# AVMA COUNCIL ON EDUCATION SELF-STUDY REPORT

# UNIVERSITY OF LIFE SCIENCES

# FACULTY OF VETERINARY MEDICINE

# LUBLIN, POLAND

# 2015

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COMPONENTS OF THE REPORT:



APPENDICES

**12.1. ORGANIZATION**
Standard 1. Organization

**History of the University:**
The Faculty of Veterinary Medicine dates back to 10 October 1944. The following four faculties were established at that time: Natural, Agrarian, Medical and Veterinary. In the 1944/45 academic year the first two years of studies started with 160 students representing different levels of education gained at pre-war veterinary universities. As early as 1945, the examination board conferred the first 7 diplomas of veterinary surgeon. In April 1946, 13 basic departments appeared; some of them often shared with the other faculties of the new university and were located in different parts of the city. In 1955, the Faculty became part of the newly established Higher School of Agriculture renamed as the University of Agriculture in 1972, and in 2008 as the University of Life Sciences in Lublin.

12.1.1. *Provide a college mission statement for the undergraduate, DVM, or equivalent program. The college mission statement must address:*
*the overall teaching, research, and service commitment,*
*the commitment to undergraduate education,*
*the commitment to provide instruction and clinical opportunities for students in a wide variety of domestic species, including food animal, equine, and companion animal, and*
*the commitment to excellence in program delivery.*

**1. Objectives and Mission Statement**
Over the 70 years of its existence, the Faculty has continued working on its objectives and tasks which were formalized by the Faculty of Veterinary Council on 25 November 2010 when the main objectives and tasks were presented as " The Faculty Mission".
This document is presented below:
The University of Life Sciences in Lublin and its faculties have **3** fundamental objectives expressed in their mission statement.
**Education**:
a. theoretical and practical education of students in the field of basic science – preclinical, clinical and food of animal origin hygiene in order to prepare them for professional work both in Poland and abroad.
b. educating the Faculty graduates in order to deepen and supplement their knowledge (specializations, postgraduate courses for practicing surgeons etc.)
c. international exchange of teachers and students in order to transfer knowledge and technology.
**Scientific Research**:
a. conducting scientific and development research of which the results are consequently applied in veterinary medicine in animal disease prevention, monitoring and therapy
b. integrating research activity of human and veterinary medicine dealing with genetic, metabolic, cancerous and infectious diseases with working out and using animal diseases models.
**Veterinary Application in public service:**
a. providing veterinary services and veterinary health care of farm animals, other livestock and companion animals in the scope and form defined in the regulations concerning animal health care units and according to the ethical principles of a veterinary surgeon
b. monitoring safety of food products of animal origin
c. preventing zoonoses.
The Faculty of Veterinary Medicine accomplishes these objectives through:
"Preparing well-qualified vet. surgeons who can use their knowledge and skills to improve animal health care, strengthen the importance of their profession and protect the environment."
**"**Serving local community and national society to solve problems of animal health care and human health protection through education, scientific discoveries and their application."
These objectives of the Faculty of Veterinary Medicine are determined by the Dean's Board and members of the Faculty Council.

12.1.2. *Identification of the body that accredits the university and the current status of accreditation*

The quality of education of the faculty is evaluated on two levels; university and national. The national level is represented by the State Accreditation Committee, an independent institution, operating under a system of higher education in Poland for the improvement of educational quality. The primary objective of the Commission is to assist Polish public and private universities in building educational standards for the best

practice as applicable in the European and global academic area. The State Accreditation Committee pursues its mission by making compulsory quality assessments of education and formulates an opinion on applications for permission to offer university studies. The Commission's concern is that evaluation under the applicable law should leave the scope for initiatives promoting innovative teaching and high education quality open. The Commission makes the evaluation of various study courses every five years. So far, the Faculty has gone through two national accreditations in 2002 and 2007; the last getting the permission to educate for the next 8 years. The assessment of a given Faculty by the Commission is preceded by the preparation of a detailed self-evaluation report in accordance with the guidelines of the Accreditation Commission. The second stage of evaluation is a 2-day working site visit by faculty committee members, during which they inspect classes, lectures and tutorials, and discuss the terms, conditions and quality of education with the science and teaching staff, the college dean and students. At the same time, the committee reviews and examines the records of the course of study. Particular attention is paid to the functioning of the internal quality assurance system in education, which should guarantee a good quality of professional training, and a graduate profile that meets the requirements of national and European standards. After the visit, the committee draws up a report with the final decision and justifications, which is sent to the University and Faculty. A quality policy system exists at the university, introduced by the decision of the Rector on 01/04/2001, and an internal system of quality assurance, introduced by the Senate, No. 37/2008-2009 dated 24.04.2009. The quality policy makes the entire university undergo regular audits under the ISO 9001 quality management. From an organizational point of view the university's Vice Rector for Student Affairs and Teaching controls this system centrally. The Regulatory Units are the Senate Committee on Quality Assessment of Teaching and Learning, and Faculty Committees for the Evaluation of Training and Program Boards.

12.1.3. *Provide a flow chart indicating the position of the college of vet. med. in the university structure and show lines of authority and responsibility, and give the names and titles of principal university administrative officers related to the college.* **See appendix 1-1.**

**Basic organization units of the University of Life Sciences in Lublin (ULSL):**

-The Faculty of Agrobioengineering
-The Faculty of Veterinary Medicine
-The Faculty of Biology and Animal Breeding
-The Faculty of Horticulture
-The Faculty of Production Engineering
-The Faculty of Food Science and Biotechnology
-The Faculty of Agricultural Sciences in Zamość

**Details of the Faculty**

University of Life Sciences in Lublin
Name of the Faculty: Faculty of Veterinary Medicine
Address: 20-950 LUBLIN, ul. Akademicka 13
Telephone: (+ 81) 445-65-65
Fax: (+ 81) 445-60-06
Website: www.weterynaria.up.lublin.pl
E-Mail: dziek.wet@up.lublin.pl
Title and name of head of the Faculty:
Prof. Dr. hab. Stanisław Winiarczyk

Competent authority overseeing the Faculty.

| | |
|---|---|
| Rector | Marian Wesołowski, Prof. D Sc. |
| Vice-Rector for Scientific Research & International Cooperation | Stanisław Baran, Prof. D Sc. |
| Vice-Rector for Personnel & Investment Funds | Andrzej Borowy, Prof. D Sc. |
| Vice-Rector for Student Affairs & Education | Krzysztof Gołacki, Prof. D Sc. |

**Principal university administrative officers related to the faculty**

| | |
|---|---|
| Administrative Director (Chancellor) | Grażyna Szymczyk, M Sc. Ing |
| Administrative vice-Director | Bartłomiej Orzechowski, M Sc. Ing. |
| Bursar | Ewa Walkowska, M Sc. |

*12.1.4. Provide a flow chart of the organizational design of the college listing names, titles (deans, associate / assistant deans, directors, departments heads, etc.), academic credential, and assignments of the college administrators.*

The Faculty is run by the Dean. The Faculty Council, being the highest collegial organ and the scientific core of the Faculty, is responsible for the statutory functioning of the Faculty.

The authority of the Dean, the Vice-Deans and the Faculty Council is described in the University statute:

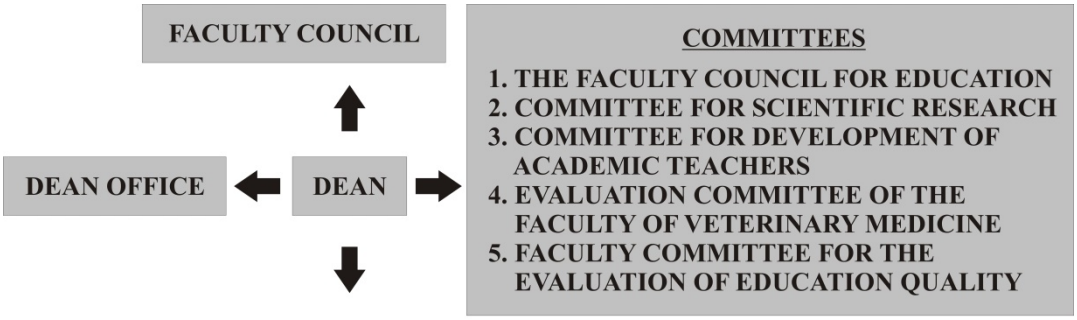
The Dean runs the Faculty, especially:

1) represents the Faculty outside
2) calls and chairs meetings of the Faculty Council except for meetings assessing his activities
3) presents the Faculty Council with matters which require investigation by this organ
4) assures the completion of the Faculty Council resolutions
5) establishes the scope of the Vice-Dean's activities
6) appoints the Dean's committees and the Dean's representatives
7) distributes the Faculty financial resources according to the rules established by the Faculty Council
8) supervises the activities of the Faculty units
9) takes indispensable actions for the proper functioning of the Faculty
10) takes care of abiding the law, safety and order within the Faculty
11) establishes a detailed timetable of classes at the Faculty
12) distributes educational classes among the Faculty's units
13) takes decisions concerning educational cooperation with other faculties and interfaculty units
14) is the superior of all the staff of the Faculty, and the superior and guardian of the Faculty students and doctoral students
15) takes care of welfare and living standard needs of students and doctoral students
16) makes decisions concerning the Faculty activities not reserved for other University authorities or the Administrative Director

The election of the Dean and Vice-dean is performed by the Election Committee appointed by the Faculty Council. The candidates who possess the title of Professor or habilitated Doctor can be appointed for the position of Dean or Vice-Dean. The term of office of the Dean and Vice-Dean lasts four years from Sep. 1st till Aug 31st. The same person can be elected only twice.

The Dean directs and represents the Faculty. He is the superior of the staff and students of the Faculty. He takes care of abiding the law, safety and order within the Faculty. The Dean undertakes decisions relating to Faculty activities, not reserved for other University authorities or the Administrative Director.

**Organizational chart of the Faculty of Veterinary Medicine**




**DEPARTMENTS**

1. DEPARTMENT OF ANIMAL ANATOMY AND HISTOLOGY
2. DEPARTMENT OF PATHOLOGICAL ANATOMY
3. DEPARTMENT OF BIOCHEMISTRY
4. DEPARTMENT OF ANIMAL PHYSIOLOGY
5. DEPARTMENT OF EPIZOOTIOLOGY AND CLINIC OF INFECTIOUS DISEASES
6. DEPARTMENT OF FOOD HYGIENE OF ANIMAL ORIGIN
7. DEPARTMENT OF PRECLINICAL VETERINARY SCIENCES
8. DEPARTMENT AND CLINIC OF ANIMAL SURGERY
9. DEPARTMENT AND CLINIC OF ANIMAL INTERNAL DISEASES
10. DEPARTMET AND CLINIC OF ANIMAL REPRODUCTION
11. INSTITUTE OF BIOLOGICAL BASES OF ANIMAL DIESEASES

*THE FACULTY STRUCTURE*

- **Department of Animal Anatomy and Histology –** Head Jadwiga Jaworska-Adamu, Prof., PhD.

Sub-Department of Animal Anatomy - Head Marcin Arciszewski, Assoc. Prof., PhD.

Sub-Department of Histology and Embryology - Head Jadwiga Jaworska-Adamu Prof., PhD.

- **Department of Pathological Anatomy –** Head Wojciech Łopuszyński, Assist. Prof., PhD.
- **Department of Biochemistry -** Head Marta Kankofer, Prof., PhD.
- **Department of Animal Physiology -** Head Iwona Puzio Assist. Prof., PhD.
- **Department of Epizootiology and Clinic of Infectious Diseases –** Head Stanisław Winiarczyk Prof. PhD.
- **Department of Food Hygiene of Animal Origin –** Head Krzysztof Szkucik Prof., PhD.
- **Department of Preclinical Veterinary Sciences -** Head Ryszard Bobowiec Prof., PhD.

Sub-Department of Pharmacology - Head Cezary Kowalski Prof., PhD.
Sub-Department of Pathophysiology - Head Ryszard Bobowiec Prof., PhD.
Sub-Department of Toxicology and Environmental Protection - Head Jose Luis Valverde Piedra, Assoc. Prof., PhD.

- **Department and Clinic of Animal Surgery -** Head Piotr Silmanowicz, Prof. PhD.

Laboratory for Radiology and Ultrasonography – Head Piotr Dębiak, PhD.

- **Department and Clinic of Animal Internal Diseases -** Head Jacek Madany, Assist. Prof. PhD.

Sub-Department of Clinical Diagnostics and Veterinary Dermatology - Head Iwona Taszkun Assist. Prof. PhD.
Sub-Department of Internal Diseases of Farm Animals and Horses – Head Krzysztof Lutnicki Assoc. Prof. PhD.
Sub-Department of Internal Diseases of Pets – Head Jacek Madany, Assist. Prof. PhD.

- **Department and Clinic of Animal Reproduction –** Head Władysław Wawron Prof. PhD.

Sub-Department of Andrology and Biotechnology of Animal Reproduction - Head Leszek Krakowski Prof. PhD.

- **Institute of Biological Bases of Animal Diseases –** Head Prof. Andrzej Wernicki

Sub-Department of Avian Diseases - Andrzej Wernicki, Prof., PhD. Care taker.
Sub-Department of Fish Diseases and Biology - Head Antonina Sopińska Prof., PhD.
Sub-Department of Veterinary Microbiology - Head Grażyna Ziółkowska Prof., PhD.
Sub-Department of Parasitology and Invasive Diseases – Head Krzysztof Tomczuk, assist. prof. PhD.
Sub-Department of Veterinary Prevention - Head Andrzej Wernicki, Prof., PhD.

*12.1.5. Describe the role of the faculty, staff, and students in the governance of the college and list the major committees of the college, and their appointment authority.*

The Council of the Faculty of Veterinary Medicine is a collegial body of the University of Life Sciences in Lublin. The council meets on a regular basis once a month, but also holds other meetings when dissertation procedures for Dr. hab. degrees are passed. The Council is composed of:

1. Dean as chairman
2. Vice-deans (2 persons)
3. University teachers holding the position of Professor and others teachers with the degree of Dr hab., holding the position of Associate Professor (36 persons)
4. Elected representatives of other teachers employed at the Faculty (16 persons)
5. Elected representatives of the student body of the Faculty (11 persons)
6. Elected representatives of other employees of the Faculty other than university teachers (5 persons).
7. Elected representatives of postgraduate studies (1 person)
8. Representatives of trade unions (2 persons)

**Committees at the Faculty of Veterinary Medicine:**

1. The Faculty Council for Education - Head: Zygmunt Wrona Prof. PhD
The Program Board supervises the educational course at the Faculty.
2. The Committee for Scientific Research – Head: Ryszard Bobowiec Prof. PhD
The Committee for Scientific Research is an advisory body of the Council and it supervises scientific research.
3. The Committee for the Development of Academic Teachers – Head Grażyna Ziółkowska Prof. PhD
The Committee for the Development of Academic Teachers supervises the personnel policy concerning scientific staff of the Faculty of Veterinary Medicine.
4. The Evaluation Committee of the Faculty of Veterinary Medicine – Antonina Sopińska Prof. PhD
5. The Faculty Committee for the Evaluation of Education Quality –Zbigniew Grądzki Prof. PhD

**Intrafaculty, extrafaculty and intercollegiate units**

Intrafaculty, extrafaculty and intercollegiate units are organizational units that deal with publishing, education, and cultural-economic and service activities of students and staff of the University.

An intrafaculty unit is an organizational unit of the University, which offers educational service to other units. They can also conduct scientific studies as well as deal with educating staff. The activities of intrafaculty

and extrafaculty units can be paid according to obligatory financial rules. The creation and transformation of intra- and extrafaculty units is performed on the basis of the Senate resolutions by an ordinary majority of votes.

Intercollegiate units and other units are established on the grounds of communication between Rectors, and the agreement of the Senate, in order to realize research and didactic assignments of the University and other units, especially colleges and other research agencies, both Polish and foreign.

The intrafaculty, extrafaculty and intercollegiate units are:

1. Main Library
2. Department of Physical Education
3. Department of Foreign Languages
4. Central Apparatus Laboratory – the unit which performs specific analytical service to all Faculties of the University
5. Publishing Editorial Board
6. Audio-visual service

**Publishing activity of the Faculty of Veterinary Medicine**

Scientific staff of the Faculty of Veterinary Medicine can publish the results of their scientific experiments in such periodicals as **Medycyna Weterynaryjna** and **Annales UMCS** (section DD). A yearly list of publications of the Faculty staff is presented in *Excerpta Veterinaria.*

***- Indicate the involvement of the veterinary profession and general public in the running of the Faculty.***

The Faculty cooperates with the Veterinary Board, the Veterinary Institute in Puławy and the veterinary administrative departments of public health. An example of this is the participation of the employees of the Department of Epizootiology and Infectious Diseases in the fight against avian influenza. Specialists from different individual units outside the university are invited to classes with students who are provided with the specialists' practical knowledge of veterinary medicine.

Agreements with private medicinal plants are signed for the purposes of practical training. Doctors use a private veterinary practice in postgraduate courses organized by the Faculty. Doctors of veterinary clinics assist physicians in private practice with laboratory diagnosis and imaging as well as exchange experiences.

## 12.2. FINANCES

Standard 2: finances

12.2.1. *Complete Tables A and B for the past five years and analyze the trends for each category*.
See appendix 2-1 College expenditures and revenues

**General information**

This veterinary school does not have an independent financial operation separate from the total University financial model. This Faculty is incorporated under the central financial system of the university on a par with other Faculties**.**

The University of Life Sciences operates on a calendar year based budget, from Jan. 1$^{st}$ to Dec. 31$^{st}$; different from the academic year. The money awarded by the Ministry of Science and Higher Education to the University is based on annually prepared proposals for funding statutory activities, including the planned expenditure for the next year and reports of the money spent in the previous year. It is a condition for the grant by the Ministry for the current year. The amount of funding is dependent on the Faculty category, which is awarded by the Polish Ministry of Science and Higher Education for 4 years. This amount is based on only the results of scientific research. Currently the Faculty has the second grade category of funding. The Ministry granted money is spent on salaries and educational-scientific activities including administrative support.

