching, clinical and/or research experience in Animal Obstetrics and Reproduction.

Teaching targets: 1) Obstetrics and reproduction medicine of cow, ewe, goat and gilt.

3) Hygiene and Technology of Milk and Dairy Products and Relevant Legislation

Course category: Obligatory.

Course outline: Lectures: chemical composition of bovine, caprine and ovine milk; microbiology of raw milk, pathogens, spoilage, hygiene of raw milk production, transportation and storage; heat treatment (pasteurization, sterilization), evaporated, condensed and dried milk; fermented dairy products, cream, butter, ice cream; cheese types, cheese production, Greek protected designation of origin (P.D.O.) cheeses; microbiological and quality control of dairy products according to the *relevant legislation* and public health importance; cleaning and sanitation operations of equipment in dairy plants. Tutorials, laboratory training and dairy plant visits: measurement of milk pH, acidity and specific gravity; fat content of milk, cream, butter and cheese; analysis of moisture and total solids of milk; examination for milk adulteration; phosphatase test for evaluation of milk

pasteurization; measurement of cheese salt content; microbiological analysis of milk and dairy products; yoghurt manufacture.

Number of contact hours/semester: 22 hours for lectures and 26 hours for tutorials, laboratory training and dairy plant visits.

ECTS: 4.

Qualifications of coordinator(s): PhD with teaching, laboratory and/or research experience in Hygiene and Technology of Milk and Dairy Products.

Teaching targets: 1) Composition and physicochemical properties of milk. 2) Milk microbiology and factors affecting milk hygiene and safety. 3) Thermal treatment of milk. 4) Main dairy products, stages of manufacture and influence on their organoleptic properties, hygiene, and safety. 5) Manufacturing technologies of P.D.O. cheeses. 6) Analysis of milk and dairy products according to the relevant legislation.

5) Veterinary Epidemiology

Course category: Obligatory.

Course outline: Lectures: sampling methods, minimum sample size calculation; measures of disease frequency, diagnostic test characteristics at the animal and herd level, diagnostic accuracy of continuous tests, predictive values, likelihood ratios, estimation of true prevalence; types of epidemiologic studies; measures of association, measures of effect; selection and information bias, confounding and interaction in epidemiologic studies. Tutorials and laboratory training: use of software for sample size calculation (WINEPISCOPE, FREECALC), estimation of diagnostic test characteristics (FREECALC, HERDACC), confounding and interaction (EPIINFO).

Number of contact hours/semester: 26 hours for lectures and 26 hours for tutorials and laboratory training.

ECTS: 4.

Qualifications of coordinator(s): Veterinarians, PhD with teaching and/or research experience in Veterinary Epidemiology.

Teaching targets: 1) Selection of the optimal sampling method and minimum sample size calculation. 2) Measures of disease frequency. 3) Diagnostic accuracy of tests at the animal and herd level and their calculation. 4) Types of epidemiologic studies and their suitability for different disease settings. 5) Measures of association and effect and their calculation. 6) Types of bias and methods to avoid or control them.

6) Companion Animal Medicine II: Canine and feline cardiology, bone and joint diseases, endocrinology, hematology, and oncology

Course category: Obligatory.

Course outline: Lectures: cardiovascular physical examination and electrocardiography in dogs and cats, pathophysiology and management of heart failure, diagnosis and management of common arrhythmias, canine degenerative valve disease, infective endocarditis and dilated cardiomyopathy, feline cardiomyopathies, canine pericardial effusion and pulmonary hypertension, canine and feline arterial and pulmonary hypertension, thromboembolism and congenital heart diseases; canine and feline nutritional osteodystrophies; diagnostic approach of joint diseases; inflammatory polyarthritis in dogs and cats; clinical findings, diagnosis and treatment of the most common canine and feline endocrine diseases (hypothyroidism, hyperthyroidism, hyperadrenocorticism, hypoadrenocorticism, diabetes mellitus, hormonal alopecia, obesity); diagnostic approach of anemia in dogs and cats, regenerative (hemorrhagic, hemolytic), semi-regenerative (iron deficiency) and non-regenerative (of chronic disease, of bone marrow origin) anemia, treatment, blood transfusion, thrombocytopenia, thrombocytopathies, von Willebrand disease, congenital deficiencies of clotting factors, hypovitaminosis K, disseminated intravascular coagulation and splenomegaly; canine and feline leukemia and lymphoma, diagnostic approach to solid tumors, essentials and side effects of anti-cancer chemotherapy. Clinical training: clinical training in companion animal medicine.

Number of contact hours/semester: 26 hours for lectures and 24 hours for clinical training.

ECTS: 4.

Qualifications of coordinator(s): Veterinarians, PhD, with teaching, clinical and/or research experience in Companion Animal Medicine.

Teaching targets: 1) Essentials of cardiovascular examination in dogs and cats, etiology, pathophysiology and treatment of congestive heart failure, etiology, diagnosis and treatment of the most common arrhythmias in dogs and cats, of canine degenerative valve disease and infective endocarditis, of the most common cardiomyopathies of dogs and cats, of canine pericardial effusion, clinical manifestations and treatment of canine heartworm disease, etiology, diagnosis and treatment of the most common vascular disorders and congenital heart anomalies of dogs and cats. 2) Etiology, diagnosis and treatment of canine and feline nutritional osteodystrophies, overview of canine and feline infectious and non-infectious inflammatory joint diseases. 3) Clinical signs, diagnosis, and medical treatment of hypothyroidism in dogs, hyperthyroidism in cats, hyperadrenocorticism in dogs, hypoadrenocorticism in dogs and cats, diabetes mellitus in dogs and cats, hormonal alopecia in dogs and obesity in dogs and cats. 4) Essentials of clinical and clinicopathological investigation anemia in dogs and cats, etiology, diagnosis and treatment of common

regenerative, non-regenerative anemia and iron deficiency anemia, essentials of transfusion medicine, etiology, diagnosis and treatment of primary and secondary hemostatic disorders, disseminated intravascular coagulation syndrome and diagnostic investigation of splenomegaly. 5) Diagnostic approach and treatment of leukemia and lymphomas in dogs and cats, diagnostic approach to dogs and cats with solid tumors and essentials of anti-cancer chemotherapy.

7) Production Animal Medicine II: Medicine of the digestive system of production animals

Course category: Obligatory.

Course outline: Lectures: bottle jaw and broken mouth of sheep and goats, actinobacillosis and actinomycosis of ruminants, mouth abrasions of sheep, vesicular diseases of ruminants, choke of horses, traumatic reticuloperitonitis of cattle, digestive acidosis of ruminants, abomasal displacement of cattle, colic of equines, gastric ulcers, vomiting and rectal prolapse of pigs, constipative *mucoid enteropathy* of rabbits, diarrhoea of equine, bovine, sheep, goat, pig and rabbit young and adults, clostridial diseases of production animals. Clinical training: clinical cases at animal and herd level, diagnostic approach and hospitalization of production animals, farm visits, student essays.

Number of contact hours/semester: 26 hours for lectures and 16 hours for clinical training.

ECTS: 4.

Qualifications of coordinator(s): Veterinarians, PhD, with teaching, clinical and/or research experience in Production Animal Medicine.

Teaching targets: 1) Etiolopathogenesis, clinical signs, diagnosis, and treatment of digestive system diseases of production animals. 2) Prevention of digestive system diseases of production animals.

8) Infectious Diseases and relevant Legislation II: Infectious diseases of the nervous, gastrointestinal, urinary, hemopoietic and circulatory system, of the skin and of the joints of animals

Course category: Obligatory.

Course outline: Lectures: bacterial, viral and fungal diseases of nervous, gastrointestinal, urinary, hemopoietic and circulatory system, of the skin and of the joints of animals: etiology, pathogenesis, epidemiology, laboratory diagnosis, prevention, treatment, public health relationship and relevant legislation. Tutorials, laboratory training and visits of farms with infectious diseases): clinical manifestations of infectious diseases of respiratory and

reproductive system of animals; novel technologies (geographical information systems, multiplex diagnostic techniques).

Number of contact hours/semester: 20 hours for lectures and 26 hours for tutorials, laboratory training and farm visits.

ECTS: 3.

Qualifications of coordinator(s): Veterinarians, PhD with teaching, laboratory and/or research experience in Infectious Diseases of Animals.

Teaching targets: 1) Laboratory diagnosis, treatment, prevention, public health relationship and legislation relevant to infectious diseases of animals (except than those of the respiratory and reproductive system).

9) Summer practical training

Course category: Obligatory.

Course outline: Practical training: practical training in farm or companion animal private veterinary practices or in states veterinary practices or in animal product or animal feed plants or in farms or in veterinary laboratories.

Number of contact hours/semester: 240 hours for practical training.

ECTS: 1.

Qualifications of coordinator(s): Veterinarians.

Teaching targets: 1) Practical training depending on the unit of training.

10) Elective courses

Every student will attend one of the two elective courses and the maximum number of students that can attend each of them corresponds to the 70% of the registered students attending the 5th semester.

10.1) Wildlife Diseases

Course category: Elective.

Course outline: Pathogens of wildlife, hosts, vectors and ecology of the most important wildlife species that participate in disease transmission cycle; sampling techniques; zoonoses, including emerging diseases in which wildlife plays an important epidemiological role; livestock and companion animal diseases involving wildlife; control of wildlife diseases through management of disease agents, hosts and vectors and application of novel technologies (geographical information systems, multiplex diagnostic techniques).

Number of contact hours/semester: 13 hours for lectures and 13 hours for tutorials and laboratory training.

ECTS: 1.

Qualifications of coordinator(s): PhD, with teaching, laboratory and/or research experience in Wildlife Diseases.