The University's money is divided among the Faculties based on knowledge of their statutory activities, and is established by the University Senate resolution (No. 39/2012-2013 Univ. Life Sci. in Lublin on February 22$^{nd}$, 2013 on the allocation of grants to finance the maintenance of the research potential of the faculties of the University of Life Sciences in Lublin with later modifications (Senate resolution no. 12/2014-2015). Apportionment is to be based primarily on the number of academics and faculty categories established by the Ministry of Science and Higher Education.

Financial resources under the statutory activity are transferred directly from the Ministry to the Dean of the Faculty. Part of this is allocated for overall university expenditure, such as computing connections maintenance, in accordance with the above resolution. The remaining amount is divided by the Dean of the Faculty as follows: 85% of the statutory activity funds shall be granted to individual units for their achievements in scientific research based on an algorithm calculated on the total sum of points from papers published by the unit. The remaining 15% of resources used to support specific projects remain at the Dean's disposal.

12.2.2. *Comment on the strengths and weaknesses in revenues over the past five years*.

Money for teaching comes from Ministerial grants (84.5±1.02%) and our own resources (8.1±0.42% deduction from student fees) that is dependent on the number of students and a cost consuming coefficient determined by the Min. Sci. & High. Education. The current one for Veterinary students is "3 ". The University services amounted to 6.1±0.83% of the total revenue over the past 5 years.

The money for teaching is divided among the units on the basis of the number of teaching hours in a particular unit. Financial resources are allocated for the purchase of small equipment and to cover transportation to farms, meat plants and drug companies as well as chemical reagents and other materials necessary for the exercise.

The overall University resources also cover student social activities and student support.

**Weakness**

1. There is a modest activity of the Faculty and staff in applying and obtaining research grants. Overhead costs of 30% paid to the University under a grant significantly reduces faculty motivation in obtaining grants.

2. Others, doing service and laboratory work for the pharmaceutical industry yield only 0.5-1% of the revenue during the last 5 years.

12.2.3. *Provide a comprehensive trend analysis of revenue sources that have supported the professional teaching program over the past five years (graphs or other visual presentations would be helpful)*

In 2010 approx. PLN 122.000 were spent on international exchange, including more than 58.000 on participation in scientific conferences; about 40,000 on research fellowships and approx. 15. 000 on employee training. During following 4 years similar activity was observed.

In 2010, a grant to the Faculty under the statutory activity accounted for about one third of the total University grant. In following years the figures were similar. There were 11 ongoing research projects financed by the National Center for Science in the amount of PLN 490,000. In following years 2011-2014 there were 34 projects amounting to 1735186 zl. Within the past five years the amount of granted research projects decreased from 11 in 2010 to 6 in 2014. This reflects an income decrease from 23.0 to 10.1% of the total university income from research projects. (see appendix 2.3.).

There is also an opportunity for the university to make requests to the Ministry for financing purchases of equipment above PLN 500,000.

Distribution of funds within the units is based on policies set by the heads. Most frequently, they are divided based on research topics pursued by a group of employees. Expenditure of these funds for the implementation of scientific topics is based on a law on public procurement and tendering. Reports of the spent money are made annually to the accounting office of the University.

Student's fees. Full time students do not pay for tuition. Students of evening courses pay fees to the University. These are students who were accepted to the program but with background deficiencies or lower admission scores. These students have classes in the afternoon or evening. Currently, this is a group of 60 students in the first three years of studies. The fee charged these students is decided by the Rector of the University.

12.2.4. *Describe how revenues over the past five years have impacted the college's ability to provide a contemporary professional teaching program and ancillary support services*

Over the past 5 years the college revenues did not change substantially. However, it is seen a continuous tendency toward getting additional funds for teaching and academic activity. The donation from ministry for research increased by 4.28% to be higher in comparison to the past times. Moreover, the general financial policy of the ministry and the University is becomes much more flexible, for instance the overheads of the services for industry are negotiable. The university was successful in getting money for erecting new library and the innovative centre of pathology and therapy for the faculty of Veterinary Medicine. Actually the faculty has a comprehensive central laboratory able to provide extensive research services. It integrates clinical laboratories working on the current needs to establish a wide and attractive range of services for external customers including research for the pharmaceutical and bio-veterinary industry. All of these activities and facts positively influence research and teaching work.

12.2.5. *Compare the percentage of hospital income to total hospital operational costs*

Money for teaching comes from Ministerial grants (80-85%) and our own resources. Clinical and diagnostic work is estimated at 15-20% of revenue. This revenue is seasonally variable and is spent on purchases of tools and clinical equipment and on payment for on-call physicians' 24-hour accessibility at clinics (on Sundays and holidays). These are not covered by the University.

Bills for services are the clinical income. Fees are set by the heads of individual clinics based on the average prices in the area.

12.2.6. *Describe anticipated trends in future revenues and expenditures*

A high priority of the Faculty in the coming years is to integrate the functioning of clinics for pets and farm animals in order to generate higher income. The Faculty already possesses new equipment and procedures that attract the costumers both of pets and farm animals. The new facilities will serve as a good environment to attract pharmaceutical companies, which are interested in preclinical and clinical trials.

## 12.3: PHYSICAL FACILITIES AND EQUIPMENT
## Standard 3: Physical facilities and equipment

**General information**

The Faculty of Veterinary Medicine owns the *Collegium Veterinarium* building located at 12 Akademicka Street, Lublin. The lectures given in the building include basic and preclinical subjects. Clinical subject lectures are given in the veterinary clinics located at 30 Głęboka Street. The *Collegium Veterinarium* building is situated approximately 300 m from the Veterinary Clinics and 150 m from the Rector's Office of the University of Life Sciences and the Dean's Office of Veterinary Medicine.

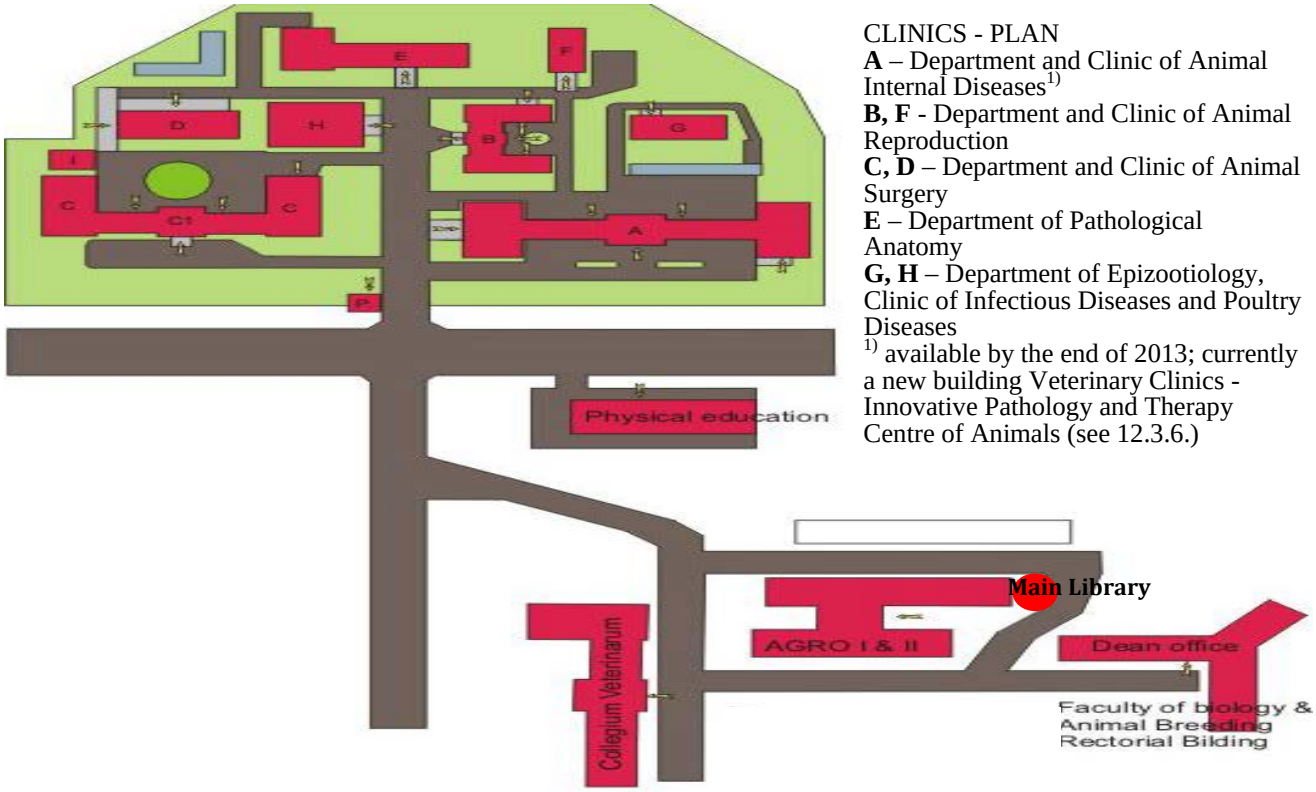
12.3.1. *Provide a brief description of the major functions of, or activities that take place in the facilities used by the college in fulfilling its mission*

**The facilities are used to teach the following subjects:**

Biology, Cell Biology, Biochemistry, Biophysics, Chemistry, Histology and Embryology, Animal Anatomy, Topographic Anatomy, Animal Physiology, Microbiology, Immunology, General and Veterinary Genetics, Veterinary Epidemiology, Pathophysiology, Veterinary Pharmacology, Pharmacy, Toxicology, Environmental Protection, Biostatistics and Methods for Documentation, Forensic Medicine, Agronomy, Breeding and Rearing of Farm Animals, Technologies in Animal Production, Feed and Food Hygiene, Dietetics, Ethology, Welfare and Animal Protection, Veterinary Prevention, Veterinary Economics, Imaging Diagnostics, Clinical and Laboratory Diagnostics, Pathomorphology, General Surgery and Anaesthesiology, Parasitology and Invasiology, Diseases of Dogs and Cats, Diseases of Horses, Diseases of Farm Animals, Andrology and Artificial Insemination, Poultry and Bird Diseases, Fur Animal Diseases, Fish Diseases, Beneficial Insect diseases (Bee diseases).

21.3.2. *Provide an area map that indicates the principal facilities of the college and describe distance and travel time to off-campus facilities.*

12.3.2. CAMPUS — PLAN




CLINICS - PLAN
**A** – Department and Clinic of Animal Internal Diseases[1)]
**B, F** - Department and Clinic of Animal Reproduction
**C, D** – Department and Clinic of Animal Surgery
**E** – Department of Pathological Anatomy
**G, H** – Department of Epizootiology, Clinic of Infectious Diseases and Poultry Diseases
[1)] available by the end of 2013; currently a new building Veterinary Clinics - Innovative Pathology and Therapy Centre of Animals (see 12.3.6.)

12.3.3. *Describe the college's safety plan and facilities management plan including mechanisms documenting compliance*

The chancellor of the university is responsible for the administration of the college facilities. The college's safety plan and facilities management plan are performed according to polish legal regulations (building regulations, ministerial ordinances, work safety rules, fire protection rules) as well as university rules, which take into account the specificity of the faculty work (laboratory classes, veterinary clinic service). All laboratory rooms are equipped with a first aid cabinet, fire extinguisher, fume hood and disinfectants**.**

According to these rules periodical controls are performed by specific services, and the results of the control is written in the building book. The building book is attached to every building from the beginning of exploitation.

Inspections are carried out by accredited specific services from the university technical section and from outside the university. The inspection concerns:

- the technical status of the buildings,
- the technical status of the ventilation devices and devices used for environment protection,
- the technical status of the gas and ventilation installation,
- the status of the wiring and anti-thunderbolt system, the status of the electrical devices,
- work safety – evaluation of the professional risk at the work units, employee instruction, collective safety devices, individual safety devices, measurements of harmful agents in the working environment, marking of the dangerous areas, compliance with the rules concerning the protocol for infectious biological materials,
- the status of fire protecting devices and fire extinguishers in the buildings, marking of the evacuation and fire exits.

A protocol is elaborated after each inspection. The inspections concerning wiring and the technical status of the buildings are registered in the respective building book.

12.3.4. *Describe the adequacy (pertains to all facilities used by the college whether on-campus or off-campus).*

12.3.4.a. *Classrooms, laboratories and other instructional environments and related equipment.*

Please see **Appendix 3-1** for a detailed description of classrooms, laboratories and other instructional environments. Also please review these spaces on the attached power point presentation accompanying this self-evaluation.

## 12.4. CLINICAL RESOURCES

### Standard 4. Clinical resources

Healthy and ill animals of various domestic and exotic species must be available for instructional purposes, either as clinical patients or provided by the institution. While precise numbers are not specified, in-hospital patients and outpatients including field service/ambulatory and herd health/production medicine programs are required to provide the necessary quantity and quality of clinical instruction.

It is essential that a diverse and sufficient number of surgical and medical patients be available during on-campus clinical activity for student clinical educational experience. Experience can include exposure to clinical education at off-campus sites, provided the college reviews these clinical experiences and educational outcomes. Further, such clinical experiences should occur in a setting that provides access to subject matter experts, reference resources, modern and complete clinical laboratories, advanced diagnostics and readiness confirmation (including necropsy). Such examples can include a contract arrangement with nearby practitioners who serve as adjunct faculty members and off-campus field practice centers. The teaching hospital(s) shall provide nursing care and instruction in nursing procedures. A supervised field service and/or ambulatory program must be maintained, in which students are offered multiple opportunities to obtain clinical experience under field conditions. Under all situations students must be active participants in the workup of patients, including physical diagnosis and diagnostic problem oriented decision making.

Medical records must be comprehensive and maintained in an effective retrieval system to efficiently support the teaching, research, and service programs of the college.

### 12.4. Clinical Resources

**12.4.1.** Complete Tables A, B, and C for the past five years and analyze trends for each species (category).

21.4.1. Complete Tables A, B, and C for the past five years and analyze trends for each species (category)

Table A

| Animal Species | Number of Patient Visits | Number Hospitalized | Number of Hospital Days |
|---|---|---|---|
| Bovine | 5820 | 32 | 98 |
| Canine | 12160 | 230 | 1120 |
| Caprine | 28 | 3 | 21 |
| Equine | 1120 | 510 | 2530 |
| Feline | 8280 | 183 | 510 |
| Ovine | 1426 | 1 | 10 |
| Porcine | 8254 | 10 | 60 |
| Caged Pet Birds | 2756 | - | - |
| Pocket Animals | 2956 | 232 | 638 |
| Avian Wildlife | 1080 | 820 | 367 |
| Other | 3257 | 34 | 72 |

Number of Patient Visits – total number of times the patient visits at the hospital (if Buffy visits the hospital 3 times this year, this would count as 3 visits.). Number Hospitalized – number of patients that were hospitalized. Number of Hospital Days – cumulative days that the total number of patients were hospitalized.

**Ambulatory/Field Service Program** (Corresponds with AAVMC Survey 23)

Table B

| Animal Species | # of Farm (site) Calls | # Animals Examined/Treated |
|---|---|---|
| Bovine | 486 | 5800 |
| Caprine | 6 | 120 |
| Equine | 268 | 1263 |
| Ovine | 14 | 1520 |
| Porcine | 23 | 8920 |
| Other | 186 | 2254 |

Number of Farm (site) Calls – total number of calls/visits made to farm/operations.
Number of Animals Examined/Treated – number of individual animals examined/treated.

**Herd/Flock Health Program**

Table C (Corresponds with AAVMC Survey 24)

| | **Herd/flock health programs provided through institution/state-owned animals** | | **Herd/flock health programs provided through privately-owned animals** | |
|---|---|---|---|---|
| | Please answer yes or no | # of sites | Please answer yes or no | # of sites |
| Dairy | Yes | 80 (5 place) | Yes | 2800 (12 places) |
| Beef Feedlots | No | | Yes | 1000 (4 places) |
| Cow-Calf | Yes | 20 (1 place) | Yes | 800 (14 places) |
| Small Ruminants | Yes | 200 (1 place) | Yes | 800 (4 places) |
| Swine | No | | Yes | 10050 (3 places) |
| Poultry | No | | Yes | 20000 (6 place) |
| Fish | No | | No | |
| Equine | Yes | 92 (4 place) | Yes | 250 (20 place) |
| Other | No | | Yes | 1360 (6 place) |

**12.4.2.** Describe and analyze the adequacy of normal and clinically ill animals (hospitalized, out-patient, field service/ambulatory and production medicine) and how they are used for the DVM teaching program.

The location of the Clinics in the city center is very convenient in relation to small animals, and there is no problem with ill large animals, because the University Clinic is equipped with transportation carriages .The Clinics ensure medical care for sick animals 24 hours a day, throughout the year. They also offer in-patient treatment to both small and large animals, which is not provided by a majority of private practice clinics. Animals receive appropriate outpatient care. Diagnosing cases will be done using modern methods: endoscopy, hematology and biochemistry, full cardiologic examination, diagnostic laparoscopy etc. Severe cases are hospitalized in a well-appointed hospital premises. The Clinic of the Faculty will also give you full assistance in the field of treatment of farm animals, horses and domesticated exotic animals (we are Cooperating with a mini-zoo). The Faculty has a fully equipped ambulance used for trips to farms. In all operations involving veterinary students, unique knowledge about the latest treatment standards based on advanced methods of diagnosis and therapy are acquire. Clinical cases are documented in detail in the form of a "medical history" rated by the teachers of the specialty.