Teaching targets: 1) Wildlife disease-causing agents. 2) Ecology of the most important wildlife species that participate in the cycle of transmissible diseases. 3) Sampling techniques for wildlife species. 4) Impact of wildlife diseases in public health, disease transmission to livestock and companion animals, ecological and financial consequences. 5) Wildlife disease surveillance at national and international level. 6) Emerging infectious diseases of wildlife. 7) Critical evaluation of mechanisms and management approaches (including novel technologies) for wildlife diseases.

10.2) Principles of function and use of anesthesiologic equipment

Course category: Elective.

Course outline: *Lectures*: Preparation of injectable anesthetic and pro-anesthetic substances, machines and their delivery techniques. Structure and function of anesthetic machines (anesthetic breathing system, ventilators of inhaled anesthetic agents and supplementary component). Structure and function of respiration assistance equipment. Principles of positive lung ventilation. Structure and function of monitoring devices of vital functions, interpretation of their findings. Principles of neuromuscular blockade. Principles of peri-anesthetic haemodynamic support.

Clinical training: Practice in patients of out - patient services, in operating rooms, in the intensive care unit and in the recovery unit of the Clinic of Surgery.

Number of contact hours/semester: 13 hours for lectures and 13 hours for tutorials, laboratory training .

ECTS: 1.

Qualifications of coordinator(s): Veterinarians, PhD with teaching, laboratory and/or clinical experience in Anesthesiology.

10.3) General Histopathology of Animal Organisms

Course category: Elective.

Course outline: *Lectures*: Introduction to the importance of histopathology in the diagnosis of animal diseases. The contribution of histopathology in the study of pathogenesis and in association with the macroscopic pathology in animal diseases. Analysis exclusively on

microscopic level (light microscopy) of the lesions - pathological processes (type, classification) in various animal species. Histopathological lesions in diseases of immunological nature. Analysis of histopathologic lesions in animal organs which caused from microorganism (viruses, bacteria, fungi, protozoan and metazoan parasites). Analysis of histopathological lesions of the animal organs which caused from non-biological factors (heat, radiation, chemical substances, mechanical factors).

Laboratory training: Application of basic techniques of histopathology and special histochemical stains. The correct use of optical microscopy for histopathological diagnosis. Principles of microscopical observation of histopathologic preparations. Histopathological study and discussion of selected representative preparations from various species of domestic and wild animals.

Number of contact hours/semester: 13 hours for lectures and 13 hours for laboratory training.

ECTS: 1.

Qualifications of coordinator(s): Veterinarians, PhD with teaching, laboratory and/or research experience in Veterinary Pathology.

10.4) **Interpretation of results of clinical examination in companion animals**

Course category: Elective.

Course outline: *Lectures*: Prioritization of pathological and non-pathological findings of complete blood count, biochemical tests and urine analysis in diseased companion animals depending on their importance. Their correlation with medical history and the findings of clinical exam and their combined interpretation.

Clinical training: Practical application of prioritization and interpretation of the findings of complete blood count, biochemical tests and urine analysis through the use of records of clinical and laboratory exams of patients which are presented in the Clinic of Medicine.

Number of contact hours/semester: 13 hours for lectures and 13 hours for laboratory training.

ECTS: 1.

Qualifications of coordinator(s): Veterinarians, PhD with teaching, laboratory and/or clinical experience in Companion Animal Medicine

7th SEMESTER COURSES

1) Hygiene of Foods of Animal Origin I

Course category: Obligatory.

Course outline: Lectures: examination and analysis of food chain information; compliance with relevant legislation on animal welfare during transportation and slaughtering; influence of farm conditions, transportation and rest before slaughter on meat quality; slaughtering procedure (stunning, bleeding, hide removal, evisceration, cutting); evaluation and certification of carcasses; general pathologic conditions and carcass lesions due to bacteria, viruses, parasites and protozoa and actions of the official veterinarian; differentiation of animal carcasses; veterinary examination of rabbit and game carcasses; poultry slaughterhouses (slaughtering procedure, veterinary examination of carcasses); occupational zoonotic diseases, personnel safety and handling of risk materials and animal by-products. Tutorials, laboratory and slaughterhouse training: examination and analysis of food chain information; examination of animals before slaughtering; inspection of slaughtering process; hygienic examination of carcasses; hygiene examination of lymph nodes, head, heart, lungs, liver, kidneys and remaining internal organs of carcasses; carcass cuts for hygiene examination; hygiene examination of eggs, meat products and canned foods.

Number of contact hours/semester: 39 hours for lectures and 39 hours for tutorials, laboratory training and slaughterhouse visits.

ECTS: 4.

Qualifications of coordinator(s): Veterinarians, PhD with teaching, laboratory and/or research experience in Hygiene of Foods of Animal Origin.

Teaching targets: 1) Examination and analysis of food chain information. 2) Legislation on animal welfare during transportation and slaughtering process. 3) Veterinary health examination of animals before slaughtering. 4) Slaughtering process. 5) General pathologic conditions during carcass inspection and actions of the official veterinarian. 6) Carcass lesions due to bacteria, viruses, parasites and protozoa and actions of the official veterinarian. 7) Carcass inspection. 8) Hygienic evaluation of rabbit and game carcasses. 9) Procedure of poultry slaughtering and hygienic evaluation of poultry carcasses. 10) Occupational zoonotic diseases and their prevention. 11) Handling of risk materials and animal by-products.

2) Veterinary Anesthesia and Intensive Care

Course category: Obligatory.

Course outline: Restrain of animals (general principles, restrain of equines, bovine, small ruminants, porcine, dogs, cats, small mammals, birds, reptiles, amphibians, fishes and invertebrates); essentials of veterinary anesthesia; local anesthesia (general principles, topical anesthetics, side-effects, techniques), injectable and inhalation anesthetics and administration equipment, preoperative assessment and preparation of the patient, sedation, analgesia and premedication (general principles, drugs, mode of action and side effects), stages of general anesthesia and patient monitoring, ; anesthetic accidents and emergencies (regurgitation, gastroesophageal reflux, vomiting, hypoxia, hypercapnia, hypocapnia, apnea, suffocation, cardiovascular shock, cardiac arrest) and their management; anesthesia of equines, bovine, small ruminants, porcine, dogs, cats, small mammals, birds, reptiles, amphibians, fishes and invertebrates, anesthesia for animal with disease conditions; nutritional support of dogs and cats (essentials, energy and nutrient requirement calculation, techniques of enteral and parenteral nutrition), fluid and electrolyte therapy (essentials, requirement calculation, types of fluids, administration techniques), shock (classification, etiopathogenesis and management).

Number of contact hours/semester: 39 hours for lectures and 13 hours for clinical training.

ECTS: 4.

Qualifications of coordinator(s): Veterinarians, PhD with teaching, clinical and/or research experience in Veterinary Anesthesia and Intensive Care.

Teaching targets: 1) Principles of animal restrain. 2) Pharmacology of anesthetic, sedative, and analgesic agents. 3) Essentials and techniques of local and general anesthesia and sedation of animals. 4) Diagnosis, management, and prevention of anesthetic complications. 5) Principles of anesthetic management of various animal species. 6) Principles of anesthetic management of diseased animals. 7) Essentials of nutritional support, fluid and electrolyte therapy, and management of shock.

3) Companion Animal Medicine III: Canine and feline gastroenterology, nephrology and urology and exotic animal medicine

Course category: Obligatory.

Course outline: Lectures: clinical manifestations and laboratory diagnosis of gastrointestinal disorders in dogs and cats, general principles of endoscopy of the gastrointestinal tract, diseases of the pharynx, esophagus, stomach, small and large intestine, liver and pancreas of dogs and cats; acute and chronic renal failure in dogs and cats, glomerulopathies and nephrotic syndrome, diagnostic investigation of polyuria-polydipsia, hematuria, pollakiuria, dysuria and urine incontinence, canine urolithiasis, urinary tract infections and bacterial

prostatitis and feline lower urinary tract disease; cutaneous and internal diseases of small mammals and reptiles. Clinical training: clinical training in companion animal medicine.

Number of contact hours/semester: 26 hours for lectures and 23 hours for clinical training.

ECTS: 4.

Qualifications of coordinator(s): Veterinarians, PhD, with teaching, clinical and/or research experience in Companion Animal Medicine.

Teaching targets: 1) Differential diagnosis of clinical manifestations of companion animal digestive system diseases (dysphagia, regurgitation, vomiting, diarrhea, tenesmus). 2) Indications, contraindications, and possible findings of gastrointestinal endoscopy. 3) 8Etiology, diagnosis and treatment of most common diseases of pharynx, esophagus (megaesophagus, esophagitis), stomach (acute gastritis, foreign bodies, gastroduodenal ulceration, chronic gastritis, gastric hypomotility), intestine (acute enteritis and colitis, antibiotic-responsive diarrhea, idiopathic inflammatory bowel disease, intestinal lymphangiectasia, short bowel syndrome), liver (hepatitis, necrosis, cholangiohepatitis, chronic hepatitis, hepatic lipidosis, portosystemic shunts, hepatic encephalopathy, hepatic failure) and exocrine pancreas (acute pancreatitis, chronic pancreatitis, pancreatic insufficiency) in dogs and cats. 4) Etiology, diagnostic and treatment of acute and chronic renal disease in dogs and cats. 5) Etiology, diagnosis, and medical treatment of canine and feline glomerulopathies and their complications. 6) Diagnostic approach of polyuria-polydipsia, hematuria, pollakiuria, stranguria and urine incontinence in dogs and cats. 7) Etiology, diagnosis, and medical treatment of lower urinary tract disorders (canine urolithiasis and urinary tract infections, feline lower urinary tract disease). 8) Etiology, diagnosis, and medical treatment of canine bacterial prostatitis. 9) Etiology, diagnosis, and medical treatment of the most common cutaneous and internal diseases of small mammals and reptiles.

4) Production Animal Medicine III: Medicine of respiratory and nervous system

Course category: Obligatory.

Course outline: Lectures: atrophic rhinitis-inclusion body rhinitis in pigs, equine, bovine, sheep, goat, pigs and rabbit pneumonia in young and adults, lung abscesses in sheep, bluetongue, malignant catarrhal fever; neurological examination and diagnosis of neurologic syndromes in ruminants, listeriosis, coenurosis, nervous form of progressive pneumonia and scrapie in sheep and goats, bovine spongiform encephalopathy, tetanus in equines, Glasser's disease and streptococcal infections (meningitis, pneumonia, arthritis), erysipelas and edema

disease in pigs. Clinical training: clinical cases at animal and herd level, diagnostic approach and hospitalization of production animals, farm visits, student essays.

Number of contact hours/semester: 26 hours for lectures and 16 hours for clinical training.

ECTS: 4.

Qualifications of coordinator(s): Veterinarians, PhD, with teaching, clinical and/or research experience in Production Animal Medicine.

Teaching targets: 1) Etiopathogenesis, clinical signs, diagnosis and treatment of respiratory and nervous system diseases of production animals. 2) Management of farms with respiratory and nervous system diseases.

5) Orthopedic Surgery

Course category: Obligatory.

Course outline: Companion animals: orthopedic examination and other diagnostic methods, fracture healing, classification of fractures and options in fracture management, external cooptation, bone fixation materials and techniques, fracture complications, open fractures, osteomyelitis, fractures in immature patients, osteochondrosis, bone grafts, non-traumatic bone diseases; traumatic joint diseases, management of luxation, congenital joint diseases, ligament rupture of the stifle joint and meniscal injury, salvage procedures (arthrodesis, amputation), osteoarthritis and septic arthritis; essentials, surgical techniques and surgical treatment of muscle and tendon injuries; musculoskeletal neoplasia. Ruminants: diagnostic investigation of lameness, specific inflammatory bone diseases. Horses: surgical treatment of the diseases of muscles, tendons, elytron, and synovial bursae of the orthopedic conditions of the rearmost part of the limbs, navicular syndrome and laminitis.

Number of contact hours/semester: 39 hours for lectures.

ECTS: 3.

Qualifications of coordinator(s): Veterinarians, PhD with teaching, clinical and/or research experience in Orthopedic Surgery of Animals.

Teaching targets: 1) Etiology and diagnosis of the diseases of musculoskeletal system of domestic animals. 2) Selection of appropriate medical and surgical and post-surgical treatment.

6) Poultry Medicine I: Nutritional and infectious diseases, farm management and prevention strategies

Course category: Obligatory.

Course outline: Lectures: essentials of diagnosis, control and prevention of poultry diseases, determinants of disease resistance; nutritional diseases, developmental and metabolic diseases, mycotoxicoses and other toxicoses, bacterial diseases (salmonellosis, campylobacteriosis, colibacillosis, pasteurellosis and other respiratory bacterial infections, infectious coryza and related bacterial infections, mycoplasmosis, clostridial diseases, chlamydiosis); fungal diseases; emerging and diseases of complex or unknown etiology. Clinical training: clinical training in poultry medicine

Number of contact hours/semester: 26 hours for lectures and 16 hours for clinical training.

ECTS: 3.

Qualifications of coordinator(s): Veterinarians, PhD with teaching, clinical and/or research experience in Poultry Medicine.

Teaching targets: 1) Poultry necropsy. 2) Poultry handling and restraint. 3) History collection and clinical examination of individuals and populations. 4) List of differential diagnoses based on clinical examination and diagnostic tests. 5) Sampling, diagnostic tests and interpretation of test results. 6) Regulatory and public health implications of common poultry diseases. 7) Management protocols to treat and prevent nutritional and infectious poultry diseases.

7) Obstetrics and Reproduction III: Obstetrics and reproduction medicine of mare, bitch, queen, doe, female laboratory and exotic animals, mammary gland medicine, perinatal medicine and neonatology

Course category: Obligatory.

Course outline: Lectures: diseases and pathologic conditions of mare, bitch, queen, doe, female laboratory and exotic animal genital system or other and conditions that reduce fertility or interfere with pregnancy of obstetric, microbial, parasitic, nutritional, metabolic, traumatic and managemental cause and which appear before, during and after pregnancy: etiology, financial consequences, pathophysiology, clinical signs, diagnosis, prevention, control, conservative and surgical treatment and public health significance. Medicine of the mammary gland of female animals: diseases and pathologic conditions of the mammary glands of microbial, parasitic, nutritional, metabolic, traumatic and managemental cause and which appear during and after lactation: etiology, financial consequences, pathophysiology, clinical signs, diagnosis, prevention, control, conservative and surgical treatment, and public health significance. Perinatal medicine and neonatology: diseases and pathologic conditions of microbial, parasitic, nutritional, metabolic, traumatic and managemental because which appear during lactation: etiology, financial consequences, pathophysiology, clinical signs,

diagnosis, prevention, control, conservative and surgical treatment, and public health significance. Clinical and laboratory training: propaedeutics, history taking and diagnostic approach of reproduction problems of mammals, physical examination of the genital system of female animals, reproduction indices and laboratory exercises.

Number of contact hours/semester: 26 hours for lectures and 29 hours for clinical and laboratory training.

ECTS: 3.

Qualifications of coordinator(s): Veterinarians, PhD with teaching, clinical and/or research experience in Animal Obstetrics and Reproduction.

Teaching targets: 1) Etiology, financial consequences, pathophysiology, clinical signs, diagnosis, prevention, control, conservative and surgical treatment and public health significance of mare, bitch, queen, doe, female laboratory, and exotic animal genital system diseases. 2) Mammary gland medicine of female animals. 2) Perinatal medicine and neonatology of domestic animals.

8) Diagnostic Pathology I: Diagnostic pathology of production animals

Course category: Obligatory.

Course outline: Lectures: techniques of post-mortem examination; post-mortem findings, study of macroscopic and microscopic organ lesions of bovine, small ruminants, pigs and rabbits with the aim of investigation of etiopathogenesis and disease diagnosis. Clinical training: post-mortem examination of animals and reporting of findings.

Number of contact hours/semester: 20 hours for lectures and 23 hours for clinical training.

ECTS: 3.

Qualifications of coordinator(s): Veterinarians, PhD, with teaching, laboratory and/or research experience in Veterinary Pathology.

Teaching targets: 1) Techniques of post-mortem examination. 2) Identification of organ macroscopic and microscopic lesions in bovine, small ruminants, pigs and rabbits.

9) Reproduction physiology and medicine of male laboratory and exotic animals and artificial insemination

Course category: Obligatory.

Course outline: Lectures: reproduction physiology of male mammals (sperm production and biochemistry, reproduction endocrinology); diseases and pathologic conditions of stallion, bull, ram, buck, boar, dog, tom cat, male laboratory and exotic animals genital system and conditions that reduce fertility of microbial, parasitic, nutritional, metabolic, traumatic and

managemental cause: etiology, financial consequences, pathophysiology, clinical signs, diagnosis, prevention, control, conservative and surgical treatment and public health significance; semen collection, evaluation, preparation and artificial insemination. Clinical training: physical examination of male genital system, semen collection, evaluation, preparation; diagnostic and therapeutic techniques, preventative and therapeutic protocols, surgical operations.

Number of contact hours/semester: 20 hours for lectures and 10 hours for clinical training.

ECTS: 2.

Qualifications of coordinator(s): Veterinarians, PhD with teaching, clinical and/or research experience in Animal Obstetrics and Reproduction.

Teaching targets: 1) Etiology, financial consequences, pathophysiology, clinical signs, diagnosis, prevention, control, conservative and surgical treatment and public health significance of male genital system diseases and pathologic conditions. 2) Artificial insemination.

8th SEMESTER COURSES

1) Hygiene of Foods of Animal Origin II, Certification and Composing Reports

Course category: Obligatory.

Course outline: Lectures: essentials of food microbiology, factors affecting the growth of microorganisms in foods, microorganisms as indicators of food safety and hygiene, foodborne pathogens and foodborne diseases, foodborne pathogens outbreaks, public health significance and control measures; hygiene and safety criteria for foods according to current legislation; chemical and physical hazards from foods of animal origin (dioxins, heavy metals, mycotoxins, veterinary drug residues); hygiene and technology of eggs and egg products; hygiene of honey; application of HACCP and ISO systems in food processing plants. Tutorials, laboratory, and slaughterhouse training: official veterinary examination of bovine, small ruminant, and porcine carcasses; carcass lesions due to bacterial, viral, parasitic and protozoan diseases and actions of the official veterinarian; foreclosures by the official veterinarian, hygienic evaluation of dairy products; hygienic evaluation of fish and fish products; hygienic evaluation of honey; microbiological analysis of foods.

Number of contact hours/semester: 39 hours for lectures and 39 hours for tutorials, laboratory training and slaughterhouse visits.

ECTS: 5.

Qualifications of coordinator(s): Veterinarians, PhD with teaching, laboratory and/or research experience in Hygiene of Foods of Animal Origin.

Teaching targets: 1) Essentials of food microbiology. 2) Factors affecting growth of microorganisms in foods. 3) Microbiological criteria of food hygiene and safety. 4) Foodborne pathogens and foodborne diseases. 5) Foodborne pathogens outbreaks, public health significance and control measures. 6) Criteria of food safety and hygiene according to current legislation. 7) Chemical and physical hazards from foods. 8) Hygiene and technology of eggs and egg products. 9) Hygiene of honey. 10) Application of HACCP and ISO systems.

2) Soft Tissue Surgery

Course category: Obligatory.