**12.4.3.** Describe unique clinical educational resources or programs that enhance the educational mission.

Our faculty is committed to providing a personalized way for the development of veterinary students. For this purpose, a program of study has been arranged and carried out that emphasizes the good command of practical issues. Students have the opportunity to choose from a number of extra-curricular activities on.: endoscopy, geriatrics, animal behavior, diseases of small mammals, laboratory diagnostics. These classes are an extension and complement the compulsory classes. Students participate in internships (mandatory and voluntary) carried out in our clinics. Students develop their interests based on the activities of scientific circles (including .: diseases of small mammals, cattle diseases, diseases of horses). The Clinics have professional diagnostic equipment allowing for, among others, X-rays, ultrasounds and endoscopy. The Clinics also have an on-site la, which allows various types of tests: hematological, bacteriological, histopathological, immunohistochemical, endocrinological, biochemical blood tests, urine tests, smear tesst, and semen analysis.

The Clinics cooperate with local Animal Care Societies, the Animal Guard, and animal shelters, includes the provision of medical care for homeless dogs and cats, as well as sterilization of homeless female cats and both female cats and female dogs in shelters, prior to the adoption of these animals. The Dept. and Clinic of Animal Surgery cooperates with the Dept. of Environmental Protection of the Municipality of Lublin in the scope of providing medical care for sick wild animals and wild birds. Vet. students participate in all medical procedures and treatment related to the said animals, as a part of their clinical internship and practical classes on animals reproduction and surgery.

**12.4.4.** If off-campus clinical instruction sites are used regularly by multiple students, complete Table D and describe the planning, supervision, and monitoring of students; and contracting arrangements for non-institutional based faculty.

Table D

| **HOSPITAL** | Learning rotation (duration) | Surgical & medical facilities | Necropsy | Imaging | Diag. support services | Isolation | Intensive or critical care | Reference materials | Medical records |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |

Please provide a brief description of training and evaluation of faculty, levels of case management by the students, and assessment tools for measuring student progress for the remote site(s). Describe student access to content experts.

Students of the fifth and sixth year, participate in professional internships to be completed during the holidays. For two years, every year they have to take a two-week internship at the slaughterhouse and monthly practice in medical institutions. Each student independently applies for admission to the institution, they are private institutions. Students are required to conduct " practice notebooks" that are specifically studied by teachers. In addition, after the second year, students perform the so-called "animal husbandry practice" in a large farm. In case of problems, our department helps students find the right apprenticeship and traineeship places. Each student is required to serve rotations in the process of learning. Rotations take place at each clinic. Students are formed in groups of 5-6 persons. Rotations lasts 22,5 h at each clinic. During the rotations, students are trained how to use medical drugs, and gain experience in one day skills according to EAEVE (The European Association of Establishments for Veterinary Education). Students actively participate in diagnosis and treatment of clinical cases. Students are introduced to supporting diagnostic equipment, and care about animals in the hospital. Our clinics have 4 general surgical theaters for small animals, and two surgical theaters for farm animals. Two additional operating rooms are dedicated to specific tasks: ophthalmology and dental operating room. Students actively take part in autopsies. They are obligated to execute three autopsies per semester. The Department of Radiology provides medical imaging, which has digital X-ray and professional ultrasound equipment. It is also possible to perform X-ray imaging in farm animals. Ultrasound equipment is also available at each ambulatory room. The Faculty has quality diagnostic equipment: endoscopes, ECG, hi-tech laboratories: biochemical, hematological, serological, microbiological, molecular biology lab, a flowcytometry lab, proteomics lab (with mass spectrometry). Our Clinic provides intensive care. Oxygen therapy, dialysis, and deliver chemotherapy is available.

**Off-campus Sites**. If your program regularly uses off-campus sites for clinical education of students (excluding educational experiences that are attended sporadically by individual students), please provide the following information for each site. If certain services are not provided, please indicate where the students learn the required clinical skills. If your school/college does not use remote facilities, please do not complete the chart or respond to the requested information.

Table E

| Off-campus sites: Number & educational experience | Duration of rotation | Number of students per year | Faculty mentor approved (check) | | Off-site Evaluator | Written educational objective(s) (check) | | Educational outcomes assessed & student evaluations reviewed (check) | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Yes | No | | Yes | No | Yes | No |
| | | | | | | | | | |

The Vet. Clinic provides health care for cattle herds, pigs and horses based on agreements with animal farms owners. Vet. services include physical examination and preventive care for healthy animals, as well as medical consultation when needed.

The Dept. and Clinic of Internal Medicine provides medical support for cattle herds on three farms:

- “Agromarina” Farm in Kulczyn; (approx. 80 km)
- “Różanka” Farm in Różanka; (approx. 110 km)
- “Agrokompleks” Farm in Żółkiewka (approx. 40 km)

- and on horse farms:
- Stallion Depot Białka; (approx. 67 km),
- “Arizona" and Lubelski Riding Club in Lublin,
- “Wieża” Riding Club in Dominów; (approx. 12 km)
- “Drwal” Riding Club in Abramowice; (approx. 8 km)
- “Piker” Riding Club in Jakubowice; (approx. 15 km)
- “Pólko” Riding Club in Pólko; (approx. 14 km)
- „Wierzcholski” in Mełgiew (approx 40 km)
- „Ku słońcu” Solan - Urszulin (approx 7,5 km)
- Riding Club in Elizówka; (approx. 10 km)

**12.4.5.** Describe the involvement and responsibilities of professional students in the healthcare management of patients (and clients) in clinical programs of the college.

Students of the fifth and sixth years are involved in helping animals (both on site and during visits to farms), and customer acceptance. Conducting interviews, guiding patients to individual professionals (in obvious cases). Students keep detailed notes about the symptoms, diagnostic process and drugs used. This data is used in the evaluated of “histories of the disease," and work devoted to particular cases of the disease. Students take part in exercises at farms, fur farms, poultry plants and fish farms. They gaining unique knowledge taught by experienced veterinarians regarding clinical practice in a particular way. Students participate in learning specific diagnostic and therapeutic methods. All activities take place under the guidance of experienced veterinarians, with the titles of experts in the field. They are also academics and researchers. As a part of their clinical practical training, fifth year students participate in the examination of herds at cooperating farms.

The Dept. and Clinic of Reproduction and the Dept.of Epizootiology and Clinic of Infectious Diseases offer veterinary practice for fifth and sixth year students at the Univ. of Life Sci. Experimental Farm in Uhrusk (approx. 110 km), in the field of: gynecology, mammary gland diseases, andrology and infectious diseases. There are 183 milking cows and heifers, as well as a few bulls at students’ disposal. Students are allowed to work with farm animals during their internship in diagnosis pregnancy and examination of the reproductive system performed of cows by employees of the Dept. and Clinic of Reproduction.

The Dept. of Epizootiology and Clinic of Infectious Diseases is responsible for consultation, preventive treatment and treatment of sick animals, including: The Michałów Stable; (approx. 210 km), Stable in Kozienice; (approx. 86 km), The Janów Podlaski Stable; (approx. 145 km), Stallion Depot Białka; (approx. 67 km), Fur Animals Farm in Chorzelów; (approx. 175 km) and Apiaries of Agricultural School Complex in Pszczela Wola; (approx. 12km).

The Sub-Department of Avian Diseases conducts practical classes with students on the Broiler Chickens Slaughter Farm in Brzeziny (approx. 80 km).

Furthermore, as a part of extramural teaching, there are agreements concluded with other farms, where students have access to both healthy and sick animals, in order to gain experience in the field of animal production and veterinary practice.

After the fourth and fifth year respectively, students have a monthly summer practice in private clinics.

On the basis of agreements concluded with private clinics, abattoirs and meat packing plants, fifth year students have the possibility of taking additional practical training, aimed at improving their knowledge for meeting all necessary day one skill requirements.

**12.4.6.** Describe how subject-matter experts and clinical resources are integrated into clinical instruction.

Lecturers and teachers responsible for practical training in the field are veterinary practitioners, generally specialists. They are both scientists, which combines theoretical knowledge with practical knowledge, and are up to date with new trends in veterinary medicine. Many years of experience teaching makes that they are able to transfer knowledge effectively. Veterinary practitioners working in the Clinics are either species or disciplinary specialists who present a high level of theoretical and practical knowledge. Furthermore, our employees constantly improve their skills and raise their qualifications by means of didactic and research activity, internships held in the country and abroad, as well as participation in foreign and domestic conferences and congresses.

**12.4.7.** Describe the adequacy of the medical records system used for the hospital(s), including field service and/or ambulatory and population medicine. Records must be comprehensive and maintained in an effective retrieval system to efficiently support the teaching, research, and service programs of the college.

The department clinics use the modern system "Clinic XP". This is one of the best systems to keep records used in veterinary care. The system allows for quick and comprehensive searches of databases regarding patients, methods of treatment, additional tests performed and their results. This data is regularly used for clinical, educational, and scientific purposes. This program is the most popular program used by Polish practitioners.

The system is simple to use and largely reliable. A modern and integrated computer network and efficient hardware is a necessity. The system has access to the network, it is convenient to use by doctors, improves the quality of patient care. The system is optimized and updated timely, thanks to the supervision exercised by experienced specialists and service personnel of the software manufacturer company. The system has been selected on the basis of practitioners clinical experience.

**12.4.8.** Describe how the college has responded to increasing/decreasing clinical resources.

Increasing clinical resources has made it possible to extend the clinics offer for new diagnostic and therapeutic techniques. This happened for the benefit of patients, students and researchers in the fields of preclinical veterinary knowledge. Clinical resources extend closer cooperation with relevant departments such as: department of biotechnology or medical department. This has resulted in numerous publications with a high index of citations. The use of resources allows for a stable increase in the importance of the department and helps to improve its educational, clinical and scientific offer. The Faculty responded to decreasing clinical resources by signing agreements with practitioners in the field, farmers and other establishments connected with the State Veterinary Service, that enabled increased access of sick animals and professional help and assistance.

**12.4.9.** Describe the means used to maximize the teaching value of each case across the curriculum.
***Council on Education Policies and Procedures***

The teaching process is used to maximize the effect of education. Classes are taught by experienced practitioners who are also scientists. Teachers use presentations displayed on projectors during exercises, with detailed descriptions, photos and videos. Presentations are annually updated with new developments in the field of veterinary science. During exercise, students are also often in contact with a live patient, for example, in the study of endoscopic or surgical procedures performed by veterinarians of our clinics. There are also facilities that allow the transmission of live video from the operating room to the exercise room. It is possible to conduct clinical trials on animals permanently inhabiting our clinics (eg, cow, goat). During exercise, students become acquainted in a practical way with certain procedures, devices and diagnostic techniques by performing specific tasks. Everything is done under the guidance of experienced teachers. The development of the university computer network and creation of the university and individual department websites, contribute significantly to the facilitation and modernization of the teaching process. Within the department's website separate web pages of individual didactic entities were created, where all essential information concerning teaching students and students' self- teaching is placed. One can find detailed syllabi; subject matter of lectures, classes and practical classes carried out in the form of clinical internships on the website. Moreover, the didactic entities place information on their sub pages for self-education in the form of summaries of classes, multimedia presentations, descriptions of interesting clinical cases, as well as their own collections of photographs relating to physiology and organ pathology, microscopic histological and histopathological slides (http://www.weterynaria.up.lublin.pl/anatomia; http://www.weterynaria.up.lublin.pl/patologia).

Students have access to different links, which they should use during the learning process. Currently, due to the space availability problem the department has only one computer room with 10 stands, available to students 24 h a day at its disposal. Moreover, students can use a few university laboratories, in which there are 60 stands all together. However, the department realizes that the size of these resources does not meet the needs of the current number of students because of the outstandingly low ratio of the number of computers to the number of students (1: 80). Providing students with free wireless Internet appears to be a big help, as it enables them to utilize the network's resources at any time using their own computers. However, previous actions aimed at making teaching practical, were held by the imposed standards of teaching. The current standards, implemented in 2007, intend to introduce species clinical teaching in place of clinical disciplines, as it is to date. The strengthening of the practical clinical education will be achieved as recommended by the new teaching standard

by freeing the last term of studies from theoretical classes and devoting it entirely to improving practical clinical abilities as part of species internships. Students will be provided with the right number of clinical cases and dead animals for autopsy thanks to signing bilateral agreements with different subjects (animal farms, clinics and the like).

Recently the department initiated the implementation of a new method of teaching –"e-learning", which is designed to supplement the students' likelihood of self-education. The department is aware of certain restrictions of this system, which result from, for example: specificities of the practical vocational training based mainly on performing manual activities. Therefore, with reference to many basic and preclinical courses the method of e-learning can constitute a valuable supplement, or even an alternative acquisition of knowledge to traditional methods.

## 12.5. LIBRARY AND INFORMATION RESOURCES

Standard 5: Library and information resources

12.5.1. *Describe and comment on the adequacy of information retrieval and learning resources*

The new Main Library of the Life Sci. Univ. (http://www.bg.ar.lublin.pl) is located close to the building of *Collegium Veterinarium* and the Veterinary Clinics. The ML is an all-university unit, which serves didactic, educational and service purposes for students, faculty and staff. It is a source of information for agronomy, horticulture, animal sciences, veterinary medicine, food technology, agrarian business, agrarian technology, food industry machinery, biology, biotechnology and environment protection sciences. Additionally, the ML gathers information concerning human medicine, mathematics, Physics, chemistry and basic technologies. Moreover, the ML performs the function of Regional Centre for Agricultural Scientific Information. Located the library's building is the "University Press office". This office publishes books and scientific journals and among them electronic versions according to the open access principle. The library holds about 390 000 volumes of books, journals, and special collections. The ML offers access to about 55 000 books for veterinary medicine students and staff, and among them are textbooks and veterinary journals. The main library increases the collection annually and acquires several hundred volumes/units each year.

12.5.2. *Describe the academic credential(s) for the librarian in charge of the library*

The Vice-Rector for Personnel and Investment Funds is responsible for direct supervision of the ML. ML personnel includes the Head of the Library, Vice-Head, 11 senior librarians, 16 library assistants and 2 technicians. The Library staff co-ordinates all aspects of library functioning, including lending, cataloguing, documenting, interlibrary loans, proceeding of bibliometric data, acquiring new collections and maintaining the current resources (storing and renewing).

Marian Butkiewicz is the Head of the ML. He received his master's degree in history in 1982, doctor of Human Sciences in 1995. Mr. Butkiewicz has graduated a library-training course (improving organization of libraries, technical and economical information of science). He has also completed a post-graduate study in Records of Intellectual Property (University of Maria Curie Skladowska, Lublin 2012-2013). His professional interests are library databases and digital repository.

12.5.3. *Briefly describe the availability of learning resource support for faculty and students, including personnel*

The Loan Department is open from Monday to Friday from 8 a.m. to 7 p.m. and on Saturdays from 8 a.m. to 2 p.m.

The standard service of the library includes providing access to:

The Lending Department – which houses Polish and foreign literature connected to the scientific and didactic work carried out by the academic faculty. In general, the library is thematically concerned with particular branches of life sciences. Students can access Polish textbooks related to the courses conducted by the Faculty or recommended by their teachers. The users have free access to the library book collection, which is organized according to the classification of the USA Congress Library. Help from the library staffs is available if needed. A majority of the book collection is available for lending for a 180-day period. The journals and some books are available only in the library. Recent items can be found on shelves while the archives can be searched in a computer catalogue and ordered. The Interlibrary Lending Department – the library borrows materials from national libraries when academics and postgraduate students place an order. The library lends its own collection to other libraries. The library has about 800 periodicals, journals and books related to Veterinary Medicine with

on-line access in full text analysis or abstracts. All computers located in student buildings and dorms are connected to University servers that allow students to reach full library services. Publications and journals that are unavailable on-line may be borrowed through the Interlibrary Loan from national libraries.

12.5.4. *Describe the methods of access to library information resources for faculty and students when they are on and off campus*.

All printed versions of books and journals may be ordered either personally in the Lending Department or via the Library's web site. Every user has its own Internet account with a unique login and personal password. All computers located on the premises of student buildings and dorms are connected to University servers and help the students reach full library service. Pick-up of electronically ordered materials is usually on the next working day. If ordered articles are available in electronic format they can be sent to personal e-mails. At the beginning of the academic career, every student receives library training and a library card.

The ML offers access to Internet, library catalogues, book and electronic journal collections, norms and databases from 84 workstations for students and faculty staff. Moreover, there is free Wi-Fi Internet access for students and staff.

Since 1995 the library has been using the integrated system VTLS, and since 2003 its improved version VIRTUA, which allows users to access the catalogues at any place in the world. The introduction of the VPN (Setup BG UP) system enables library account holder's access to all electronic sources from outside the campus, which are licensed by the ML.

Training courses for students and young staff providing information on how to use library information resources, are organized by the library staff accordingly to needs.

12.5.5. Describe current plans for improvement

The library plans to create a free access university electronic achieve for students and staff. Secondly it plans to provide access to the "Subito" service, which enables the search of journal catalogues from the German, Austrian, and Swiss land libraries and allows article copies of the journals to be ordered, which are not available in our library. Thirdly, the library would like to adapt the conference hale for video conferencing.

**12.6 STUDENTS**

**Standard 6. Students**

The new main library provide the students and employees with a modern approach to the use of hard copies, journals, books, electronic databases and articles available through direct authorized access to publishers. The ML offers more space for self-learning. The number of study stations appear to be sufficient since the majority of students choose their own study areas. Usually the choice is influenced by free access to the Internet. The internet access to all electronic resources of ML is of key-importance. Self directed learning and closely related e-learning, are forms of education that have been recently introduced in FVM. Each department inserts information for students regarding lectures, syllabus and practice materials (http://www.biochfiz.up.lublin.pl). For instance, the Department of Histology has microscope photos of histology sections (http://histologia.eswi.pl/index.php/slideShow/1) and the Department of Pathological Anatomy offers a digitalized collection of histopathological images on-line (http://histopatologia.up.lublin.pl). Power point presentations for student didactics from the SubDepartment of Veterinary Parasitology are available at the link: http://www.up.lublin.pl/988/. Power point presentations for student didactics form the Department of Epizootiology and Clinic of Infectious Diseases are available on the website at the link: http://www.up.lublin.pl/934/. Student access to patient clinic records is also planned.