Course outline: Lectures: feline oral dysphagia, periodontal disease and teeth extraction in companion animals; surgical diseases of the digestive system and peritonitis in companion animals; oral and teeth surgical diseases of the horse; surgical diseases of the digestive system in farm animals; hernias; surgical diseases of respiratory system, pleural cavity, thoracic wall, liver and extrahepatic biliary system, endocrine, cardiovascular, lymphatic, urinary and nervous system; surgical diseases of testis, epididymis, scrotum, penis and prepuce in companion animals and prostate of the dog; surgical diseases of testis, epididymis, scrotum, penis and prepuce in farm animals; surgical diseases of the ear, skin, digits and footpads, cutaneous and mammary neoplasms in companion animals.

Number of contact hours/semester: 39 hours for lectures and 39 hours for clinical training.

ECTS: 5.

Qualifications of coordinator(s): Veterinarians, PhD with teaching, clinical and/or research experience in Soft Tissue Surgery of Animals.

Teaching targets: 1) Etiology, principles and diagnostic techniques, medical and surgical treatment of soft tissue surgical diseases of domestic animals.

3) Obstetrics and Reproduction IV: Reproduction therapeutics, biotechnology, and management

Course category: Obligatory.

Course outline: Lectures: therapeutics of reproduction problems; reproduction biotechnology, assisted reproduction (in vitro collection and transportation of embryos, extracorporeal embryo production, cryopreservation of ova and embryos); management of reproduction (reproduction, lactation, neonatals) in bovine, ovine, caprine, and porcine farms. Clinical and laboratory training: clinical training in farms and in outpatient service,

laboratory exercises, diagnostic and therapeutic techniques, preventative and therapeutic protocols, management of obstetric cases and surgical operations.

Number of contact hours/semester: 26 hours for lectures and 39 hours for clinical and laboratory training.

ECTS: 4.

Qualifications of coordinator(s): Veterinarians, PhD with teaching, clinical and/or research experience in Animal Obstetrics and Reproduction.

Teaching targets: 1) Treatment of reproduction problems. 2) Reproduction biotechnology and assisted preproduction. 3) Reproduction management in bovine, ovine, caprine, and porcine farms.

4) Poultry Medicine II: Viral and parasitic diseases, farm management and prevention strategies

Course category: Obligatory.

Course outline: Lectures: Newcastle disease, other avian paramyxovirus and metapneumovirus infections, infectious bronchitis, infectious laryngotracheitis, influenza, infectious bursal disease, infectious anemia, and diseases due to other circovirus infections, adenovirus infections, pox, reovirus infections, viral enteric infections, viral Infections of waterfowl, neoplastic diseases; external parasites, internal parasites and protozoal infections. Clinical training: clinical training in poultry medicine.

Number of contact hours/semester: 26 hours of lectures and 16 hours for clinical training.

ECTS: 3.

Qualifications of coordinator(s): Veterinarians, PhD with teaching, clinical and/or research experience in Poultry Medicine.

Teaching targets: 1) Diagnostic approach for individual animals and population diseases. 2) Interpretation of the results of diagnostic tests for individual animals and populations. 3) Preventive protocols customized to the age of the poultry and management style, including biosecurity and vaccination protocols. 4) Medication and vaccination routes of administration in flocks. 5) Management protocols for treatment and prevention of common diseases of poultry breeder flocks. 6) Major determinants of financial profit and losses in poultry production facilities.

5) Companion Animal Medicine IV: Canine and feline neurology and respiratory medicine

Course category: Obligatory.

Course outline: Lectures: neurologic examination, collection and analysis of cerebrospinal fluid samples in dogs and cats, localization of lesions in the nervous system and neurological syndromes in dogs and cats, disorders of the brain, vestibular syndrome, deafness, cerebellar syndrome, paroxysmal syndromes, spinal cord diseases, peripheral neuropathies, disorders of neuromuscular junction and myopathies in dogs and cats; clinical manifestations of respiratory diseases of dogs and cats, diseases of nasal cavity and sinuses, larynx, trachea, bronchi, pulmonary parenchyma, pleural space and mediastinum of dogs and cats. Clinical training: clinical training in companion animal medicine.

Number of contact hours/semester: 20 hours for lectures and 23 hours for clinical training.

ECTS: 3.

Qualifications of coordinator(s): Veterinarians, PhD, with teaching, clinical and/or research experience in Companion Animal Medicine.

Teaching targets: 1) Systematic neurological examination of dogs and cats. 2) Collection and analysis of cerebrospinal fluid samples from dogs and cats. 3) Localization of nervous system lesions and differentiation among neurological syndromes in dogs and cats. 4) Etiology, diagnosis and medical management of the most common brain disorders, vestibular syndrome, deafness, cerebellar syndrome, seizures, spinal cord diseases, peripheral neuropathies, neuromuscular junction disorders and myopathies of dogs and cats. 5) Management of tetraplegic and paraplegic dogs and cats. 6) Localization of respiratory lesions of dogs and cats based on their clinical manifestations. 7) Etiology, diagnosis and medical treatment of the most common diseases of the nasal cavity and sinuses, larynx, trachea, bronchi, pulmonary parenchyma, pleural space and mediastinum of dogs and cats.

6) Diagnostic Pathology II: Diagnostic cytology, diagnostic pathology of companion animals, equines, exotic animals and wildlife and veterinary forensics

Course category: Obligatory.

Course outline: Lectures: introduction to surgical pathology, use of biopsy as a diagnostic tool, essentials of diagnostic cytology, canine and feline cytopathology; pattern analysis terminology and importance; study of macroscopic and microscopic organ lesions of dogs, cats, equines, exotic animals, and wildlife with the aim of investigation of etiopathogenesis and disease diagnosis; essentials of veterinary forensics, forensics of animal abuse and illegal killing and relevant legislation. Clinical training: post-mortem examination of animals and reporting of findings.

Number of contact hours/semester: 20 hours for lectures and 23 hours for clinical training.

ECTS: 3.

Qualifications of coordinator(s): Veterinarians, PhD, with teaching, laboratory and/or research experience in Veterinary Pathology.

Teaching targets: 1) Essentials of surgical pathology and use of biopsy as a diagnostic tool. 2) Essentials of diagnostic cytology and cytopathology of dogs and cats. 3) Pattern analysis terminology and importance. 4) Identification of organ macroscopic and microscopic lesions in dogs, cats, equines, exotic animals, and wildlife. 5) Essentials of veterinary forensics. 6) Forensics of animal abuse and illegal killing and relevant legislation. 7) Post-mortem examination of animals and reporting of findings.

7) Production Animal Medicine IV: Disorders from deficiency or excess of macro-elements, trace elements and vitamins, foot diseases and miscellaneous disorders of economic importance

Course category: Obligatory.

Course outline: Lectures: rickets, osteomalacia, o*steofibrosis, w*hite muscle disease, swayback, popper toxicosis, vitamin A deficiency, p*olioencephalomalacia; f*oot diseases of production animals, equine laminitis; urinary tract infections and postpartum dysgalactia syndrome in sows, u*rolithiasis* in ruminants, ectoparasitoses of production animals, anemia, sudden death and emaciation in sheep and goats. Clinical training: clinical cases at animal and herd level, diagnostic approach and hospitalization of production animals, farm visits, student essays.

Number of contact hours/semester: 20 hours for lectures and 16 hours for clinical training.

ECTS: 3.

Qualifications of coordinator(s): Veterinarians, PhD, with teaching, clinical and/or research experience in Production Animal Medicine.

Teaching targets: 1) Etiopathogenesis, clinical findings, diagnosis, and treatment of disorders from deficiency or excess of macro-elements, trace elements and vitamins. 2) Etiopathogenesis, clinical findings, diagnosis, and treatment of foot diseases. 3) Etiopathogenesis, clinical findings, diagnosis, and treatment of miscellaneous production animal disorders of economic importance.

8) Diagnostic imaging

Course category: Obligatory.

Course outline: Darkroom theory, visual perception and radiographic interpretation, radiographic anatomy, radiographic diagnosis of abdominal, thoracic, respiratory, cardiovascular, digestive, urinary, genital, central nervous and musculoskeletal system, liver, and spleen; essentials of ultrasonography.

Number of contact hours/semester: 13 hours for lectures and 39 hours for clinical training

ECTS: 3.

Qualifications of coordinator(s): Veterinarians, PhD, with teaching, clinical and/or research experience in Diagnostic Imaging of Animals.

Teaching targets: 1) Essentials of radiation physics and radiography. 2) Essentials of radiation protection. 3) Essentials of producing radiographs. 4) Radiograph interpretation. 5) Radiographic anatomy and diagnosis of important diseases of organs and tissues. 6) Essentials of ultrasonography.

9) Clinical Pharmacology and Pharmacy

Course category: Obligatory.

Course outline: Prescription; administration routes, dose calculation and administration rate; Clinical pharmacokinetics and pharmacodynamics; clinical implications of drug metabolism and pharmacogenetics; differences between animal species and breeds; drug interactions and monitoring, influence of disease on drug use; principles of drug selection; therapeutic drug monitoring (aminoglycosides, phenobarbital, digoxin, theophylline); clinical use of antibacterial, antiparasitic, antifungal and antiviral drugs, main classes of chemotherapeutics; clinical importance of sensitivity and resistance of organisms to antimicrobials, principles of antimicrobial use, side-effects, toxicity and interactions; antineoplastic chemotherapy and clinical trials of new drugs; pharmacovigilance, pharmacoeconomy, drug legislation; immunotherapy.

Number of contact hours/semester: 13 hours for lectures.

ECTS: 1.

Qualifications of coordinator(s): PhD, with teaching, laboratory and/or research experience in Pharmacology.

Teaching targets: 1) Drug prescription. 2) Drug selection to maximize therapeutic efficacy and minimize side effects.

9th SEMESTER COURSES

1) Practical Training in Hygiene of Foods of Animal Origin I

Course category: Obligatory.

Course outline: veterinary examination of bovine, ovine and caprine carcasses; veterinary examination of lymph nodes, veterinary examination of the head, heart, lungs, liver, kidneys and remaining organs of carcasses; cuts during veterinary examination of carcasses;

legislative (national and European community) requirements during hygienic inspection of foods of animal origin and public health protection; hygienic inspection of eggs, meat products and canned foods; training visits in food industries.

Number of contact hours/semester: 65 hours for tutorials, laboratory training, slaughterhouse, and food industry visits.

ECTS: 6.

Qualifications of coordinator(s): Veterinarians, PhD with teaching, laboratory and/or research experience in Hygiene of Foods of Animal Origin.

Teaching targets: 1) Actions of the official veterinarian during carcass inspection. 2) Hygienic evaluation of eggs, meat products and canned foods. 3) Legislative requirements during evaluation of foods of animal origin and public health protection.

2) Practical Training in Obstetrics and Reproduction I

Course category: Obligatory.

Course outline: Clinical training in farms and in outpatient service, laboratory exercises, diagnostic and therapeutic techniques, preventative and therapeutic protocols, management of obstetric cases and surgical operations.

Number of contact hours/semester: 65 hours for clinical training.

ECTS: 6.

Qualifications of coordinator(s): Veterinarians, PhD with teaching, clinical and/or research experience in Animal Obstetrics and Reproduction.

Teaching targets: **Teaching targets**: 1) Handling of obstetric cases at the individual animal and farm level. 2) Intergraded reproduction management of production animal farms.

3) Practical Training in Anesthesiology, Surgery and Diagnostic Imaging I

Course category: Obligatory.

Course outline: Clinical and imaging diagnostic and therapeutic management of clinical cases (ophthalmic, orthopaedic and soft tissue surgical diseases); anesthesia, intensive care, post-operative management and hospitalization of diseased animals; observation and participation in surgical procedures.

Number of contact hours/semester: 55 hours for clinical training.

ECTS: 4.

Qualifications of coordinator(s): Veterinarians, PhD, with teaching, clinical and/or research experience in Anesthesiology, Surgery and Diagnostic Imaging of Animals.

Teaching targets: 1) Diagnostic and anesthesiology management of surgical cases. 2) Diagnostic and anesthesiology management of cases that need intensive treatment. 3) Hospitalization of surgical cases. 4) Participation, as assistant, in basic surgical operations.

4) Practical Training in Companion Animal Medicine I

Course category: Obligatory.

Course outline: Clinical training in companion animal medicine.

Number of contact hours/semester: 55 hours for clinical training.

ECTS: 4.

Qualifications of coordinator(s): Veterinarians, PhD, with teaching, clinical and/or research experience in Companion Animal Medicine.

Teaching targets: 1) Obtaining a detailed history from the owners of sick companion animals. 2) Performing a thorough physical examination of companion animals. 3) Obtaining diagnostic samples from companion animals.

5) Practical Training in Diagnostic Pathology I

Course category: Obligatory.

Course outline: Post-mortem examination of animals and reporting of findings.

Number of contact hours/semester: 39 hours for clinical training.

ECTS: 3.

Qualifications of coordinator(s): Veterinarians, PhD, with teaching, laboratory and/or research experience in Veterinary Pathology.

Teaching targets: 1) Post-mortem examination, diagnosis and reporting of findings.

6) Practical Training in Production Animal Medicine I

Course category: Obligatory.

Course outline: Clinical training in production animal medicine.

Number of contact hours/semester: 36 hours for clinical training.

ECTS: 3.

Qualifications of coordinator(s): Veterinarians, PhD, with teaching, clinical and/or research experience in Production Animal Medicine.

Teaching targets: 1) Obtaining a detailed history from the owners of sick production animals. 2) Performing a thorough physical examination of production animals. 3) Obtaining diagnostic samples from production animals.

7) Practical Training in Poultry Medicine I

Course category: Obligatory.

Course outline: Visits to poultry farms, history taking, necropsy and application of modern laboratory tests in poultry; investigation of clinical cases.

Number of contact hours/semester: 26 hours for clinical training.

ECTS: 2.

Qualifications of coordinator(s): Veterinarians, PhD with teaching, clinical and/or research experience in Poultry Medicine.

Teaching targets: 1) Investigation of poultry diseases due to bacterial and nutritional causes. 2) Selection of appropriate laboratory tests. 3) Pharmaceutical products and vaccines used to treat bacterial infections in poultry. 4) Nutritional products used to treat nutritional disorders in poultry.

8) Elective courses

Every student will attend one of the four elective courses and the maximum number of students that can attend each of them corresponds to the 30% of the registered students attending the 9th semester.

8.1) Feline Medicine Elective Course

Course category: Elective.

Course outline: Lectures: interactive presentations of common feline medical problems. Clinical training: diagnostic investigation and treatment of clinical cases of feline medicine with a moderate level of complexity.

Number of contact hours/semester: 13 hours for lectures and 13 hours for clinical training.

ECTS: 2.

Qualifications of coordinator(s): Veterinarians, PhD, with teaching, clinical and/or research experience in Feline Medicine.

Teaching targets: 1) Problem solving in feline medicine in a logical and methodological way including defining medical problems at their highest possible level, determining the list of differentials, determining which of the possible differentials are most likely based upon the available data and determining the optimal diagnostic and/or therapeutic plan.

8.2) Companion Animal Dermatology Elective Course

Course category: Elective.

Course outline: Lectures: case-oriented systematic diagnostic investigation and individualized treatment of canine and feline skin diseases. Clinical training: diagnostic investigation and treatment of clinical cases of canine and feline skin diseases with a moderate level of complexity.

Number of contact hours/semester: 13 hours for lectures and 13 hours for clinical training.

ECTS: 2.

Qualifications of coordinator(s): Veterinarians, PhD, with teaching, clinical and/or research experience in Companion Animal Dermatology

Teaching targets: 1) Thorough diagnostic investigation and individualized treatment of dogs and cats with pruritic skin diseases, skin diseases with alopecia-hypotrichosis, keratinization disorders, skin diseases with macules, papules or pustules, with draining tracts, with ulcers and erosions, with pigmentary disorders and with wheals or masses.

8.3) Application of Innovative Ideas and Technologies in pig and poultry production

Course category: Elective.

Course outline: Innovative ideas and technologies applied in modern pig and poultry industry in order to improve the health status and growth performance, including clinical nutrition, housing conditions and management techniques, use of various products as alternatives to antibiotics and use of innovative equipment for the nutrition and management of animals; methods of implementation and evaluation of innovative ideas under field conditions in Greek farms; estimation of economic efficiency of innovative ideas and technologies in relation to the improvement of health status, performance and welfare conditions of pigs and poultry.

Number of contact hours/semester: 13 hours for lectures and 13 hours for clinical training.

ECTS: 2.

Qualifications of coordinator(s): Veterinarians, PhD, with teaching, clinical and/or research experience in nutrition, management and medicine in pigs and poultry.

Teaching targets: 1) Essential concepts of innovative ideas in modern pig and poultry farming. 2) Use of innovative ideas and technologies relevant to nutrition and management. 3) Products and equipment used for innovative solutions. 4) Implementation and evaluation of innovative ideas under field conditions of Greek farms. 5) Assessment of cost effectiveness of innovative ideas and technologies.

8.4) Bovine Reproduction Elective Course

Course category: Elective.

Course outline: Lectures: interactions between food and reproduction, thermal stress and its importance on cow fertility, analysis of reproduction indices in dairy farms, economic analysis and correlation with management interventions, assisted reproduction in cows, methods for multiple ovulation. Clinical training: clinical training in bovine farms and in outpatient service, laboratory exercises, diagnostic and therapeutic techniques, preventative and therapeutic protocols, management of obstetric cases and surgical operations.
Number of contact hours/semester: 13 hours for lectures and 13 hours for clinical training.
ECTS: 2.
Qualifications of coordinator(s): Veterinarians, PhD, with teaching, clinical and/or research experience in Bovine Reproduction.
Teaching targets: 1) Intergraded reproduction management in bovine farms.

10th SEMESTER COURSES

1) Practical Training in Hygiene of Foods of Animal Origin II
Course category: Obligatory.
Course outline: Inspection of swine, poultry, game and rabbit carcasses, identification of lesions due to bacterial, viral, parasitic and protozoal diseases in animal carcasses; foreclosures and actions of the official veterinarian; hygienic inspection of dairy products, fish, fish products and honey; microbiological analysis of foods; application of HACCP system in the food industry; training visits in food industries.
Number of contact hours/semester: 65 hours for tutorials, laboratory training, slaughterhouse and food industry visits.
ECTS: 5.
Qualifications of coordinator(s): Veterinarians, PhD with teaching, laboratory and/or research experience in Hygiene of Foods of Animal Origin.
Teaching targets: 1) Lesions in carcasses from bacterial, viral, parasitic and protozoal diseases. 2) Hygienic inspection of dairy products, fish, fish products and honey. 3) Basic microbiological analysis of foods. 5) Legislative requirements during evaluation of foods of animal origin. 6) Application of HACCP system in the food industry.

2) Practical Training in Obstetrics and Reproduction II
Course category: Obligatory.

Course outline: clinical training in farms, laboratory exercises, diagnostic and therapeutic techniques, preventative and therapeutic protocols, management of obstetric cases and surgical operations.

Number of contact hours/semester: 65 hours for clinical training.

ECTS: 5.

Qualifications of coordinator(s): Veterinarians, PhD with teaching, clinical and/or research experience in Animal Obstetrics and Reproduction.

Teaching targets: 1) Handling of obstetric cases at the individual animal and farm level. 2) Intergraded reproduction management of production animal farms.

3) Practical Training in Companion Animal Medicine II

Course category: Obligatory.

Course outline: Clinical training in companion animal medicine.

Number of contact hours/semester: 55 hours for clinical training.

ECTS: 5.

Qualifications of coordinator(s): Veterinarians, PhD, with teaching, clinical and/or research experience in Companion Animal Medicine.