*12.6.1. Complete Tables A, B, C, and D, and analyze trends.*

A. Veterinary Medical Program-

| **Class** | Year 2010 Regular/Evening | Year 2011 Regular /Evening | Year 2012 Regular /Evening | Year 2013 Regular /Evening | Year 2014 Regular /Evening |
|---|---|---|---|---|---|
| First-year | 144 / 63 | 150 / 60 | 122 / 90 | 102 / 91 | 112 / 85 |
| Second-year | 124 / 53 | 119 / 62 | 141 / 56 | 115 / 71 | 102 / 78 |
| Third-year | 122 / 65 | 120 / 62 | 140 / 54 | 141 / 66 | 119 / 68 |
| Fourth-year | 153 | 164 | 186 | 176 | 204 |

| | | | | | |
|---|---|---|---|---|---|
| 5-year | 176 | 183 | 159 | 171 | 171 |
| 6-year | 155 | 141 | 142 | 149 | 165 |
| Graduated | 157 | 139 | 176 | 143 | 145 |

B. Interns, Residents, and Graduate Students (enter each person in only one category) per year for the last five years

| Department | # Interns- | # Residents- | # Resident-MS | # Resident-PhD- | MS | PhD- |
|---|---|---|---|---|---|---|
| 2010 | 0 | 5 | 0 | 0 | 0 | 12 |
| 2011 | 0 | 7 | 0 | 0 | 0 | 16 |
| 2012 | 0 | 6 | 0 | 0 | 0 | 8 |
| 2013 | 0 | 7 | 0 | 0 | 0 | 10 |
| 2014 | 0 | 5 | 0 | 0 | 0 | 13 |

In Poland, no residential module courses are offered. The postgraduate specialty training program for veterinarians is realized in the form of courses organized by The National Council of Veterinary Specialization.

C. DVM Students per year for last 5 years

| Academic Year | DVM | | |
|---|---|---|---|
| | Total | *Min | % Min |
| 2010 | 157 | - | - |
| 2011 | 139 | - | - |
| 2012 | 176 | - | - |
| 2013 | 143 | - | - |
| 2014 | 145 | 1 | 0,69 |

D. Other educational programs

Complete the following table describing enrollment for each of the last five years:

| Year | ACTIVITIES | | | |
|---|---|---|---|---|
| | Additional Clinical Year Students* *Number enrolled* | Veterinary Technician Program *Number enrolled* | Undergraduate Programs *Number enrolled* | Other *Number enrolled* |
| 2014 | 0 | 0 | 0 | 0 |
| 2013 | 0 | 0 | 0 | 0 |
| 2012 | 0 | 0 | 0 | 0 |
| 2011 | 0 | 0 | 0 | 0 |
| 2010 | 0 | 0 | 0 | 0 |

* represents students admitted for only the clinical year from other accredited and non-accredited schools

The number of graduate DVM students has increased by 30% from 120 students in 2006 to 157 in 2010. The number of graduate students in PhD programs has remained stable over the last five years. The number of full-time students from 2010 to 2012 increased from 157 to 176, and is 145 in 2014.

*12.6.2 Provide a listing of student services. These services must include, but are not limited to, registration, testing, mentoring (advising), counseling, tutoring, peer assistance, and clubs and organizations.*

**Registration**

The Vice-Dean for Students Affairs directs an office in the Dean's Office responsible for registration of students in all obligatory and facultative teaching courses during all years of the curriculum. The University Office of Student Affairs and Didactics is responsible for the scheduling of lectures and classes**.**

**Athletic facilities**

In their leisure and extracurricular time and during PE classes, students are provided with extensive opportunities to develop their physical fitness and to do collegiate sports in various sports sections. This is possible thanks to our modern University sports and recreation center (9600 m2 in size). It consists of, among others, a sports hall, an Olympic swimming pool, a gym, a fitness club, a climbing wall, a combat sports hall and others. Students can improve their sport skills in the following sections: athletics, horseback riding, swimming, basketball, volleyball, kickboxing and others. During the holiday season the resort lake Piaseczno, which is just 50 km from Lublin, has a sailing section. This facility organizes summer camps and professional sailing combined with the option of obtaining sailor and skipper licenses. In the winter the University organizes ski trips to attractive winter recreation resorts. The various sports enjoy popularity and interest every year, this includes competitive athletic meetings in the first year of study.

**Clubs and organizations**

Within the University there is also a horseback riding club. A group of students actively participate in the Roztocze Horse Guard (they perform social functions for the protection of the Roztocze National Park). The University boasts of having its own song and dance assembly "Jawor" as well as presenting an academic choir with a diverse repertoire, both which are extremely successful at home and abroad. The University has a congress center with a concert hall that holds 670 seats and facilities allowing not only for the organization of symposia, but also cultural events, concerts, exhibitions and previews. The regional structure of the International Associations of Veterinary Medicine students (IVSA) is very active. It organizes many scientific meetings, where guest–lecturers hold lectures on selected problems in the science and veterinary practice. IVSA is also the co-organizer of scientific meetings held regularly under the name Clinical Tuesdays, serving to enhance the popularization of clinical expertise. There is also the Academic Sports Association, the Union of Rural Youth, the Student Magazine "Radar", and the Association of Students of Life Sciences.

**Healthcare**

Students have the right to benefit from free healthcare based on their insurance. The student (academic) clinic located on campus provides medical services in all major specialties. The use of hospital services is based on nationwide rules. Additionally, for the purposes of illness prevention, students are subject to annual mandatory medical examinations.

The students are covered by health insurance and basic insurance against accidents (NNW) in ongoing activities. This insurance is valid for the duration of the academic year and during the realization of summer practice. In addition, for the period of summer practice students are insured by the university for accidents that may occur during operation and during travel and arrival at the practice. In addition to these insurance forms, additional insurance required of the students when classes begin at the clinics.

*12.6.3. Provide a description of the testing/grading system (scoring range, pass levels, pass/fail).*

See Appendix 6-1.

The University of Life Sciences uses the following grades: very good (5.0), good plus (4.5), good (4.0), satisfactory plus (3.5), satisfactory (3.0), failed (2.0).

*12.6.4. Provide academic catalogue(s) (or an electronic address for this resource) and freshman/upper-class orientation materials*

At this time, the University and Faculty do not have academic catalogues written in English. Freshman/upper-class orientation courses are also not offered. However, it must be noted that the university office is working on the translation of catalogues, which will probably be available with the start of the English program.

The following document, http://bip.up.lublin.pl/regulamin-studiow.pdf, contains all necessary information for students about the general university rules, student duties and privileges, the organization of the didactic process, the description of the grading system, conditions necessary for graduation, student vacations, awards and scholarships, administrative fees and e-learning general rules. All the information concerning the rules of doctoral studies conducted in Polish and English are also provided on the website http://www.up.lublin.pl/doktorant/.

*12.6.5. Describe the system used on an ongoing basis to collect student suggestions, comments, and complaints related to the standards for accreditation*

The university has a quality policy initiated by the Rector's decision of 04.01.2010. The main objective is to pursue a policy of quality at the University, the priority of which is to educate students of all levels. The quality of education refers to such issues as: constant improvement of qualifications; research and teaching; providing the highest possible level of education and services; and continuous improvement of the education quality in accordance with the development strategy of the University. In addition, the university's internal system has been introduced to ensure the quality of education (Senate Resolution No. 37/2008-2009).

An important element of the system to improving the quality of education, is student evaluation of teaching staff, conducted every two years. This evaluation is anonymous, and is performed by specialized equipment and the Testico-Sona company computer software, thus allowing multi analysis of the results. The introduction of such an evaluation effectively mobilizes the staff to improve their teaching skills, which ultimately leads to the improvement of the quality of education.

*12.6.6. Describe current plans for improvement in resources for students*

The Faculty plans to open an Office for Foreign Student Affairs (OFSA). The employees of OFSA will coordinate all aspects of foreign students services. The Faculty also plans to hire a new officer who will coordinate the Faculty's information policy. One of the duties of the new officer will be creating informative brochures and a handbook for students in the professional veterinary curriculum, etc.

## 12.7. ADMISSION

### Standard 7. Admission

The Faculty of Veterinary Medicine at the University of Life Sciences in Lublin (ULSL) provides two options to study veterinary medicine: full time and full time paid by the students. The Rector in consultation with the Council of the Faculty of Vet. Medicine establish the maximum number of those admitted to the full and part time studies each year.

The Faculty Council has the right to give the title of Doctor in Veterinary Medicine after completing the appropriate procedure. The academic admission requirements are laid down in the internal regulations of the University (Act No 47/2008-2009 Senate of the Univ. of Life Sci. in Lublin of 13.05.2009). The rules and procedures concerning the admission of candidates to the full-time third degree study (doctoral study, Ph.D) in the Univ. of Life Sci. in Lublin 2010/2011 are based on the executive regulations issued by the Ministry of Science and Higher Education dated 19.12.2006 on the postgraduate research program realized by the university organizational units (with the later changes of 09.02.2009). Since 2012 the resolution has been amended by the Senate of the Univ. of Life Sci. in Lublin- New resolutions No. 44/2011-2012 of 20.04.2012 on amending, Resolution No. 40/2010-2011 on the principles and procedure of candidates for full-time students of the third degree (PhD) at the University of Life Sciences in Lublin in the academic year 2012/2013 and No. 39/2013-2014 from 11.04.2014 on amending the resolution on the rules and procedures of candidates for full-time doctoral studies conducted in Polish at UP in Lublin in the academic year 2014/2015.

The candidates for Ph.D. students are conventionally required to complete graduate studies with a GPA of 4 or above, they are qualified by the Commission of having certified the required level of competency in English and shown relevant academic and research abilities and interests. Degree candidates should have a predisposition for research activities performed under the supervision of a full time Faculty member. The postgraduate studies last for four years when a Ph.D. student is obliged to realize a research project and attend the English, statistics and philosophy courses. Besides, students are required to participate in the specialist lectures delivered by the Faculty members and visiting guests, and take part in seminars and practical classes. The Ph.D. students must report on the successive stages of research progress and prepare papers related to their main area of research and related fields.

The doctoral studies education terms are defined by the Regulation of the Minister of Science and Higher Education dated. 24.10.2014r position 1480, and the Regulation of the Minister of Science and Higher Education on the education of doctoral studies at universities and research units dated 01.09.2011. position 1169.

The total length of schooling under the entire program of the course of study is equivalent to 45 to 60 point Credits, the credits include 20 to 30 points of elective courses that develop direct professional activity skills, which compose of at least 15 hours.

Doctoral programs provide opportunities for:

1) conducting independent research, including research outside the unit conducting the training;
2) scientific cooperation in research teams, including international;
3) the preparation of a scientific publication by a doctoral student in the form of a book or at least one scientific paper accepted for publication in a peer reviewed scientific journal of a range of national and in-reviewed report of the international scientific conference or public display of works of art;
4) The implementation of the program of study, including compulsory, optional and apprenticeship preparation for doctoral examinations and preparing a doctoral thesis under the supervision of the promoter or the promoter and the assistant promoter
that;
5) participate in the life of the scientific community in the country and abroad. Dimension practices in the form of conducting classes for doctoral students conducted in the university must be no less than 10 and no greater than 90 hours per year

A PhD study in English for foreigners has been carried out at the Faculty of Veterinary Medicine since 2014.

*12.7.1. State the minimum requirements for admission*

Polish students must pass the national *Matura* exam in order to be able to apply for higher education courses in Poland and elsewhere. This exam is taken on the completion of high school. Foreigners can apply for a place in the full-time and part time studies if they have appropriate knowledge of the Polish language as stated by a suitable certificate. In addition they must have legalized certificates or documents that they have obtained education equivalent to the Polish Matura abroad.

*12.7.2. Describe the student selection process, including measures to enhance diversity*

The students apply for (full and part time) studies via the internet to the Faculty of Veterinary Medicine. The requirements that determine a candidate's admission are given on the Internet (https://rekrutacja.up.lublin.pl). The candidate is required to pay an entrance fee, established by the Rector, to assign an individual registration account.

The Rules of the recruitment to full and part-time studies are currently revised by Senate resolutions

- Resolution No. 44/2013-2014 date 30.05.2014 on the number of full-time students financed from the state budget for the academic year 2014/2015
- Resolution No. 45/2013-2014 date 30.05.2014 on the principles and procedures for admission of candidates to the first year of stationary and non stationary first and second degree and graduate degree at UP in Lublin in the academic year 2015/2016

The proper conduct of the recruitment process and supervising faculty selection commission proposed by the faculty of Veterinary Medicine and appointed by the Rector and the Senate of the University of Life Sciences in Lublin is composed of the Dean of the faculty and student or clinical vice-deans, and the secretary-researcher employed at the faculty of veterinary medicine.

The requirement procedure is based on the results of the subjects taken on the Matura exam and those that are required by the Faculty of Veterinary Medicine as displayed in the table below:

Obligatory subjects and number of ranking points as criteria for admission in 2010.

| Obligatory subjects | Maximum number of ranking points in basic Matura | Maximum number of ranking points in extended Matura |
|---|---|---|
| - modern foreign languages | 130 | 200 |
| - chemistry | 100 | 200 |
| - biology | 100 | 200 |
| Minimum number of points /total/ - recruitment 2010 | Regular studies | Evening studies |
| | 400.4 | 308.0 |
| Minimum number of points /total/ recruitment 2011 | Regular studies | Evening studies |
| | 392.2 | 308 |
| Minimum number of points /total/ - recruitment 2012 | Regular studies | Evening studies |
| | 400 | 255,6 |
| Minimum number of points /total/ - recruitment 2013 | Regular studies | Evening studies |
| | 407.2 | 282 |
| Changes in the system of admission in 2014 | | |
| Obligatory subjects | The Basic level | The extended level |
| Biology | The matural result x 1 | The matural result x 2 |
| Chemistry | The matural result x 1 | The matural result x 2 |
| Minimum number of points /total/ - recruitment 2014 | Regular studies | Evening studies |
| | 278 | 130 |

| **PROFILE: WETERINARY MEDICINE** | | | |
|---|---|---|---|
| Subjects included in the secondary school qualification | | multiplier | |
| | | Basic level | Extended level |
| Obligatory subjects | biology,<br>chemistry | 1,0<br>1,0 | 2,0<br>2,0 |

In the case of the Old Mature Exam taken before the year 2005, the calculation procedure is carried out using the formula in the table below.

| Grading scale 1- 6 | | Grading scale 2- 5 | |
|---|---|---|---|
| Mark | Point numbers | Mark | Point numbers |
| 2 (capable) | 20 | 3 (sufficient) | 40 |

| | | | |
|---|---|---|---|
| 3 (sufficient) | 40 | 4 (good) | 70 |
| 4 (good) | 60 | 5 (very good) | 100 |
| 5 (very good) | 80 | - | - |
| 6 (excellent) | 100 | - | - |

During calculation the total amount of points used are the following multipliers: a. modern foreign language (maturity exam grade) - 1,3; b. the required selected subject (evaluation of maturity exam) – 4; c. other subjects (evaluation of school-leaving certificate) – 2; d. In the case of the veterinary faculty the first required/select subject (evaluation of maturity exam) – 2; e. In the case of the veterinary faculty the second required/select subject (evaluation of school-leaving certificate) – 1.

*12.7.3. List factors other than academic achievement used as admission criteria.*

The selection procedure is completed by announcing the decision about a student's admission. Based on test results, a ranking list is prepared, which states the order in which students are accepted according to the Rector's regulations for the Faculty of Vet. Medicine.

The full-time studies are free of charge for UE citizens. The part time and evening students pay, with a fee per term established by the Rector in Lublin. The candidates accepted to these part time studies are required to pay the fee for the next 6 terms. After that time they are moved to full-time studies and they are freed of charges for the next 5 terms.

Applicants should have confirmation of validation of the Matura exam issued by the Department of Education appropriate for their country. This validation is not necessary if a candidate has a diploma of International Matura or European Matura (Regulation MNiSzW of 12 December, 2006). Foreigners can also apply for admission to the studies just like Polish citizens, but they must pay.

Candidates, who are accepted to a 5.5 years masters' program must present the following documents:

- entrance application; - Matura certificate or its equivalent
- secondary school certificate; - three photos; - a copy of an ID;
- confirmation of the entrance fee; - application for an electronic student ID;
- declaration of the chosen language; - medical certificate;

Another possibility to be accepted to the Veterinary School is to take part in one of the contests organized among secondary school students. The winners or those who get to the finals of the Contests of Agricultural Knowledge and Abilities, Biology, Chemistry, Physics, Computer Science, Mathematics are accepted on the basis of official documentation that states their achievements from the above secondary school contests (Senate of University of Life Sciences in Lublin Resolution 74/212-13 suppl. 3). There are no mechanisms of enhancing diversity of applicants. However according to Senate of University of Life Sciences in Lublin resolution nr 39 2010/2011, the winners and finalists of the Contests of Agricultural Knowledge and Abilities, Biology, Chemistry, Physics, Computer Science, Mathematics may be admitted without a selection (recruitment) procedure only once in a year of passing Matura on the rules for admission of winners and finalists in question. There is a resolution for Future Years No. 46/2013-2014 date 30.05.2014 on the rules of admission of winners and finalists on the central level and competitions in University of Life Sciences in Lublin.