Teaching targets: 1) Critical evaluation of physical examination findings and results of laboratory examination to diagnose common companion animal medical conditions. 2) Medical treatment of common companion animal diseases.

4) Practical Training in Anesthesiology, Surgery and Diagnostic Imaging II

Course category: Obligatory.

Course outline: Clinical and imaging diagnostic and therapeutic management of clinical cases (ophthalmic, orthopaedic, and soft tissue surgical diseases); anesthesia, intensive care, post-operative management and hospitalization of diseased animals; observation and participation in surgical procedures.

Number of contact hours/semester: 55 hours for clinical training.

ECTS: 4.

Qualifications of coordinator(s): Veterinarians, PhD, with teaching, clinical and/or research experience in Anesthesiology, Surgery and Diagnostic Imaging of Animals.

Teaching targets: 1) Diagnostic and anesthesiology management of surgical cases. 2) Diagnostic and anesthesiology management of cases that need intensive treatment. 3) Hospitalization of surgical cases. 4) Participation, as assistants, in basic surgical operations.

5) Practical Training in Diagnostic Pathology II

Course category: Obligatory.

Course outline: Post-mortem examination of animals and reporting of findings.

Number of contact hours/semester: 39 hours for clinical training.

ECTS: 3.

Qualifications of coordinator(s): Veterinarians, PhD, with teaching, laboratory and/or research experience in Veterinary Pathology.

Teaching targets: 1) Post-mortem examination, diagnosis and reporting of findings.

6) Practical Training in Production Animal Medicine II

Course category: Obligatory.

Course outline: Clinical training in production animal medicine.

Number of contact hours/semester: 36 hours for clinical training.

ECTS: 3.

Qualifications of coordinator(s): Veterinarians, PhD, with teaching, clinical and/or research experience in Production Animal Medicine.

Teaching targets: 1) Critical evaluation of physical examination findings and results of laboratory examination to diagnose common production animal medical conditions. 2) Medical treatment of common production animal diseases.

7) Practical Training in Poultry Medicine II

Course category: Obligatory.

Course outline: Visits to poultry farms, history taking, necropsy and application of modern laboratory tests in poultry; current vaccination methods and biosecurity; blood sampling techniques; investigation of clinical cases.

Number of contact hours/semester: 26 hours for clinical training.

ECTS: 2.

Qualifications of coordinator(s): Veterinarians, PhD with teaching, clinical and/or research experience in Poultry Medicine.

Teaching targets: 1) Investigation of poultry diseases due to viruses and parasites. 2) Blood sampling from all poultry species. 3) Biosecurity measures and their implementation at all stages of production. 4) Current vaccination methods. 5) Pharmaceutical products, vaccines and products for cleaning and disinfection of poultry farms.

8) Herd Health Management

Course category: Obligatory.

Course outline: The future: herd health management, herd health programs in dairy herds, herd health programs in dairy sheep flocks, herd health programs in dairy goat flocks, herd health programs in pig herds, herd health programs in poultry flocks, herd health programs in layer flocks.

Number of contact hours/semester: 13 hours for lectures and 13 hours for practical training.

ECTS: 1.

Veterinarians, PhD, with teaching, clinical and/or research experience in Herd Health Management.

Teaching targets: Development and implementation of tailored herd health programs in animal populations.

9) Career Planning, Veterinary Practice Management and relevant Legislation

Course category: Obligatory.

Course outline: Professional skills, potentials and opportunities; veterinary carrier in the public sector, in companion animal practice, in production animal practice, in hygiene and technology of foods of animal origin; introduction to the business plan, marketing (consumer needs, market research, product and price), financial plan (profit and loss, balance sheet, funding), human resources (management of human resources, team and organization, responsibilities, objectives) and relevant legislation.

Number of contact hours/semester: 13 hours for lectures and 13 hours for tutorials and practical training.

ECTS: 1

Qualifications of coordinator(s): Veterinarians with teaching and/or clinical experience in companion animal medicine, production animal medicine and/or hygiene and technology of foods of animal origin.

Teaching targets: 1) Current situation in companion animal medicine business. 2) Current situation in production animal medicine business. 3) Current situation in hygiene and technology of foods of animal origin business. 4) Preparing curriculum vitae. 5) Acquisition and management of information related to the professional activity. 6) Construction of a business plan. 7) Management of financial and economic data on the veterinary practice level. 8) Management of human resources. 9) Essential marketing tools for a veterinary business. 10) Communication skills and client interactions. 11) Application of tools to analyze problems and provide corrective recommendations and plans. 12) Legislation relevant to veterinary practices.

10) Elective courses

Every student will attend one of the five elective courses and the maximum number of students that can attend each of them corresponds to the 24% of the registered students attending the 9th semester.

10.1) Tumors in Companion Animals

Course category: Elective.

Course outline: Essentials of cancer biology, metastasis, classification and staging systems for cancer diagnosis, clinical approach to companion animals with cancer, antineoplastic chemotherapy and clinical applications in companion animals, essentials of surgical oncology, pathology of various body organ and system tumors in dogs and cats.

Number of contact hours/semester: 13 hours for lectures and 13 hours for tutorials and practical training.

ECTS: 1.

Qualifications of coordinator (s): Veterinarians, PhD with teaching, laboratory, clinical and/or research experience in Veterinary Pathology, Companion Animal Medicine and/or Companion Animal Surgery.

Teaching targets: 1) Cancer biology. 2) Classification, staging, clinical approach and treatment of neoplasia in companion animals.

10.2) Companion Animal Physical Therapy

Course category: Elective.

Course outline: History of canine and feline rehabilitation, wound healing of musculoskeletal tissues, exercise physiology, orthopedic and neurologic patient evaluation and diagnostic modalities, therapeutic modalities (massage, range of motion and stretching exercises, aquatic therapy, superficial thermal modalities, electrical stimulation, ultrasound, laser, acupuncture); essentials of physical therapy protocol design; physical rehabilitation for common orthopedic and neurologic conditions.

Number of contact hours/semester: 13 hours for lectures and 13 hours for clinical training.

ECTS: 1.

Qualifications of coordinator(s): Veterinarians, PhD with teaching, clinical and/or research experience in Companion Animal Physical Therapy.

Teaching targets: 1) Evaluation of candidates for physical therapy. 2) Essentials and safety of therapeutic modalities and implementation of appropriate physical rehabilitation protocols.

10.3) Food Quality Control and relevant Legislation

Course category: Elective.

Course outline: Lectures: official food quality control, methods and interpretation of test results, food analysis using liquid and gas chromatography, mass chromatography, traceability in food, Fourier-transformed infrared spectroscopy, RASFF system for timed warning for animal and human foods, accreditation of food control laboratories. Tutorials and laboratory training: implementation of official food quality control and of the necessary examinations (microbiologic and chemical and operation procedures of the relevant equipment), traceability during production and processing of animal origin foods, accreditation process for food control laboratories.

Number of contact hours/semester: 13 hours for lectures and 13 hours for tutorials and laboratory training.

ECTS: 1.

Qualifications of coordinator(s): Veterinarians, PhD with teaching, laboratory and/or research experience in Hygiene and/or Technology of Foods of Animal Origin.

Teaching targets: 1) Process of official food quality control and relevant legislation. 2) Methods for food quality control. 3) Food analysis with liquid and gas chromatography, mass chromatography and Fourier-transformed infrared spectroscopy. 4) Traceability during food production and processing. 5) Accreditation of food control laboratories.

10.4) Small Ruminant Reproduction Elective Course

Course category: Elective.

Course outline: Lectures: reproduction management of small ruminant farms, interactions between food and reproduction, reproduction management in the frame of general health management in small ruminant farms, use of specialized laboratory tests in reproduction management of small ruminants, assisted reproduction in small ruminants. Clinical training: clinical training in farms and in outpatient service, laboratory exercises, diagnostic and therapeutic techniques, preventative and therapeutic protocols, management of obstetric cases and surgical operations.

Number of contact hours/semester: 13 hours for lectures and 13 hours for clinical training.

ECTS: 1.

Qualifications of coordinator(s): Veterinarians, PhD with teaching, clinical and/or research experience in Small Ruminant Obstetrics and Reproduction.

Teaching targets: 1) Intergraded reproduction management in small ruminant farms.

10.5) Companion Animal Reproduction Elective Course

Course category: Elective.

Course outline: Lectures: reproduction management of companion animals, management of stray dogs and cats, reproduction management of exotic companion animals, newer drugs in canine and feline reproduction, assisted reproduction in companion animals, reproduction of zoo animals and wildlife. Clinical training: clinical training in outpatient service, laboratory exercises, diagnostic and therapeutic techniques, preventative and therapeutic protocols, management of obstetric cases and surgical operations.

Number of contact hours/semester: 13 hours for lectures and 13 hours for clinical training.

ECTS: 1.

Qualifications of coordinator(s): Veterinarians, PhD with teaching, clinical and/or research experience in Companion Animal Obstetrics and Reproduction.

Teaching targets: 1) Intergraded reproduction management in companion animals.

ACADEMIC TEACHERS of the COURSES

The academic teachers of every course during the academic year 2022-23 are presented in table 3.

Table 3. Academic teachers in the Faculty of Veterinary Science in the academic year 2022-23.