12.7.4 *Complete Table A.*

| YEAR | STATE RESIDENTS- | | NON-RESIDENTS- | | CONTRACT STUDENTS- | | TOTAL regular and contract | |
|---|---|---|---|---|---|---|---|---|
| | A/P* | O/A** | A/P | O/A | A/P | O/A | A/P | ~~O~~/A |
| 2014 | 14 | 7 | - | - | 339/90 | 93 | 1446/220 | 1446/220 |
| 2013/14 | 7 | 7 | 35/- | 35/35 | 392/80 | 88 | 1634/210 | 1634/210 |
| 2012 | 3 | 3 | 32/- | 32/32 | 330/80 | 89 | 1500/197 | 1500/197 |
| 2011 | 1 | 1 | 16/- | 16/16 | 369/70 | 73 | 1550/161 | 1550/161 |
| 2010 | 1 | 1 | 6/- | 6/6 | 315/60 | 61 | 1430/231 | /211 |

*A/P = Applications/Positions Available, **O/A = Offers Made/Acceptances

The number of candidates registered by the electronic recruitment system of the Faculty of Veterinary Medicine in 2010 was as follows:

- regular studies 1112
- evening studies 318

Faculty of Veterinary Medicine-the total number of students on day 2014-11-30

- Total regular studies students – 867 - Total part time studies students – 231

The number of candidates for regular studies and evening studies has been regulated by the Rector of ULSL's Regulation, which is announced for each academic year (see Table A).

*12.7.5 Describe current plans for assessing the success of the selection process to meet the mission of the college*

The current system of admission is mandatory in all state universities in Poland, however the faculty council is planning to impose a psychological examination as an additional condition for entering veterinary studies. Each year the faculty has more than 1300 candidates, until now out this amount 180 students were selected and more or less 120-130 graduated in time.

12.7.6. *Describe your policies and procedures for admitting transfer students who will receive a degree from your institution, and state the number of transfer students admitted per year for the last five years*

Foreign transfer students can study on the basis of an international agreement made with foreign countries by the university. This agreement is made on the basis of the Polish minister's and Rector's decision and addresses the method of payment, or no payment and scholarship benefits. This will be determined as either scholars of the country they were sent from or as the scholars of the university. The foreign scholars of the government of the Republic of Poland are freed from the fees and they receive the scholarship on the basis of a two-way agreement, stated by separate regulations (MNiSzW Regulation of 12 Oct. 2006). During the last five years about 50 students were transfer from other faculties.

**12.8. FACULTY**

**Standard 8. Faculty**

*Faculty numbers and qualifications must be sufficient to deliver the educational program and fulfill the mission of the college. Participation in scholarly activities is an important criterion in evaluating the faculty and the college. The college shall give evidence that it utilizes a well-defined and comprehensive program for the evaluation of professional growth, development, and scholarly activities of the faculty.*
*Academic positions must offer the security and benefits necessary to maintain stability, continuity, and competence of the faculty. Part-time faculty, residents, and graduate students may supplement the teaching efforts of the full-time permanent faculty if appropriately integrated into the instructional program.*

**See appendix 8-1 for tables A, B, C and D.**

*12.8.1. Complete Tables A and B, and assess the strengths of the faculty and support staff in fulfilling the college mission.*

A majority of the academic staff is veterinarians, which assures the appropriate fulfillment of the faculty mission. In accordance to national rules the current number of staff are is sufficient to deliver the required educational program. They have a chance to deepen their professional (17 specializations), pedagogic (courses) as well as language (courses) qualifications but it is not a duty. Support staff is involved in preparing the didactic process in a sufficient way.

*12.8.2. State the current number of academic faculty (head count) who possess credentials as listed in Tables C and D.*

124 persons

*12.8.3. Assess the challenges for your college in maintaining faculty numbers and quality.*

Relatively low salaries in public universities are a weakness and can be the reason of losses and decreased interest in recruitment. Moreover, this situation results in the involvement of some members of staff in private veterinary practice apart from the University. Faculty introduced a yearly special supplement for outstanding performance in scientific activity, but it does not seem to be enough to increasing motivation. On the other hand a university position is relatively stable, which is very important in the situation of a high percentage of unemployment on the market.
At present academic positions are overloaded with duties. Working time should be divided into science, didactics, clinical practice and administration but the load of work within each category is high and in consequence it is difficult to maintain quality. A good solution would be the introduction of positions directed in majority to science or didactics or clinics instead of a mixture of all.

*12.8.4. Provide information on the loss (what discipline/specialty) and recruitment of faculty (Table A).*

The rules for employing and firing university teachers are stated in the Law of higher education dated 27 July 2015 prepared by the Minister of Science and Higher Education, Statute of the University of Life Sciences. In addition, the Senate's Regulations and the Rector's Ordinance are all used in employing, firing and

evaluating faculty (Senate Regulation no 71/2012/2013 dated 17th May 2013 about the periodical evaluation of academic teachers employed at the University of Life Sciences; Senate Regulation no 13/2013-2014 dated 31st Jan 2014 about rules for the evaluation of scientific achievements of persons applying for university professor, ordinary professor or adjunct within the University of Life Sciences as well as minimal criteria which should be filled).

In order to create a position of full-time professor, associate professor and visiting professor the Rector of the Life Sciences University, on the request of the Dean of the Faculty, is placed with this responsibility. The criteria for new positions are described in above-mentioned documents, and are mainly related to retirement or the increase in the number of didactic hours. The candidates for these positions are chosen by means of an open competition announced by the Rector of the University of Life Sciences in Lublin. Losses are mainly connected with retirement or requests of teachers. Any other reasons are very seldom.

*12.8.5. Provide a concise summary of promotion and tenure policies, and the policy to assure stability for non-tenured, long-term faculty.*

There are two parallel and related paths of promotion. One is regulated by the national law of higher education dated 27th July 2015 and gives 8 years for preparing a doctoral thesis and 8 years for preparing habilitation work. The final step is the title of full professor obtained from the President of Poland. The National Commission for titles and scientific degrees controls this process. The second path is closely related to the first one and is regulated by university laws (Statute of the University and Senate regulations). This path provides positions related to scientific degrees, and university law defines the criteria for obtaining a particular position (bibliometric parameters for scientific papers, achievements in didactics and administrative work). Every two years each teacher is evaluated by a faculty commission for temporary achievements and gets positive grades for further work. For those who fail there is a period of 2 years for improvement. In the case of a lack of progress, the Rector is obliged to fire such person. The exception in regard to the frequency of evaluation – 4 years instead of 2, concerns full professors. University law defines the criteria for positive grades. Positive grades and obtaining appropriate titles and scientific degrees guarantee the promotion in university positions and gratification in salaries.

The retirement age is 65 for women and 67 for men. In the case of persons holding the title of full professor this age can be prolonged to 70 years regardless of sex.

In accordance to national rules the faculty possesses well-defined (national law and local documents) and clear programs for the evaluation of professional growth and development as well as scientific activities of staff members.

Non-tenured, long-term positions are very seldom and there is no special politics to assure their stability.

Teachers with temporary contracts are evaluated every two years in order to assure their stability and to implement corrective action if necessary.

*12.8.6. Provide an estimate of the weight assigned to promotion/tenure and or compensation for teaching, research, service, or other scholarly activities.*

Yearly prizes for scientific activity, didactic activity or administrative activity are awarded. The university commission establishes criteria, but the budget is usually limited.

A yearly special supplement for outstanding performance in scientific activity is also awarded for the 6 best persons within the faculty. The selection is created on a ranking list based on a number of points gathered for publications and their IF.

There are no special promotions for outstanding performance in teaching. Academic teachers are evaluated by students every two years but no profits are earned by the best teachers, or by the worst.

Additionally irregularly the University may get money from the Ministry of Science and Higher Education for salary increases for all employees.

*12.8.7. Briefly describe faculty professional development opportunities available in the college/university.*

**1.** There is a continuing education program, including 17 veterinary specializations, in which the Deanship has been given priority to faculty.

Authorities. Continuing education is realized in the form of courses held from 2 to 5 times per semester. The duration of such study depends on the kind of specialization, and ranges between 3 and 6 semesters. After completion of the study and passing the exam, participants obtain the national specialist competence. They have a strong commitment to offer professional training through courses developed to upgrade and improve the core body of knowledge of veterinary surgeons as well as pursue their in-career professional development. The Faculty takes active involvement in the training courses, both as participants and trainers.

**2**. Faculty staff can participate in the courses organized by the public institutions managed by The Training Center of the Veterinary Institute in Puławy.

**3.** The research workers of the Faculty are members of The Polish Society of Veterinary Sciences whose regular monthly meetings provide occasion to present lectures and share professional experience with the practitioners of veterinary medicine who are members of the Society as well, take part in meetings and thus, encompass new ideas and development. The educational programs cover health issues of farm and companion (pet) animals. They focus on new diagnostic procedures and therapy of viral, bacterial and parasitic diseases. An educational program associated with the EU funds promotion of agricultural sciences and in that, the development of veterinary medicine has drawn more and more attention.
**4.** The Faculty host or co-organize scientific congresses with the participation of foreign visitors, which gives good opportunity to share new ideas and hypotheses.
**5.** Active staff can take part in conferences (lectures, research, presentations), however, the application must be accepted by the head of the department and by the Department of Science. The expenses of taking part in scientific meetings may come from inside sources (DS, grants, and even didactic sources), European programs, including Erasmus, company sponsorship, and national or private contacts.

In 2014 staff members participated in 21 scientific events (overall costs around 52 000 PLN equal to 12 500 Eur) and 7 didactic oriented (overall costs around 10 000 PLN equal to 2500 Eur) scientific events. The staff took part in the European program of exchange ERASMUS. Twenty staff members took advantage of this opportunity in 2014. The University of Life Sciences has 60 Erasmus agreements. O these agreements 19 are signed with European Faculties of Veterinary Medicine. Staff can choose between teaching assignment and training. Stay usually lasts 5 working days and is utilized for 5 didactic hours or training related to new laboratory methods or clinical procedures.
**6.** There are numerous opportunities for attending scientific long-stay training outside the University financed by the Ministry of Higher Education and other Polish and foreign institutions. Any employee attending scientific training may apply for a sabbatical leave for up to 12 months. Moreover, the Vice-Rector for staff and Dean posses a small budget for financing courses and training on the individual request of staff members.

*12.8.8. Describe current plans or major changes in program direction that would be affected by faculty retirements, recruitment and retention.*

The personnel policy of faculty is stable. The number of staff members is closely related to the number of didactic hours. Any losses connected to retirement are replaced smoothly by new staff members and have no influence on the study program.

The number of technical staff is related to the number of teaching staff. As these two numbers are relatively stable faculty does not face major changes.

*12.8.9. Describe measures taken to attract and retain a diverse faculty.*

Since 2014 persons that posses a title other than veterinary surgeon can obtain the title of doctor of veterinary sciences. This attracts persons with different competencies for applying for a job. Interdisciplinary teams are recommended in scientific laboratories but often only partly recommended in the didactic process.

*12.8.10. Describe programs for on-campus delivery of curricular content by individuals not employed full time by the institution (other than occasional guest lecturers), including subjects taught. Estimate the percentage of core curricular content delivered in this way.*

The majority of teaching obligations are covered by academic staff of the Faculty. At present 9 persons who are not University staff are involved in teaching veterinary students. Out of these 9, 3 persons do not posses a diploma of veterinary medicine. These persons are involved in teaching humanistic subjects – philosophy, psychology and ethics. The remaining persons are responsible for specialized lectures within surgery, infectious diseases, andrology and public health protection, and are from other Polish Faculties of Veterinary Medicine.

Topics related to Animal Husbandry are taught by teachers from the Faculty of Biology and Animal Breeding of our University.

*12.8.11. Describe the role of interns, residents, and graduate students in teaching and evaluating veterinary students.*

The position of intern and resident does not exist at the University and Faculty. Graduate students occasionally participate in teaching. It can be an individual decision of persons responsible for a particular subjects. Doctoral students participate actively in the teaching process as it is their duty to have a minimum of 90 didactic hours per year.

**12.9. CURRICULUM**
**Standard 9: curriculum**

**General information**

All higher education studies in Poland are regulated by a Law signed by the Minister of Science and Higher Education, which included standards and minimum requirements. In addition, there are general guidelines established by individual University faculties that have some autonomy in regard to a certain number of hours as well as the content of subjects.

The Regulation of the Minister of Science and Higher Education from 29 September 2011 (replaces the Regulation from 12 July 2007) refers to educational standards for veterinary and architecture studies. Also included are conditions such that a university can run inter and macro-disciplinary studies with some changes since 16 Oct. 2009. Attachment 1 to this Regulation concerns veterinary studies.

This Attachment 1 describes the minimum requirements for veterinary education in Poland leading to the diploma of veterinary surgeon (see appendix 9.1.). This title and diploma are in accordance with the Regulation of the Minister of Science and Higher Education from 19 December 2008 concerning types of professional titles awarded to university graduates and types of diplomas and certificates issued by the university.

Attachment 1 contains the list of skills that a veterinary graduate should obtain during studies and this list is in accordance with the EU directive 78/1027/EEC of December 1978 (since replaced by directive 2005/36/EU, and subsequently by directive 2013/55/EU).

The minimal number of hours should not be less than 5100 and minimal European Credits Transfer System (ECTS) points no less than 330. These hours are divided into the basic subjects including: Biology, Cell Biology, Biochemistry, Biophysics, Chemistry, Histology and Embryology, Animal Anatomy, Topographic Anatomy, Animal Physiology, Microbiology, Immunology, General and Veterinary Genetics, Veterinary Epidemiology, Pathophysiology, Veterinary Pharmacology, Pharmacy, Toxicology, Environmental Protection, Biostatistics and Methods of Documentation, Forensic Medicine and cover no less than 1185 hours and 87 ECTS.

The second group of subjects cover the following: Agronomy, Breeding and Rearing of Farm Animals, Technologies in Animal Production, Feed and Food Hygiene, Dietetics, Ethology, Welfare and Animal Protection, Veterinary Prevention, Veterinary Economics, Imaging Diagnostics, Clinical and Laboratory Diagnostics, Pathomorphology, General Surgery and Anaesthesiology, Parasitology and Invasiology, Diseases of Dogs and Cats, Diseases of Horses, Diseases of Farm Animals, Andrology and Artificial Insemination, Poultry Diseases, Fur Animal Diseases, Fish Diseases, Beneficial Insect Diseases (Bee Diseases). These should cover at least 1785 hours and 130 ECTS. In fact, Attachment 1 defines the ratio between theoretical and practical training that can be changed by the Faculty Council only partly.

According to Attachment 1, 300 hours are devoted to clinical rotations, and 560 hours are destined for extramural clinical training and extramural sanitary and slaughter practical training.

Moreover, several hours are devoted to humanistic subjects, modern Latin language, work safety and ergonomics, protection of intellectual property, physical education, and information technology.

The remaining hours are at the disposal of the faculty for their own decisions that are recommended by a Faculty Curriculum Board and confirmed by the Faculty Council.

Generally, the curriculum covers all subjects required by the EU directive and mentioned in the Professional knowledge section. Topics such as Practice management, Veterinary certification and report writing, Career planning and opportunities do not have adequate emphasis in our curriculum but their contents are partly covered by in other subjects.

*12.9.1. State the overall objectives of the curriculum and describe how those objectives are integrated into individual courses*

The overall objectives of the curriculum are defined in the EC Directive of 2005 concerning professional qualifications (changed by 2013/55/EU). The new current standards of teaching veterinary science at the veterinary medical faculties in Poland follow the recommendations in the EC Directive, under which training in the profession of veterinary surgeon ensures the acquisition of professional knowledge and the following skills:

- ✓ adequate knowledge of the sciences basic for the veterinary surgeon's activities;
- ✓ adequate knowledge of the structure and function of healthy animals, of their husbandry, reproduction and hygiene in general, as well as their feeding, including the technology involved in the manufacture and preservation of foods corresponding to their needs;
- ✓ adequate knowledge of animal behavior and protection;
- ✓ adequate knowledge of the causes, nature, course, effects, diagnosis and treatment of animal diseases, whether taken individually or in groups and specifically knowledge of diseases transmitted to humans;
- ✓ adequate knowledge of preventive medicine;

- ✓ adequate knowledge of the hygiene and technology involved in the production and distribution of animal or animal origin foodstuffs intended for human consumption;
- ✓ adequate knowledge of the laws, regulations and administrative provisions in relation to the subjects listed above;
- ✓ adequate clinical and other practical experience under appropriate supervision.