1st semester	
English Veterinary Terminology I	G. Antoniou
Genetics	K. Manolakou
Introduction to Biochemistry	K. Katsoulis, G. Kontopidis
Animal Nutrition and Plant Biology	K. Katsoulis, P. Pantazis
Animal Husbandry, Ethology, Welfare and relevant Legislation I	L. Athanasiou, D. Gougoulis, K. Koutoulis, K. Manolakou, P. Tyrnenopoulou
Macroscopic Anatomy I	A. Pourlis, K. Kokkinaki
Microscopic Anatomy I	A. Pourlis, K. Kokkinaki
Physics for Veterinary Science	V. Softa
Zoology	E. Gourzioti
2nd semester	
English Veterinary Terminology II	G. Antoniou
Biochemistry of Metabolism	K. Katsoulis, G. Kontopidis
Animal husbandry, Ethology, Welfare and relative legislation II	K. Manolakou, D. Gougoulis, P. Pantazis, V. Papatsiros
Macrooscopic Anatomy II	A. Pourlis
Bee production and Medicine	F. Athanasopoulou
Microscopic Anatomy II	A. Pourlis
Physiology I	I. Valasi, K. Theodosiadou
Cellular and Molecular Biology	G. Kontopides, K. Manolakou, I. Pappas,
Ecology	F.Athanasopoulou
3rd semester	
Biostatistics	L. Leontidis, V. Skampardonis
General Microbiology	G. Valiakos, C. Billinis, A. Giannakopoulos, M. Sofia, M. Kantere
Ichthyology, aquatic fauna and aquacultures	Athanasopoulou, P. Pantazis, A. Lattos
Veterinary ethics and Legislation	L. Athanasiou, G. Amiridis, A. Galatos, P. Xenoulis, A. Pexara, N. Solomakos, D. Tondis, D. Doukas, V. Papatsiros, F. Athanasopoulou
Animal Health Economics	Leontidis, V. Skampardonis
Technology of Foods of Animal Origin and relevant Legislation	Solomakos, A. Pexara
Physiology II	I. Valasi, K. Theodosiadou
4th semester	
Immunology	Valiakos, C. Billinis, M. Sofia
Introduction to Animal Medicine	Athanasiou, V. Papatsiros, E. Saridomichelakis, A. Tzivara, D. Gougoulis, P. Tyrnenopoulou
General Pathology	Doukas, D. Tondis
Diagnostic Microbiology	Valiakos, X. Billinis, A. Gainnakopoulos, M. Sofia, M. Kantere
Parasitology and Parasitic Diseases I	Leukaditis

Pharmacology	I. Pappas
Molecular Microbiology and Parasitology	C. Billinis, G. Valiakos,M. Sofia
Bee products	F. Athanasopoulou
5th semester	
Organ specific Pathology	D. Doukas, D. Tontis, Z. Liakou
Fish diseases and health management of aquatic species	F. Athanasopoulou, A. Lattos
Infectious diseases and relevant Legislation I	G. Valiakos, C. Billinis, A. Giannakopoulos, M. Sofia, M. Kantere, M. Chasioti
Obstetrics and Reproduction I	G. Amiridis, N.G.C. Vasileiou (DAP), P. Gouletsou, V. Mavrogianni, P. Tyrnenopoulou, A. Basioura, G.C. Fthenakis
Companion Animal Medicine I	Xenoulis, M. Saridomichelakis, A. Tzivara
Production Animal Medicine I	V. Papatsiros, L. Athanasiou, D. Gougoulis, P. Tyrnenopoulou, K. Apostolidis
Parasitology and Parasitic Diseases II	M. Leukaditis
Toxicology	I.Pappas
Introduction to Intensive Care	G. Georgiou
Husbandry/Pathology of most important aquatic organisms (except fishes)	F. Athanasopoulou, E. Gourzioti
Clinical laboratory diagnostics	L. Athanasiou, K. Kokkinaki
Zoonoses through uniform health approach	M. Chasioti, C. Billinis, G. Valiakos
Comparative pathology and animal models of Human diseases	D. Doukas
6th semester	
Principles of Animal Surgery and Animal Ophthalmology	Galatos, P.. Gouletsou, V. Tsioli
Veterinary Epidemiology	Leontidis, V. Skampardonis
Infectious diseases and relevant Legislation II	Valiakos, C. Billinis, A. Giannakopoulos, M. Sofia
Obstetrics and Reproduction II	S. Amiridis, N.G., C. Vasileiou (DAS), V. Mavrogianni, V. Papatsiros, A. Basioura, G.C. Fthenakis
Companion Animal Medicine II	Athanasiou, P. Xenoulis, E. Saridomichelakis, A. Tzivara
Production Animal Medicine II	Athanasiou, D. Gougoulis, V. Papatsiros,
Hygiene and technology of milk and dairy products and relevant legislation	Pexara, N. Solomakos
Principles of function and use of anesthesiologic equipment	Georgiou
General histopathology of animal organisms	D. Doukas
Interpretation of results of clinical examination in companion animals	Chatzis
Wild life diseases	C. Billinis, A. Giannakopoulos, M. Sofia
Summer Practical Training	Papatsiros, I. Pappas
7th semester	
Veterinary anesthesia and Intensive care	Galatos, E. Flouraki
Diagnostic Pathology – Forensic Veterinary Medicine I	Doukas, D. Tontis
Obstetrics and reproduction III	S. Amiridis , N.G.C. Vasileiou (DAS), P. Gouletsou, V. Mavrogianni, P. Tyrnenopoulou, G.C. Fthenakis

Orthopedic surgery	K. Sideri, P. Tyrnenopoulou
Companion Animal Medicine III	L. Athanasiou, P. Xenoulis, E. Saridomichelakis, A. Tzivara
Production Animal Medicine III	D. Gougoulis, V. Papatsiros, A. Tzivara
Poultry Medicine I	K. Koutoulis
Hygiene of foods and relevant Legislation I	A.Pexara, N. Solomakos, E. Klavdianos
Reproduction physiology and medicine of male mammal animals and artificial insemination	S. Amiridis, P. Gouletsou, A. Basioura , V. Mavrogianni , N.G.C. Vasileiou (DAS), P. Tyrnenopoulou, G.C. Fthenakis
8th semester	
Diagnostic Imaging	Galatos, P. Gouletsou, M. Barbagianni, K. Sideri, P. Tyrnenopoulou
Diagnostic Pathology – Forensic Veterinary Medicine II	Doukas, D. Tontis
Clinical pharmacology and pharmacy	Pappas
Obstetrics and Reproduction IV	S. Amiridis, N.G.C. Vasileiou (DAS), V. Mavrogianni, G.C. Fthenakis
Companion Animal Medicine IV	Xenoulis, E.Saridomichelakis, A. Tzivara
Production Animal Medicine IV	Athanasiou, D. Gougoulis, V. Papatsiros
Poultry Medicine II	Koutsianos, K. Koutoulis
Hygiene of foods and relevant legislation II, certification and composing reports	Pexara, N. Solomakos
Soft tissue surgery	Gouletsou, V. Tsioli, P. Tyrnenopoulou
9th semester	
Practical training in Anesthesiology, Surgery and Diagnostic Imaging I	A. Galatos, P. Gouletsou, M. Barbagianni, K. Sideri, V. Tsioli, P. Tyrnenopoulou, E. Flouraki
Practical training in Diagnostic Pathology and Veterinary Forensic Medicine I	D. Doukas, D. Tontis
Practical training in Obstetrics and Reproduction of domestic mammals I	G. Amiridis, N.G.C. Vasileiou (DAS), P. Gouletsou, V.. Mavrogianni, P. Tyrnenopoulou, G.C. Fthenakis
Practical training in companion animal medicine I	L. Athanasiou, P. Xenoulis, E. Saridomichelakis, A. Tzivara
Practical training in production animal medicine I	D. Gougoulis, V. Papatsiros, A. Tzivara, E. Katsogianou
Practical training in Poultry Medicine I	K. Koutoulis
Practical training in Hygiene of Foods I	A. Pexara, N. Solomakos, E. Klavdianos, M. Chasioti
Bovine reproduction elective course	G. Amiridis
Companion animal dermatology elective course	M. Chatzis
Feline medicine elective course	M. Chatzis
Application of innovative ideas and technologies in pig and poultry production	K. Koutsianos
10th semester	
Herd Health Management	C. Fthenakis
Practical training in Anesthesiology, Surgery and Diagnostic Imaging II	Galatos, P. Gouletsou, M. Barbagianni, K. Sideri, V. Tsioli, P. Tyrnenopoulou, E. Flouraki
Practical training in Diagnostic Pathology and Veterinary Forensic Medicine II	Doukas, D. Tontis
Practical training in Obstetrics and Preproduction of domestic mammals II	G. Amiridis, N.G.C. Vasileiou (DAS), P. Gouletsou, V.S. Mavrogianni, V.Papatsiros P. Tyrnenopoulou, G.C. Fthenakis

Practical training in companion animal medicine II	L. Athanasiou, P. Xenoulis, E. Saridomichelakis, A. Tzivara
Practical training in production animal medicine II	D. Gougoulis, V. Papatsiros, A. Tzivara
Practical training in poultry medicine II	K. Koutoulis
Practical training in Hygiene of Foods II	A. Pexara, N. Solomakos
Career planning, veterinary practice management and relevant legislation	V. Papatsiros, A. Pexara, N. Solomakos, K. Koutoulis, P. Xenoulis, E. Saridomichelakis,
Companion animal reproduction	Not offered
Small ruminant reproduction	G.C. Fthenakis
Tumors in companion animals	L. Athanasiou, D. Tontis, V. Tsioli, M. Barbagianni, D. Doukas
Food quality control and relevant legislation	A. Pexara, N. Solomakos
Companion animal physical therapy	K. Sideri

Notice:

- black letters: academics or academic teachers of the Faculty of Veterinary Science or other departments of the University of Thessaly (DBB: Department of Biochemistry - Biotechnology, DES: Department of Energy Systems, DAS: Department of Animal Science)
- red letters: full time or part time contractors academic teachers.

Shaded courses: elective courses.