Meeting the requirements of EC Directive, the EAEVE developed a list of necessary skills for graduation in Veterinary Medicine, called ,,One Day Skills"

The essential competences fall into three main categories:

- ✓ General professional skills and attributes – describing the distinctive characteristics of a veterinary surgeon
- ✓ Knowledge and understanding – generally determining the range of knowledge needed for a career as a veterinary surgeon, and for subsequent professional development in whatever professional sphere the individual wishes to pursue
- ✓ Practically-based veterinary competence – describing the basic practical competence expected at graduation, and further professional practical training

*The veterinary graduate should be able to:*

- ✓ Communicate effectively with clients, non-professionals, colleagues and responsible authorities; listen attentively and respond politely to them, using appropriate and professional language
- ✓ Prepare comprehensive case reports and keep patients' records in an appropriate form
- ✓ Work effectively as a member of a multi-disciplinary team
- ✓ Be aware of the ethical responsibilities of a veterinary surgeon in individual animal care and client relations, and also, in the community in terms of their possible impact on the environment and society as a whole
- ✓ Be aware of the economic and emotional conditions in which the veterinary surgeon operates, and respond adequately to such pressures and sensitivity
- ✓ Be willing to use professional capabilities to contribute to veterinary knowledge advancement in order to further improve the quality of animal care, animal welfare, and veterinary public health (evidence based medicine)
- ✓ Have basic knowledge of the organization and management of a veterinary practice, including:
    - o awareness of one's own and the employer's responsibilities in relation to employment and health
    - o safety legislation, and the position relating to lay staff and public liability
    - o awareness of how fees are calculated, and the importance of record and book-keeping, including:
    - o computer records and case reports
    - o the ability to use information technology effectively to communicate, share, collect, manipulate and analyze information
    - o the importance of complying with professional standards and the practice policies
- ✓ Understand the need and professional obligation for a commitment to further education and training, and professional development throughout the professional life
- ✓ Act in a professional manner in regard to a veterinary surgeon's professional and legal responsibilities, and understand and apply the ethical codes of the appropriate regulatory bodies
- ✓ Be able to cope with uncertainty and adapt to change
- ✓ Be aware of personal limitations, and demonstrate awareness of when and where to seek professional advice, assistance and support
- ✓ Have basic knowledge of veterinary services

*The new veterinary graduate will need to acquire thorough knowledge and understanding of the following:*

The sciences that the activities of veterinary surgeons are based on:

- ✓ Research methods and the contribution of basic and applied research to all aspects of veterinary science
- ✓ Evidence evaluation techniques
- ✓ Structure and function of healthy animals and their husbandry
- ✓ Etiology, pathogenesis, clinical signs, diagnosis and treatment of common diseases and disorders in the common domestic species in the EU
- ✓ Legislation relating to the welfare (including transport) of animals and reportable diseases
- ✓ Medicine legislation and guidelines on responsible use of medicine as applied in the member states
- ✓ The principles of disease prevention and the promotion of health and welfare
- ✓ Veterinary public health issues including zoonoses

*The veterinary graduate should be able to do the following:*

- ✓ Obtain an accurate and relevant history of the individual animal or animal group, and its/their environment
- ✓ Handle and restrain an animal safely and humanely, and instruct others in performing these techniques
- ✓ Perform a complete clinical examination
- ✓ Attend all common domestic animal species in an emergency and use first aid
- ✓ Problems to be handled for any species include first aid management of:
    - o a hemorrhage, wounds, breathing difficulties, eye and ear injuries, unconsciousness, clinical deterioration, burns, tissue damage, internal organ damage and cardiac arrest
- ✓ First aid to be applied includes
    - o bandaging, cleaning, immobilizing limbs, resuscitation procedures, hemorrhage control
- ✓ Assess the nutritional status of an animal and be able to advise the client on husbandry and feeding principles
- ✓ Collect, preserve and transport samples, perform standard laboratory tests, and interpret the results of those generated in-home, as well as those generated by other laboratories
- ✓ Use radiographic, ultrasonic, and other technical equipment used as a diagnostic tool, safely and in accordance with current regulations
- ✓ Follow correct procedures after diagnosing reportable and zoonotic diseases
- ✓ Perform correct certification
- ✓ Access the appropriate sources of data of licensed medicine; prescribe and dispense medicine responsibly in accordance with relevant legislation and ensure that medicine and waste are safely stored and/or disposed of
- ✓ Apply principles of surgical equipment sterilization
- ✓ Apply aseptic surgery principles
- ✓ Safely perform sedation, general and regional anesthesia, assessing and controlling pain
- ✓ Advise on and administer appropriate treatment
- ✓ Evaluate the necessity of euthanasia and perform it humanely, using an appropriate method, while showing sensitivity to the feelings of owners, and with due regard to the safety of those present; advise on the disposal of carcasses
- ✓ Perform a basic post mortem examination, record details, sample tissues, store and transport them
- ✓ Perform ante and post mortem inspections of food animals and correctly identify conditions affecting the quality and safety of animal origin products
- ✓ Assess and implement basic health and welfare records (and production records where appropriate)

- ✓ Advise on, and design preventive and prophylactic programs appropriate to the species (herd health management) and commensurate with accepted animal health, welfare and public health standards, seeking advice and assistance where necessary from colleagues
- ✓ Minimize the risks of contamination, cross infection and accumulation of pathogens in the veterinary premises and in the field

***Curriculum integration into individual courses***

Educational objectives of the faculty within individual subjects are designed to meet the expected competence of graduates. The Faculty has developed for its and national use, a special list of subject matter objectives into its syllabi. These give detailed goals and objectives corresponding to the general or specific qualifications of graduates. The starting point for achieving these accepted qualifications are education and curricula subjects and objectives (see addendum). By analyzing the content, the Faculty Program Committee guarantees the achievement of these course and subject matter objectives and the acquisition of certain professional behavioral skills (Day one skills).

Classes, clinical internship and externship work is required of all students. Student attendance is checked at the beginning of each meeting.

Lectures are not required but attendance is advised.

The faculty offers 37 subjects out of which students choose 12. These 12 subjects yield 180 didactic hours and 12 ECTS. The subjects are divided into Basic sciences, Clinical sciences, Professional knowledge as well as others that include a First aid course and Marketing and management. Free electives vary in nature, with a view that allows students to complete their studies in a chosen area of interest. The aim is to ensure a flexible configuration of the curriculum. Students may complete their full complement of credits by choosing subjects from those made available each year by the Faculty.

The location in the curriculum and range of hours for an obligatory externship program is defined in attachment 1 (obligatory extramural work). This externship program covers 80 hours of animal breeding training after the 2nd year, 80 hours of practice (externship) in vet inspection and 160 hours of clinical practice after both the 4th year and 5th year.

Students are only allowed to enroll for certain subjects once they have passed other prerequisite courses. For example, students can only take ,,Topographical Anatomy" once they have passed ,,Animal Anatomy". Passing these two subjects allows students to enter ,,Pathomorphology"; similarly, they can only take the core subject ,,Biochemistry" once they have passed ,,Chemistry", and they can only study ,,Pathophysiology" after passing ,,Physiology". Moreover, passing ,,Clinical and laboratory diagnostics" is necessary for entering diseases of each species. ,,Microbiology" is the prerequisite for ,,Epizootiology". Finally passing ,,Hygiene of Food-Animals and Meat" is the condition to start ,,Hygiene and Technology of Food of Animal Origin".

*12.9.2. Describe major curricular changes that have occurred since the last accreditation.*

The current curriculum leading to the award of the degree of veterinary medicine at the University of Life Sciences in Lublin is based on Attachment 1 of the Law passed on 29 September 2011. Attachment 1 of this Regulation is in agreement with Directive 78/1027/EEC of December 1978 (since replaced by directive 2005/36/EU, and subsequently by directive 2013/55/EU).

Partial changes have been implemented since the academic year 2007/2008, and starting from 2010/2011 a new division of clinical subjects was introduced. The current curriculum implements the division of clinical subjects by species while previously these subjects were divided in accordance to disciplines. Moreover, a new system for practical training was implemented in the academic year 2010/2011.

The former Faculty Commission for academic courses and now (since 2012) the Curriculum Board are faculty advisory bodies responsible for the analysis of the documents mentioned above. This is a discussion on the distribution of hours and location of particular subjects with faculty responsible for these subjects and ultimately a presentation of a final version for approval by the Faculty council.

The distribution of theoretical and hands-on clinical courses was evaluated on the basis of former versions of the curriculum, and was shifted toward more practical types of courses, enabling teaching/training of small groups of students.

Each year, the Faculty Council has to approve the curriculum for the incoming academic year, that means that this matter is under careful consideration and minor changes can be made once a year (for example changes of elective courses). After approval, the documents are sent to the Vice Rector for Student Affairs to be signed.

The Curriculum Board worked under the guidance of the Vice Dean for Student Affairs and together they implemented the preparation of the new law, consequently with significant input.

In accordance with the final version laid down by a resolution of the Faculty Council passed on 29 May 2014 and recommended by the Faculty Curriculum Council in Lublin, the curriculum covers **5100** hours (330 ECTS) that are divided into:

| | |
|---|---|
| Basic subjects covering | 1445 hours |
| Professional subjects covering | 2265 hours |
| Humanistic subjects and others covering | 335 hours |
| Clinical practice (internship) | 315 hours |
| Extramural practice | 560 hours |
| Facultative subjects | 180 hours |

The last – 11th semester – is planned so as to be free from regular lectures and classes in order to give the students the chance to participate in practical clinical work. In this semester students realize elective courses.

*12.9.3. Describe the process used for curriculum assessment (including course/instructor evaluation) and the process used to assess curricular overlaps, redundancies, and omissions*

All research and teaching employees of the Lublin Life Sciences University are subject to a periodic detailed assessment every four (for professors) or every two years (for other employees) in compliance with the requirements established by the Law on Higher Education - Art. 111 and 132 (Journal of Low 2012, 572), Statutes of the University - § 99, Senate Resolution 71/2012-2013. This includes an assessment-scoring sheet. This evaluation examines separate activities such as scientific, teaching, organizational, educational and implementation. A special scoring key evaluates each of these activities, where various factors are given a number of points. The teaching activity is subject to detailed assessment including publications, the implementation of the teaching process (lectures), the subject credit score, supervision of completed theses, reviewing theses, consultancy and translation, and conducting classes. The latter are assessed on the basis of a questionnaire by the student and supervisor. In order to obtain a positive assessment by the employee, a certain number of points from all types of professional activities are to collect. Positive assessment is the prerequisite for the extension of employment for the next four or two years by the employer, i.e. the Rector. From a technical standpoint, this assessment is a self-assessment and is based on the completion of the form by an employee being evaluated, including the specified number of points for each activity. The form and the data contained therein are then reviewed by the faculty Committee for the Evaluation of the Academic Staff, which issues its own assessment. The committee sends all the documentation to the University Human Resources Department. In the case of a negative assessment an employee is entitled to an appeal to the institutional review committee.

Course teaching is also taken into account in the system of awards granted to employees by the Rector. Requests for distinguished teaching awards are submitted by interested people to the Personnel Committee. After a preliminary verification, these claims are discussed at the forum of the Faculty Councils and secretly voted upon. In the case of a positive vote, the proposal is re-examined by the Personnel Senate Committee, and a final decision is made by the Rector. Rector's Awards are granted once a year on the occasion of the inauguration of the new academic year and refer to the achievements of the previous year. Detailed principles for the awards granted by the Rector are actually determined by the resolution of the Senate No. 69/2012-2013/2006-2007 from 17 May 2013 for the Regulations on Rector’s Awarding Academic Teachers.

Annually, excellent teachers may also be awarded with a special departmental prize - The Commission of National Education Medal, granted by the Ministry of Education. Applications for this medal are submitted to the faculty by interested persons.

**Assessment of the curricular overlaps, redundancies, and omissions**

This is addressed in the university quality policy. The main objective of this is to pursue quality at the university; the priority of which is to educate students at all levels. The quality of education refers to issues such as constant improvement of qualifications, research and teaching, the implementation of investment projects, providing the highest possible level of education and services, and continuous improvement of the education quality in accordance with the development strategy of the University. In addition, the university's internal system has been introduced to ensure the quality of education. It is regulated by the Law on Higher Education (Journal of Low 2012, 572), the Regulation of the Minister of Science and Higher Education from 5 October 2011, and Senate Resolution No. 43/2012-2013). The management of quality of the Faculty of Veterinary Medicine functions within an internal system of management quality at the University of Life Sciences in Lublin, according to Resolution No. 43/2012-2013 of the Life Sciences University of Lublin Senate of 22

February 2013 on the internal system of education quality management at the Life Sciences University of Lublin (see appendix 9-2) and resolution of Faculty Council 3/2014-2015.

The system consists of the following elements:

1. Policies and procedures of quality
2. Approval, monitoring and periodic review of programs and their effects
3. Student Assessment
4. Quality of teaching staff
5. Resources to support student learning
6. Publication of evaluation results

An important element of the system to improving the quality of education is the student evaluation of the teaching staff, conducted twice per year. This evaluation is anonymous, and is performed by specialized equipment and computer software of the Testico-Sona company, which allows multi analysis of the results. The introduction of such an evaluation instrument effectively encourages the faculty to improve their teaching skills, which ultimately leads to a higher quality of education.

It is the Curriculum Board, appointed by the Dean of the Faculty on 27 September 2012, which is in charge of course coordination. It was appointed based on the University of Life Sciences' Senate recommendations included in the resolution 43/2012-2013 of 22 February 2013 concerning the internal system of ensuring the quality of education at the Univ. of Life Sci. in Lublin. In accordance with the resolution's recommendations, the Board consists of 3-6 members representing important courses in the major and one student. The Vice-Dean of Students Affairs and Education is the chairperson of the Curriculum Board.

In accordance with the Senate's resolution, the basic task of the Curriculum Board is to oversee implementations and ensure high standards of teaching. This task is accomplished especially by:

1. Shaping a suitable graduate's profile in accordance with standards for a particular faculty and specialty of studies
2. Updating plans and the general university curriculum in conformity with the Ministry of Science and Higher Education standards
3. A suitable selection and sequence of subjects, the form of classes and their mutual proportion, offering an essential number of laboratory classes required to achieve the declared aim of teaching
4. Periodic inspections of detailed courses' syllabi with respect to eliminating repetitive contents.

The role of the Curriculum Board is also to decide on the form of receiving credit for particular courses (an exam, a credit with a grade, a credit without a grade). The decisions of the Board concerning this matter take into account student opinions and recommendations of the rules of the university. The Board's working meetings are called if necessary. Issues concerning the course coordination, which needs to be analyzed and discussed in the Faculty Council forum, are presented during the Faculty Council meetings. Depending on the kind of problem, suitable resolutions are passed. The approval of the complete curriculum, which is followed for particular years of studies, seems to be one of the most important resolutions passed concerning course coordination. Curriculum coordination is performed by persons who are responsible for running particular courses and who are appointed each time for the next academic year by the Faculty Council.

The Curriculum Board's important statutory task is to analyze in detail factual contents of lectures, classes and practical laboratory classes with respect to eliminating repetitive contents. Conclusions from these analyses are put forward to the Faculty Council forum, which makes its final decision to eliminate repetitive material from the curriculum after discussion. The top supervision of teaching coordination and teaching policy in the faculty is performed by the Vice–Dean of Student Affairs and Education. This person has to report his decisions to the dean, the faculty council and to the Vice–Rector of Student Affairs and Education.

Summer time student's training (breeding, slaughtering, sanitary and clinical training) is especially important in the teaching process. Three people appointed by the dean are responsible for the coordination and organization of student trainings. The summer training programs are created in two didactic entities, in the Department of Hygiene, if they concern slaughtering and sanitary training, and in the clinical departments if they concern medical training. Breeding training, which was introduced in accordance with the requirements of the new standard of teaching, is coordinated centrally by the university unit- The Institute of Practical Training.

*12.9.4. Describe the strengths and weaknesses of the curriculum as a whole*

**Strengths of the curriculum**

All the contents of the curriculum are catalogued, systematized and divided logically and factually among particular courses. Thanks to this, requirements that students need to meet if they want to receive a credit or pass an exam are clear.

There is detailed information of the content of particular subjects that allows students to avoid repeated contents of different courses.

Because of this, clinical courses can be run in the form of ,,species blocks" by didactic teams that consist of representatives of clinical entities still functioning within the disciplinary system.

The distribution of theoretical and hands-on courses allows more practical types of courses, enabling the teaching/training of small groups of students.

The curriculum allows strong practical clinical education. In fact, the last term of studies is free from obligatory classes and is devoted entirely to improving practical clinical abilities as part of the species internships.

**Weaknesses of the curriculum**

A large volume of material that students must assimilate, insufficient opportunities for small group learning and problem solving, excessively short clinical rotations for students.

*12.9.5. Describe preceptor and externship programs (including the evaluation process).*

**Preceptor program**

The preceptor program comprises theoretical and practical training programs. Theoretical training programs are accomplished by lectures and tutorials. Self directed learning is a new didactic approach that does not currently exist at our Faculty. Some Departments, however, provide the appropriate materials for students and require this knowledge during classes. Currently these hours are not included into the regular curriculum. This kind of education is planned to be developed in the near future in a formal manner. Hours devoted to self-learning are not included into the total number of curriculum hours, since they are clearly very difficult to estimate.

The teachers from the Faculty together with teachers from the veterinary faculties in Hannover and Budapest prepare innovative computer based didactic materials for teaching in basic sciences which should serve to increase motivation and learning success (www.vetvip.eu). Within the project available interdisciplinary cases were created and these cases are available to students.

The internet resources used to operate the clinical service, are partly utilized in order to enhance the teaching of clinical courses. These computer networks contains among others: descriptions of clinical cases (clinical vignettes) and results of the laboratory tests, which can be used for teaching purposes.

**Supervised practical training**

Non-clinical animal work is included in animal rearing training (after the 4$^{th}$ semester), physiology, animal husbandry, ante mortem and post mortem inspection, food hygiene, as well as training during dissection or necropsy.

Clinical work covers mainly practical training during clinical subjects, 315 hours of clinical internship and 320 hours of holiday clinical training.

**Clinical practical training**

Students' practical trainings are conducted according to the curriculum (clinical subject division in accordance to animal species).

**Practical training according to animal species**

The system approved by the Council of the Faculty extends practical training in private clinics, meat processing companies, slaughterhouses, animal food processing companies, veterinary inspection units and stud farms beyond the required curriculum hours. The university has signed agreements with the above institutions to allow students an additional 75 hours of practical training. The students receive a list of institutions covered by the agreements and individually apply for and undergo trainings listed in day one skills. The training is then confirmed by the organization conducting it and a certificate is issued at the completion of the training. This is one of the necessary criteria for crediting a student with a clinical course. Students have the 5$^{th}$ and 6$^{th}$ year for this, however, after the latest educational standards have been fully implemented and the last semester has been freed from obligatory course work, training will be entirely dedicated for this purpose.

Student practical trainings are performed in Diseases of Horses, Diseases of Farm Animals, and Diseases of Dogs and Cats. In each of the above-mentioned courses, students undergo 90 hours of training in groups consisting of 6 people. In addition, they have 30 hours of training in bird diseases and 15 hours in invasive diseases. During this time they are fully exposed to dealing with clinical cases reported by breeders and they participate in rounds of a mobile clinic to tend to sick animals. Supervised by on-duty doctors, they tame animals, perform simple tasks, collect laboratory samples, resuscitate in life-threatening situations and practice other day one skills. On completing this training, students are required to write a case history of a chosen clinical case and have it accepted by a supervising assistant.

These procedures include:

**Practical skills - Diseases of Horses**

Taming of horses for clinical examination and medical procedures with the use of instruments – with or without pipes, chains, ropes and installation of retractors. Basic clinical examination – body temperature, heart rate, breath rate; rectal examination, orthopedic examination. Sampling of biological material for laboratory examination: a) urine with the use of a catheter, b) blood from the jugular vein into vacuum tubes, c) skin scrapings and hair for microbiological and parasitological examination. Dentition assessment and tooth correction. Examining of lacrimal canal patency; probing. Rhinoscopy, gastroscopy, bronchoscopy. Passing of a stomach tube. Enema. Installation of a vein catheter, intravenous infusion, intravenous injection. Subcutaneous injection, intramuscular injection. Ultrasonographic examination of tendons. Abdominal paracentesis, thoracocentesis, assessment of the peritoneal and pleural fluid. Auscultation of the thorax and abdominal cavity. Electrocardiography. Assessment of the dehydration degree; fluid therapy. Sampling of biological material for bacteriology – nasopharyngeal swab, conjunctival swab, vaginal swab, blood, urine, feces, skin scrapings, hair, internal organ fragments. Antemortem and postmortem sampling of biological material for virology – transport media. Sampling of trachea-bronchial lavage with the use of non-invasive methods. Principles of conservation and transport of biological material to a laboratory. Physical and pharmacological taming. Preparation of surgical instruments. Preparation of patients for surgery. Performing a clinical examination – surgical, orthopedic, dental, ophthalmic. Proceedings in case of trauma and wounds. Methods of local and general anesthesia. Practical application of an x-ray and ultrasound (USG) examination. Skills in assisting in surgical procedures. Organization of correct horse reproduction in case the of individual breeders and in studs. Skills in a detailed clinical examination of the reproductive tract in mares and stallions; use of USG. Collection of semen and performing artificial insemination. Diagnosis of early pregnancy and early embryonic death – USG examination. Skills in complicated delivering – fetotomy, caesarean section. Skills in diagnosis and therapy of fertility disorders – lavage of the uterus, sampling of swabs for cytology and bacteriology, performing uterus biopsy. Performing vulvoplasty in mares). Skills in the assessment of the health state in the newborn foal. Assessment of the biological quality of the colostrum in mares. Assessment of the immunological status of foals 24 hours after birth based on rapid field tests. Manual placental detachment in mares.

**Practical skills - Diseases of Farm Animals**

Anamnesis and the evaluation of welfare. Taming of cattle, small ruminants and pigs for clinical examination and medical procedures with the use of instruments and pharmacologically. Local and general anesthesia. Basic clinical examination of cattle, small ruminants and pigs. Collection of rumen content. Parasitological examination. Passing of stomach tube. Passing of Thygesen tube or puncturing of rumen (trocaring). Sampling of blood. Intravenous, intramuscular and subcutaneous injections. Catheterization of the urine bladder in cattle. Rectal examination in cattle (for internal medicine and gynecological purposes). Medical assistance in physiological parturition. Examination of legs and correction of hooves. Wound healing and suturing. Chosen surgery – rumenotomy, abomasum dislocation. Examination of the mammary gland, diagnostic procedures in mammary gland inflammations. Sampling for microbiological purposes, tuberculin test. The analysis of nutrition and productivity data of milk cows in milk farms. Documentation of vet visits at the farm. Pregnancy diagnosis in female farm animals. Medical assistance in eutocia. Conservative treatment of dystocia. Anesthesia in: caesarian section, gynecological operations and surgical intervention in the udder. Practical performance of caesarian section in female farm animals. Surgical procedures including the female genital tract and udder. *per vaginam* examination. Uterus catheterization. Collection and evaluation of swabs and biopsy material from the genital tract. Estimation of the stage of the estrus cycle in female farm animals. Techniques of embryo transfer in female farm animals. Techniques of milking. Hygiene of milk collection. Collection of milk for laboratory examinations, microscopic and microbiological evaluation of milk, and performing antibiotic sensitivity tests.

**Practical skills - Diseases of Dogs and Cats**

Taming of dogs and cats for clinical examination and medical procedures with the use of instruments and pharmacologically. Inspection, palpation, percussion and auscultation. Basic clinical examination – body temperature, heart rate, breath rate. Intravenous, intramuscular and subcutaneous injection. Installing of a vein

catheter, intravenous infusion. Assessment of the dehydration degree. Fluid therapy. Sampling of biological material (urine with the use of a catheter, blood, skin scraping and hair, nasopharyngeal swab, conjunctival swab, vaginal swab, feces) for bacteriology, virusology and mycology examination. Blood morphology, urine morphology, feces examination. Practical knowledge of administration of drugs (indications and contraindications). Prevention of infectious diseases of dogs and cats. Electrocardiography. X-ray and ultrasound examination. Endoscopic examination (rhiniscopy, bronchoscopy, gastroscopy, colonoscopy, cystoscopy). Otoscopy and vaginoscopy. Gastric lavage, enemas. Preparing surgical instruments. Preparing patients for surgery. Preoperative and post-operative care. Principles of tissue handling and aseptic techniques. Evaluating a patient before anesthesia for risk assessment. Skills in local and general anesthesia. Anesthetic monitoring and resuscitation techniques. Actual methods of analgesia. Skills in assisting in surgical procedures. Performing clinical examinations – surgical, orthopedic, dental, ophthalmic. Proceedings in case of traumas and wounds. Abdominal paracentesis, thoracocentesis assessment of peritoneal and pleural fluid. Organization of correct dog and cat reproduction. Skills in detailed clinical examination of the reproductive tract in dogs and cats. Assistance in parturition, surgery (cesarean section, castration, sterilization, mastectomy). Collecting semen and performing artificial insemination. Diagnosis of pregnancy – usg examination. Skills in diagnosis and therapy - mastitis, fertility disorders. Skills in assessment of the health state in newborn puppies and kittens. Contraception and hormone therapy.

**Bird Diseases**

Clinical training (internship) complements theoretical knowledge in the subject and aims at teaching students the techniques for practical clinical, laboratory and postmortem examinations, methods of administering drugs to birds and collecting samples for diagnostic tests as well as collecting clinical documentation with respect to binding veterinary regulations.

Each student is obliged to take 30 hours in the year (XI semester), 6 students take the training simultaneously.

The training includes strategies for taking anamnesis, performing clinical and/or postmortem examinations, and mastering techniques for collecting laboratory samples under the supervision of an on-duty doctor.

Moreover, the students perform bacteriological, mycological and parasitological examinations as well as antibiotic sensitivity tests of isolated microorganisms and evaluate achieved results. Based on the knowledge of the principles and methods of administering drugs to birds, they determine therapeutic procedures for individual patients. In addition, students assist in simple surgical procedures i.e. remove feather germ cysts in canaries, debridement of wounds, fracture procedures, beak and claw corrections, egg obstructions. Within the training duties, they also learn to collect clinical documentation for pets and farm animals using the computer program „Klinika XP'.

Additionally, students prepare a monograph on a chosen clinical case, which they present and consult with the supervising doctor and finally take oral exams to complete the training.

**Parasitology and Invasiology**

Practical trainings (internship) of groups of 6 students are conducted in the laboratories of Parasitology and Invasiology. Each student is required to take 15 hours of training weekly during time free from other obligatory classes and lectures. The training includes running practical parasitological tests, parasitological examinations and learning about the procedures of laboratory work. On completing the training in the form of an oral exam, students report on research methods, which they have applied, to a particular study case. The purpose of the training is to prepare students to individually diagnose animal parasitological diseases.

**Obligatory externship program**

Students of the degree program of veterinary medicine have to complete a total of 14 weeks (560 hours) of externship work. This does not denote courses, but is destined to constructively complement professional preparatory training or scientific training and serves the acquisition of skills as well as preparation for future professional practice.

Students complete their externship work during holidays. This consists of the following:

Two weeks (80 hours) of agricultural training at a farm or a comparable institution after the 2$^{nd}$ year of studies after the successful completion of an exam of the subjects Rearing and Breeding, Techniques in Animal Production, and Nutrition and Feedstuffs.

Four weeks (160 hours) of food inspection at a slaughterhouse as well as a meat processing institution after the completion of all courses of basic training in food sciences and veterinary public health services after the 4th (80 h) and 5th year (80 h) of studies, respectively.

Eight weeks (320 hours) of extramural work with a veterinarian in one of the animal clinics of the faculty or at a similar institution of the student's choice after the 4th (160 h) and 5th year (160 h) of studies respectively.

Students have to collect the documentation of practical training in special training books, which they obtain before training. On the basis of these books and the student's knowledge they have to pass the exam after finishing the practical clinical and slaughter training.

The supervisors responsible for practical training are:

Andrzej Puchalski is the main supervisor for practical training and the Dean's plenipotentiary and administration person.

Andrzej Milczak is the person responsible for clinical training.

Waldemar Paszkiewicz is responsible for sanitary and slaughter practical training.

The practical training program for students after the 4th and 5th year of study in the veterinary clinic includes:

1. Internal medicine
   - Basic diagnostic procedures- practical training;
   - Simple interventions (s.c, i.m., i.v.- injections, cava pleura and peritoneum punctures, catheterization of the urinary tract, infusion into the rectum);
   - Introduction about main pharmaceuticals used in veterinary therapy;
   - Interpretation of results for additional examination (blood morphology, urine, blood biochemical, EKG);
   - Practical information about procedures of therapy that are most often observed in internal diseases.
2. Veterinary surgery
   - Local and general analgesia procedures;
   - Bandage installation and preparation;
   - Training in simple non complicated surgery in animals;
   - Accompaniment to small surgery (general surgery, ophthalmology, orthopedic, dentistry;
3. Veterinary reproduction and gynecology
   - The diagnostic procedures of pregnancy (palpation, USG, pregnancy tests) and reproductive diseases;
   - Preparation of simple gynecologic and obstetric surgery;
   - Accompaniment to simple gynecologic and obstetrics surgery;
4. Among infectious diseases
   - The diagnostic methods for most often seen infectious diseases;
   - The procedures of prophylaxis of infectious diseases;
   - The methods of elimination and procedures among diseases eliminated by official government legislation;
5. Among radiology
   - Advantages and disadvantages of radiological examination;
   - The procedures of radiological and USG examination, patient preparation;
   - The interpretation of X-ray and USG pictures;
6. Disease Documentation
   - Health documentation, sheets and computer evidence of patients;
7. Among organization and administration procedures
   - The rules of organization of work in a practical training place;
   - Practical information about patient registration and evidence systems;
   - Practical training in pharmacy- evidence, storage etc.;

**Food Hygiene/Public Health Externship Program**

The practical 2-week holiday training program (80 h) for students after the 4th year of study in a slaughterhouse covers:

1. The structure and organization of the slaughterhouse.
2. The technology and slaughter of livestock and poultry.
3. The sanitary-veterinary examination of livestock and poultry before slaughter.
4. The role of the veterinarian in the examination of animals before and after slaughter.
5. The obligatory examination of particular livestock species after slaughter (depending on slaughter house properties, additional examination).
6. The regulation procedures with extra risk material (samples) in the case of cattle, sheep and goat slaughter.
7. The refrigeration conditions of carcasses and internal organs of animals after slaughter.
8. The cleaning and disinfection processes in the technological slaughter line.
9. The duties and role of a veterinarian during slaughter supervision, and after slaughter examination procedures of animals and meat.
10. The documentation of examination procedures after slaughter kept by a veterinarian.

The practical 2-week holiday training program (80 h) for students after the 5th year of study in a meat processing institution (company) covers:

1. The structure and organization of a meat processing institution (planes, technological lines and the main technological processes).
2. Role of the veterinarian as supervisor in the organization structure of a meat processing institution.
3. The partition of corpulence after slaughter on animals and the bleeding of meat (the main parts of corpulence, additional elements, the qualification of meat).
4. The sausages and preserved meat production.
5. The grease production and categorization of wastes.
6. The refrigeration systems for meat and meat product storage.
7. The cleaning and disinfection processes in the meat industry.
8. The HACCP system in a meat processing institution and its control.
9. The duties and role of a veterinarian in meat processing industry supervision.
10. The documentation carried out by a veterinarian during supervision of meat production.

Additionally, during regular classes students have access to five different facilities.

Facility 1: (approx 17 km from Lublin): Cattle/pig, EU-approval

- A permanent agreement for running curricular classes with the students of the IV and V year on the premises, concluded on 24.03.2010. The agreement provides for: **a)** a practical acquisition of knowledge of ante-mortem and post-mortem examination of food animals with reference to the subject of ,,Hygiene of Food Animals and Meat'' and a two-week students' training on completion of the IV year of studies; **b)** acquainting students with the technology and principles of sanitary and veterinary supervision over meat processing with reference to the subject ,,Hygiene and Technology of Food of Animal Origin'', as well as a two-week students' training on the completion of the V year of studies.

Activities of the students: meat inspection of the carcass, postmortem inspection, carcass surface sampling

Activities connected with the examination of slaughter animals and their raw materials are conducted in a pig and cattle slaughterhouse, which is a modern plant, equipped with a HACCP system and is authorized to produce for the market.

Animal carcasses are stored in a separate room where students learn after-slaughter examination of carcasses. Examination of internal organs is conducted in a specially isolated area of the slaughter hall.

There is a cloakroom and a conference room at students' disposal where training issues are discussed before and after training sessions.

Group size per excursion: 8 students under the guidance of 2 workers of the Department and 2 workers of the Veterinary Inspection Unit.

Facility 2: (The meat processing plant is situated approx 50-150 km from Lublin. Transportation costs (buses) are covered by the excursion budget of the Faculty. A modern plant authorized to produce for the market and equipped with a HACCP system.

- Disposable, annual agreements for running curricular classes with the students of the V year on the premises. The agreement regards practical classes which are meant to acquaint the students with the technology and the principles of sanitary and veterinary supervision over meat processing with reference to the subject ,,Hygiene and Technology of Food of Animal Origin''.

Activities of the students: Students are introduced to technologies of meat processing.

Group size per excursion: 10-15 persons under the guidance of 2 workers of the Department, a technologist and an official vet doctor from the Unit. There is a cloakroom and conference room at students' disposal where particular training issues are discussed before and after training sessions.

Facility 3: Poultry Works are situated in Lublin. Transportation by city buses or private cars. The plant is modern and equipped with a HACCP system and is authorized to produce for both domestic and foreign markets.

- Disposable, annual agreements for running curricular classes with the students of the IV year on the premises. The agreement regards practical classes which are meant to acquaint the students with the technology of slaughter and an ante-mortem and post-mortem examination, as well as processing technology and the principles of sanitary and veterinary supervision over poultry processing with reference to the subject ,,Hygiene of Food Animals and Meat''.

Activities of the students: Students are introduced to technologies of production of poultry carcasses and meat products.

Group size per excursion: 10-15 persons under the guidance of 2 workers of the Department, a technologist and an official vet doctor from the unit.

There is a cloakroom and a conference room at students' disposal where particular training issues are discussed before and after training sessions.

Facility 4: (Cold storage plant and game animal carcass storage approx. 110 km from Lublin). Transportation by city buses or private cars is used. The storage for game animal carcasses is a type of cold storage. They are modern, equipped with a HACCP system and authorized to produce for home and foreign markets.

- The agreement regards practical classes which are meant to acquaint the students with the principles of: a) purchasing and storing game, b) sanitary and veterinary examination of wild game, c) processing technology and the principles of sanitary and veterinary supervision over game processing.

Activities of the students: Students are introduced to conditions of storing game meat and the principles of sanitary and veterinary inspection of production.

Group size per excursion: 30 students under the guidance of 2 workers of the Department and 1 technologist from the Unit. There is a cloakroom in the cold storage plant at students' disposal.

Facility 5: (Dairy 20-100 km from Lublin; Transportation costs (buses) are covered by the excursion budget of the Faculty. It is a modern plant equipped with a HACCP system and authorized to produce for domestic markets and export to several foreign countries.

- The agreement regards practical classes, which are meant to acquaint the students with the technological aspects of processing and the principles of sanitary and veterinary supervision over milk processing with reference to the subject "Hygiene of milk".

Activities of the students: Students are introduced to technologies of milk and dairy product production with special regard to production of ripening cheeses, casein, whey and powdered milk.

There is a cloakroom and a conference room at students' disposal where particular training issues are discussed before and after training sessions.

Practical training during the course of Hygiene of Food-Animals and Meat: 6 hours in the VII and 3 hours in the VIII semester - ante mortem and post mortem inspection of cattle, pigs and poultry. Group size - 15 students under the guidance of 2 workers of the Department and 1 technologist from the Unit. Each student also attends one excursion lasting 6 hours during the course of Hygiene and Technology of Food of Animal Origin (technologies and inspection over meat preparation and meat products).

The credit for student's training or clinical internship is given by an academic teacher appointed by the Dean on the basis of the Students' Training Register Book or an Internship Card, as well as an oral exam that verifies the student's knowledge of the activities performed during the training and the internship, as recorded in the book or the card. The lack of a passing credit for the training or the internship is equivalent to the lack of passing credit for any other course provided for by the Studies Plan.

*12.9.6. Curriculum Digest*

For the curriculum digest see Curriculum Addendum.

*12.9.7. Current plans for curricular revision*

The curriculum for veterinary studies is regulated by relevant legal provisions, therefore it can only be slightly altered. However, both the teachers and the students are allowed to submit their suggestions and proposals in regards to change in the curriculum to the Curriculum Board for debate. Independently, the curriculum is subject to an assessment by the Curriculum Board each year, which presents its conclusions before the Faculty Council. After the curriculum has been approved by the Faculty Council, it is forwarded to the Vice-Rector for Student Affairs for approval. Plans for curricular changes in the nearest future are associated with the scope extension of practical education.