POSTGADUATE EDUCATION

The necessity of specialization during the practice of veterinary profession and the fast-growing of available knowledge in the discipline of veterinary sciences require postgraduate education. The degree of Veterinary Medicine of the Faculty of Veterinary Science of the University of Thessaly enables the graduates to register and attend postgraduate studies in all educational foundations all over the world. However, it does not provide the right of direct registration for official European Veterinary specialization. In order to acquire a veterinary specialization, the graduates must hold additional, relevant to the veterinary profession and specialization skills.

The Faculty of Veterinary Science gives the following opportunities for postgraduate education.

• Preparation of a doctoral dissertation for Doctoral Degree after a study of at least three years. The PhD diploma is the highest academic title, which is awarded by the University.

• Master of science program, after a two-year attendance, which conducts the Master of Science diploma in the scientific discipline 'Aquacultures Pathological problems of farmed aquatic organisms'

• Program of Veterinary specialization, after a three-year training, in the official European veterinary specializations 'Health Management of Small Ruminants', 'Veterinary Dermatology' and 'Health of Aquatic Organisms'. The title of European veterinary specialization is the highest veterinary professional title.

• Program of clinical or laboratory postgraduate training, its duration up to 12 (or in special occasion 24) months.

PhD DIPLOMA

The faculty of Veterinary Science provides PhD Diploma, after studies of at least three years duration. In the Faculty 46 PhD candidates are studying, who indulge in various cognitive fields. The cognitive fields and the specific issues, which are considered in the doctoral research, caver the entire spectrum of cognitive disciplines of the Academics of the Faculty. The PhD studies in the Faculty of Veterinary Science, do not require fees. Objectives of the program of PhD studies are the training of PhD candidates in the process of scientific research and the promotion of scientific knowledge within a specific cognitive field. Each program includes the literature review, the collection of facts in the field or/and the conducting of experiments and eventually, the writing and submission of the doctoral thesis, along with the announcement and publication of the research findings.

The selection of PhD candidates is realized by the Assembly of the Faculty, based on the academic and professional performance of the interested applicants. For the supervision of the PhD candidate, a supervisor Professor is designated and two other scientists who compose the three-member advisory committee. All the details of study- drawing up of PhD thesis are defined from the Regulation of PhD studies of the Faculty of Veterinary Science. The examination of PhD thesis, which must promote the science, is realized with oral exams in front of a seven-member selection board.

The PhD Diploma corresponds to level 8 of the National Qualifications Framework, to level 8 of the European Qualifications Framework and to level 3 of the Framework for Qualifications of the European Education Area.

MASTER of SCIENCE PROGRAM

The Faculty of Veterinary Science deploys a MSc program and provides MSc in 'Aquaculture Pathological problems of farmed aquatic organisms', after studies of four semesters. Director of the MSc program is professor F. Athanasopoulou. In the Faculty, 7 postgraduate students attend the program. The fees for the attendance of the MSc program of the Faculty of Veterinary Science are 3600 €. Objective of the MSc program is the specialized training of veterinarians and graduates of various geotechnical or other applied sciences, in the wider field of aquacultures (management of aquatic organisms and aquatic environment, prevention and treatment of diseases, improvement of final products of aquacultures). The program includes: (a) complete series of courses, experiments, and demonstrations, (b) series of informative lectures from distinctive scientists and aquaculture business executives, (c) visits in production facilities, public or laboratory laboratories and companies of relevant activities and (d) drawing up of MSc thesis. The selection of the postgraduate students is realized from the Assembly of the Faculty based on their academic and professional performance. All the details of the study are defined from the Regulation of Postgraduate Studies. The postgraduate students are examined with written examinations at the end of each semester and with evaluation of their dissertation at the end of their studies.

The Master of Science corresponds to level 7 of the National Qualifications Framework, to level 7 of the European Qualifications Framework and to level 2 of the Framework for Qualifications of the European Education Area.

EUROPEAN VETERINARY SPECIALISATIONS

The Laboratory of Ichthyology and Ichthyopathology is officially recognized from the European Board for Veterinary Specialization - *EBVS* and the European College of Aquatic Animal Health - *ECAAH* as official centre of specialization and provides training in European veterinary specialization 'Aquatic Animal Health'. After the completion of specialization, the title *DipECAAH* is awarded.

The Clinic of Obstetrics and Reproduction of the Faculty is officially recognized from the European Board for Veterinary Specialization - *EBVS* and the European College of Small Ruminant Health Management - *ECSRHM* as official center of specialization and provides training in European veterinary specialization 'Health Management of Small Ruminants'. The specialization of one veterinarian has already been completed, which successfully passed the relevant exams and awarded the title *DipECSRHM*; currently three veterinarians are specialized.

The Clinic of Medicine of the Faculty is officially recognized from the European Board for Veterinary Specialization - EBVS and the European College of Veterinary Dermatology - ECVD as official centre of specialization and provides training in the European veterinary specialization 'Veterinary Dermatology'. After the completion of specialization, the title *DipECVD* is awarded; currently two veterinarians are specialised in the Faculty.

The objective of the specialization programs is the advanced training and the specialization of the veterinarians in specific veterinary disciplines and the gain of knowledge, in order to practice as specialized veterinarians. In all specializations, the duration of training is three years.

The selection of interns is realized by the education committee of the relevant European College, based on their academic and professional skills and the interview outcome. All the details of the specialization procedure are determined by the rules of European Committee for Veterinary Specializations and from the regulation of education of the relevant European College. The specialization award is completed after successful written and oral exams in English language, in front of the exam committee of the relevant European College.

PROGRAM of CLINICAL or LABORATORY POSTGRADUATE TRAINING

In the Faculty of Veterinary Science a Program of Postgraduate Clinical or Laboratory Training is carried out. This program regards all the spectrum of scientific disciplines of the

academics of the Faculty. Usually, the duration of the postgraduate training is twelve months, even though, in specific occasions and under certain circumstances, it can vary up to 24 months. Currently, within the Faculty, 7 veterinarians are trained in various scientific disciplines. The attendance of the Program of Postgraduate Clinical or Laboratory Training of the Faculty of Veterinary Science does not require fees.

The objectives of a program of postgraduate training is the provision of postgraduate clinical or laboratory expertise, the provision of specific knowledge, the information about the most modern scientific data and the training in search, evaluation and application of the modern scientific data. The program includes mainly clinical or laboratory practice or combination of both, along with attendance of lectures, participation in tutorials, writing of scientific articles e.t.c.

STUDENT CONCERN

STUDENT STATUS

The student status is acquired with the registration in the University and lasts for the time period, during which the students remain registered in the registers of the Faculty.

During their studies, the students qualify a series of benefits of student concern (academic identity, reduced ticket in transports, board, housing allowance). Some of the benefits of student concern apply to the total of students, undergraduate and postgraduate, whereas some others apply only to those students which fulfill particular conditions. In the University of Thessaly a special office for the special service of students regarding issues of student concern operates. Furthermore, relevant information is provided from the Secretary of the Faculty.

BENEFITS of STUDENT CONCERN

All the benefits of student concern are quoted in detail in the web pages of the Department of Student Concern of the University of Thessaly. Also, within the same pages, there is information about the procedures which must follow the beneficiaries of various benefits and the necessary documents in order to receive various benefits. The relevant electronic address is: http://www.uth.gr/students/student-welfare.

TRANSFER of STUDENTS

The transfer of students between the two Faculties of Veterinary Medicine of the state (University of Thessaly and Aristotle University of Thessaloniki) are allowed according to the current legislation.

Further information and clarifications on the procedure of submission request and the relevant necessary documents are provided by the Secretary of the Faculty.

STUDENT SERVICES

In the University of Thessaly operates a special service ('Prosvasi') in order to provide information and support to the students with special educational needs or/and disabilities.

The relevant information is provided in detail at the site of the service 'Prosvasi'. The electronic address is : http://prosvasi.uth.gr.

In the University of Thessaly operates a special service which provides councelling to students with any type of troubles (i.e., issues regarding the studies, problems regarding the student life). All the relevant facts are quoted in detail on the webpage with electronic address : http://www.uth.gr/students/symvouleutiki.

STUDENTS ASSOCIATIONS

Students Association of the Faculty of Veterinary Science of the University of Thessaly

The Students Association of the Faculty of Veterinary Science of the University of Thessaly was founded in 1996, has its seat in Karditsa and is the official collective body of undergraduate students of the Faculty.

The objectives of the Association are the assurance of the students right, the culture of aspiration of freedom and democracy, the free exchange of ideas and the efforts to improve and promote the Faculty of Veterinary Science and the veterinary profession. The Association operates based on its statute.

Στο Σύλλογο δικαιούνται to register the undergraduate students of the Faculty, except those which are civilian or military officers. The higher body of the Association is the Assembly of its members. The association is managed by a seven-member administrative board, which results after elections. Furthermore, the proper function of the association is accomplished through the students – delegates of each year of study, which are elected from the students of each year separately.

International Veterinary Students Association Thessaly

H International Veterinary Students Association (IVSA) is a non-trade and nonprofit union, which utilizes the potential and affection of veterinary students at their scientific discipline. It was founded at early 1950's in Denmark for the promotion and application of veterinary skills, education, and knowledge worldwide.

The IVSA Thessaly was founded in 2003 and re-activated at 2011, aims at the provision of educational opportunities at all fields of veterinary science. This is accomplished through the cooperation with other veterinary or student bodies, to support the students of the Faculty of Veterinary Science of the University of Thessaly to communicate with other students and to attend educational programs all over the world. IVSA Greece was founded at 2012with the synergy of IVSA Thessaly and IVSA Thessaloniki.

The IVSA Thessaly supports visit programs of veterinary students, through which the opportunity of practice in public or private veterinary foreigner services is provided, resulting in the exchange of knowledge and experience with foreigner students and eventually the expansion of knowledge and skills. Also, the IVSA Thessaly organizes many

events and in annual basis co-organizes (with IVSA Thessaloniki) the Pan Hellenic Congress of Veterinary Students, which takes place alternately in Karditsa or in Thessaloniki.