*12.9.8 Description of the testing/grading system*

The evaluation of the student is performed in accordance with the system of student's evaluation based on the Studies Regulations of the Life Sciences University in Lublin of 1st October 2014 pursuant to the resolutions of the Life Sciences University in Lublin Senate 82/2011–2012; 50/2012–2013; Rector's Decree no 23 of 26th April 2013 (See appendix 9.2.):
a/ in the case of courses that finish with an exam/final test and credit, the summative assessment is based on the exam or a final test carried out in written or oral form.
The person responsible for the course is obliged to inform the students about the form of the exam during the first classes of the course. In the case of an oral exam the student receives
(or notes down) the questions on a sheet of paper with their name and surname, and presents the outline of their answer on a document created so. The oral exam is held in the presence of at least two students. Both the written compositions and the documentation from an oral exam are archived pursuant to the Rector's Decree 5/2008 and 32/2012.

b/ in the case of courses run in the form of lectures or classes, before the student sits an exam (pursuant to §35 par. 3 of the Studies Regulations of the Life Sciences University in Lublin) they must obtain a credit for the classes from the course, which is subject to an exam. The formative assessment may be made on the basis of a written or oral test, project, paper, presentation or other forms defined by the lecturer and given to public knowledge during the first classes.

c/ in order to obtain a positive grade, the student is required to possess all the educational effects (knowledge, skills) contained in the module – to a satisfactory extent at the least (60%), as well as social competence.

**The criteria used for the assessment of final tests/exams and test assignments**

a) The criteria are defined by the person responsible for the module and presented to the students during the first classes of the course. For a final grade the following are recommended:

| Grade | The obtained percentage of the sum of points that evaluate the degree of required knowledge/skill |
|---|---|
| Fail (2,0) | <60% |
| Satisfactory (3,0) | 61%–70% |
| Satisfactory plus (3+) | 71%–75% |
| Good (4,0) | 76%–85% |
| Good plus (4+) | 86%–90% |
| Very good (5,0) | 91%–100% |

or else, the lecturer responsible for the module sets the criteria of the grade and includes them in the description of the module

The conditions for obtaining credits at the end of the semester have been drawn up in the current Studies Regulations of 1st October 2014. Obtaining positive grades from all exams and final tests within the deadline established in the detailed organization of the academic year, as well as obtaining the required number of ECTS credits that was defined in the studies plan, together with the participation in programme trainings are the condition for obtaining a credit for a semester. The semester is considered a reference period for credits. The modules that result from the plan of studies may finish with an exam and a credit. The credit is given by the person responsible for the module who has been appointed by the dean and approved by the Faculty Board, whereas the form and conditions of obtaining the credit were agreed upon during the first classes of the course.

In order to be admitted to examination, a prior credit for a given module is required. Should the student fail the course, they are entitled to two re-sits. The deadline for obtaining the credit expires with the last day of the re-sit session. The student has the right to review the marked test. The dates of re-sits are set by the academic teacher who is responsible for giving credit for the course, where possible, in consultation with the interested parties. Should the objectivity of the assessment or the adequacy of the course or form of the exam (final test) be questioned by the student, the dean is obliged to arrange and set a date for an examination before the board (final test before the board) at the student's written request. The exam (final test) protocols and cards are archived and examined in order to verify marking accuracy.

A student that failed to obtain credit or did not sit an exam in one or two subjects in a given semester is obliged to repeat the subject/subjects (Studies Regulations). The dean's office draws up a ruling directing the student to repeat the failed course.

For the purpose of improving academic standards, the Faculty Book of Quality has been issued (Faculty Council Resolution 2/2014–15 of 13th October 2014), which aims to standardize the methods of verifying education effects attained by the students in the framework of the courses and the standardization of the rules for evaluating the students in that scope.

*12.9.9. Description of the opportunities for students to learn how different cultural and other influences can impact the provision of veterinary medical services*

While discharging one's professional duties as a veterinary physician, one may be confronted with a variety of circumstances and factors, which may have a potential impact on the provision of medical services. In order to prepare the student for such possibilities, the curriculum includes such courses that enable the comprehension and acceptance of different diversity (e.g. in terms of race, ethnicity, religion, socio-economics, culture, disability). They include: psychology, philosophy, vet. history and deontology, veterinary economics. In addition, during clinical internship students may come into contact with animal owners who come from different backgrounds, have a different sexual orientation, persuasion, professional and economic standing etc. They learn effective communication with different people (clients), how to make a choice of the best medical advice for a given client and solve dilemmas related to the discharge of duties in accordance with the principles of ethics and veterinary deontology. On account of the fact that there are students from different countries at the Faculty (e.g. Ukraine, Turkey, France), the students have an opportunity to exchange their opinions in terms of different diversity typical for a given cultural, ethnical or religious circle.

In the 70-year history of the Faculty of Veterinary Medicine at the Life Sciences University in Lublin, never has a case of closure of the University and the Faculty taken place. In the occurrence of such a necessity (regardless of the cause) the OCE will be informed about it. The Life Sciences University is a state university and suitable state authorities will define the procedures for the eventuality of a breakdown in the University's activity.

## 12.10. THE RESEARCH PROGRAMS

### Standard 10. Research programs

The Faculty of Veterinary Medicine is placed as one of the leading research units among the six faculties of the University of Life Sciences in Lublin. Research activity (Tab. 1) in all areas of basic and clinical sciences belongs to the most critical components of the Faculty of Veterinary Medicine programs. It is the primary way of gaining scientifically based information, and improves the health of animals, their welfare as well as the environment and public health. In this respect our interest is focused both on farm and companion animals, the progress in molecular pathogenesis of the most important animal diseases, their treatment and prophylaxis, control of zoonotic diseases, quality of food of animal origin, and health of aquatic animal species.

Our researchers cooperate closely with national and foreign scientific centers including: the Institute of Veterinary Sciences in Pulawy, the Medical University in Lublin, Faculties of Veterinary Medicine in Pisa, Faculty of Veterinary Medicine of Valencia and Uppsala, Michigan State University, University of Gottingen, Universities of Veterinary Medicine in Hannover, Vienna, Kosice, Ukraine and Justus-Liebig-University Giessen.

All academics are involved in research, which is coordinated by the Faculty Committee for Scientific Research and International Cooperation (FCSRIC). The role of the Committee is to coordinate and manage all research projects prepared by individual scientists or research groups with the goal to approximate the programs to the requirements of the funding entity. As a part of its activity, FCSRIC seeks to establish programs that promote and protect animals and humans who are exposed to zoonotic diseases, and globally enhance the societal importance of the human-animal bond.

The studies are organized by discipline and are often supported by grants awarded before hand by the Committee for Scientific Research and currently by the National Science Center. The current research topics

refer both to basic and clinical research and include the pharmacokinetics of antibiotics, epidemiology of babesiosis, nutritional value and quality of raw materials obtained from snails, testing of bone replacement biomaterials, genetic variation and protein expression, the effectiveness of pharmacotherapy and surgery in the proceedings against hormone-dependent tumors of dogs with monitored concentration of DNA adduct, leptin and KiSS-1/GPR54 system expression in the pituitary gland, and its impact on the sexual maturity rate of sheep, applicable recombinant proteins and DNA virus isolates in domestic AMD Aleutian mink disease diagnosis. The nearest research will focus on subjects listed at the end.

As a result of the opening of the Innovation Center of Animals Pathology and Therapy, the Faculty of Veterinary Medicine offers clinical trials in a variety of species and areas of interest to find or develop future treatments, therapies, and diagnostic tools that are both safe and effective.

One of our principal approaches to accomplish our mission (to improve animal health and productivity as well as welfare) is to provide holistic solutions to challenges in veterinary and human medicine.

The research results endorse the resource of the Faculty that invests in recruiting successive generations of students, and enabling permanent scientific development of academic staff. Furthermore, to achieve our mission of student engagement into scientific activity, each year a group of students organized in the scientific circle called “Student’s Circle of Veterinarian Medics”, carries out experiments, the results of which are presented during the International Student Conference in Wroclaw and Olsztyn. For the last two years top honors were gained by students focusing on:- participation of kisspeptin-10 and peptide 234 in the modulation of FSH secretion by pituitary cells of male lambs *in vitro*;- the level of Q9 and Q10 ubiquinone in hepatocytes isolated from rats with experimentally induced liver cancer;- changes in acute phase proteins, indicators of oxidative stress and damage of the muscle in horses after long and short transport.

Scientists of our Faculty are currently involved in several research projects focusing on the most actual problems in veterinary and human medicine practices and the potential public health consequences. Projects currently submitted for evaluation comprise:

a. Programs undertaken by self-researchers:

1. Modification of hepatic neoplasia induced reprogramming of the monocyte / macrophage system in rats and humans;
2. The value of diagnostically and prognostically selected histological and molecular parameters in tumors derived from canine mast cell;
3. Free living animals as a reservoir of drug resistance genes - phenotypic and genotypic analysis in terms of epidemiology;
4. Studies on the pathogenesis of chronic superficial keratitis in German Shepherds;
5. Sequencing of the *Babesia canis* genome de novo using the Next Generation Sequencing approach;
6. Plasma protein profiles in the course of normal pregnancy and parturition in cows, mares and bitches;
7. Study of the relationship between the degree of maturity of the small intestine epithelium, and the susceptibility to invasion of piglets with *Isospora suis*;
8. Evaluation of the efficacy combination therapy to fight *Mycoplasma bovis* infection in cattle;
9. Oribatida, small mite - a great threat. Genetic characterization and analysis of intermediate host Anoplocephala perfoliata in horses.

b. Programs undertaken by young scientists:

1. The study of the markers in the course of canine babesiosis;
2. Description of tetracycline resistance markers in bacteria of the genus Aeromonas using mass spectrometry MALDI-TOF;
3. Fish and fish products as a potential reservoir of human pathogenic mycobacteria;
4. Analysis of the proteome of tear film of male and female healthy dogs by mass spectrometry.

The most important scientific priorities of our Faculty:

- scientific activity is currently strongly oriented on introducing molecular and genetic analyses of regulatory and pathological processes in companion and farm animals;
- undertaking studies that resolve the most important metabolic, immunological and reproductive disturbances in animals;
- improvement of methods that serve the control of the quality of animal derived food products and the health of animals;
- broadening the scientific cooperation with national and foreign centers with the goal to implement new fields of studies with the engagement of the most effective scientific worker.

Assuming that research activity and the subsequent advancement of scientific staff are the greatest drivers in the progress of education of the next generation of competitors veterinary surgeons, we are committed to continuously modernizing our laboratories and avidly undertake new research topics in collaboration with valuable outside researchers.

**12.11. OUTCOMES ASSESSMENT**

**Standard 11. Outcomes assessment**

*12.11.1. Student educational outcomes*
*12.11.1.a NAVLE school score report data and passage rates over the past five years (Table A)*

For school score report data and passage rates over the past five years (Table A) and student attrition rates with reasons (Table B), see appendix 11-1.

The country-level evaluation system of theoretical knowledge and practical skills of veterinary medicine graduates is different from those that operate in the USA. Graduates of the Faculty of Veterinary Medicine in Lublin, or other faculties in Poland, are not obligated to take the final exam of the NAVLE type. The assessment of the graduate's theoretical and practical knowledge is expressed in the form of a grade included in the graduation diploma. The rules of the graduation diploma grade composition are defined in Academic Regulations, § 48. The average grade from the course of study is calculated as a quotient of the sum of positive and negative grades from exams and final tests, and the number of these grades. With reference to the legal regulations adopted by the Faculty, table A has been modified so that it includes the data covering the period of the last 5 years in regards to: the number of students who begin studies, number of students who graduate with a degree and the average grade on the diploma for the entire year.

*12.11.1.b student attrition rates with reasons*

see appendix 11-1 (Table B)

*12.11.1.c the learning objectives for each of the nine listed competencies, and a summary of the analysis of evidence-based data collected for each of the nine listed competencies used to ensure that graduates are prepared for entry level practice (please note that a listing of core and elective blocks does not constitute evidence of learning). Evidence of student learning outcomes for clinical competencies must be obtained by direct measures. These may include capstone experiences, student portfolios, standardized clinical proficiency exams, or other evaluations of clinical performance based on measurable and published program objectives. Indirect measures should not be used as the sole determinants of clinical competency outcomes. Examples include employer surveys and student course or rotation grades*

The aims of education at the Faculty of Veterinary Medicine in Lublin are not defined in regard to day one skills but with reference to individual subjects, which end with a graded test or an exam. Detailed data about the aims of education are found in subject syllabi. The verification of the graduates' basic competences, which confirms that they have the required theoretical knowledge and practical skills related to the 9 main areas indicated by AVMA, is made in the course of the last two semesters during clinical rotations. In this period students are supervised by experienced clinicians, together with whom they are on clinical duty in health service units of surgical and non-surgical departments, and assist in surgical and obstetric procedures. Furthermore, students participate in veterinary services performed by the mobile clinic. The assessment of students' clinical competence is complemented by the results of practical exams, which the students are obligated to take as part of the programme. The Faculty of Veterinary Science in Lublin has not implemented the standardised clinical competence examination, or other direct methods of evaluating the educational results as indicated by the AVMA with reference to clinical competence. As part of the clinical rotation, which consists of undergoing practical training (internship) in veterinarian clinics, students are obligated to prepare a medical history, separately for farm animals, horses and companion animals, which is recognized as a document prepared under the supervision of the teacher responsible for the internship. The medical history contains the clinical case study, a diagnosis with the consideration of the implemented diagnostic methods, differential diagnosis, undertaken treatment, effects of the therapy, prognosis, and recommendations for the animal owner. The clinical internship ends with an exam on which the student demonstrates the medical history they have prepared and thorough theoretical and practical knowledge of the pathology and therapy of the species the internship relates to. The completion of the internship must ensure that the student has basic competence and skills summarized in the list of day one skills which correspond to the AVMA competences. The internship assessment is conducted twice, i.e. after the end of semesters X and XI, with an entry in the student record book, based on the internship exam result (written or oral test ). The assessment is made by the examination committee, which is composed of the persons responsible for the implementation of individual clinical disciplines within the programme subjects. The rules of the clinical internship implementation are defined by the regulations authorized by the Faculty Board. The understanding and accomplishments of our students in regard to biomedical research is evaluated by monitoring the number of students participating in the research program for students and by the number of students who participate in conferences, presenting posters or publishing papers in professional journals. A detailed analysis of the educational effects at the Faculty is performed by the preparation of an annual report by the Faculty Committee for Education Quality. The report is subjected to public discussion on the Faculty Board forum, during which the strong and weak points of educational process are analysed and the conclusions in regards to the possibility and manner of problem solving in the area of teaching methods are drawn.

*12.11.1.d. employment rates of graduates (within one year of graduation) (Table C)*

The Faculty has no detailed information in regards to the employment of its graduates 1 year after graduation, therefore it is not possible to provide relevant figures in table C. Survey data collected from final year students directly before graduation reveal that nearly 100% of the future graduates declare their willingness to work as veterinary physicians. Estimates show that over the past 5 years 95 to 98% of students who completed surveys provided at graduation, already had jobs including PhD students (4%). The average number of job offers was 1.3 per ULSL student compared with a national average of 1.1 job offers per student over the same time period. Due to mobility, we are not able to determine the location and employment of students who have not accepted jobs by the time of graduation.

*12.11.1.e. assessments of graduating seniors; and assessments of alumni at some post-graduation point (for example, three and/or five years post-graduation) assessing educational preparedness and employment satisfaction*

Approximately 81% or more of 1-year and 5-year alumni felt their education was good or very good. Their level of comfort with their overall technical competence ranged from 63 to 73 on a scale of 1 to 100. Areas the areas of the highest level of satisfaction included history taking, physical examination, and administering intravenous injections. Areas of the lowest level of satisfaction included X-ray (lack of access for large animals, specially for horses), business and reproduction.

*12.11.1.f. assessments of employers of graduates to determine satisfaction with the graduates*

The employers surveyed rated their overall level of satisfaction with the technical competence of new graduates at 70 to 73 on a scale of 1 to 100. Areas of the highest level of satisfaction included history taking, physical examination, medication prescription, dermatology in small animals, dentistry and ophthalmology. Areas of the lowest level of satisfaction included orthopedic surgery, X-ray and business.

*12.11.1.g. assessments of faculty (and other instructors, for example interns and residents) related to such subjects as adequacy of clinical resources, facilities and equipment, library and information resources, etc.; and preparedness of students entering phases of education*

The data in regards to the adequacy of clinical supplies, rooms, equipment, library and information resources, and the degree of students' preparation for pre-clinical and clinical education, is obtained through the questionnaires filled in by the graduates. The analysis of the survey data for the period of the last 5 years demonstrates that a vast majority of graduates expressed the library and information resources as well as caseload of small animals as adequate. Nearly half of the graduates expressed the clinical facilities were inadequate. When considering student improvement between the beginning and end of the preclinical phase of the curriculum, areas in which scores (on a scale of 1 to 100) improved by $\geq$ 10 included clinical skills, integration of basic and clinical science, diagnostic skills, patient management skills, knowledge base in farm animals, and knowledge base in small animals. When considering improvement between the beginning of the clinical phase of the curriculum and graduation, areas in which scores (on a scale of 1 to 100) improved by $\geq$ 10 included clinical skills, diagnostic skills, patient management skills, veterinary client interaction skills, clinical competency in small animals, and population care in small animals. Cited strengths of both phases of the curriculum included high quality experienced faculty, breadth and depth of the curriculum, and a large and diverse caseload. Cited weaknesses of the preclinical curriculum were the large amount of information students are expected to assimilate, insufficient oversight of the curriculum, and insufficient opportunity for small group learning. Cited weaknesses of the clinical phase of the curriculum were difficulty retaining high quality clinical faculty, inadequate physical facilities, and excessively short clinical rotations. Faculty recruitment and retention and the replacement of outdated facilities were cited as the two most important issues facing the College in the near future.

*12.11.1.h. Additional assessments that might assist the college in benchmarking its educational program.*

Additional indicators of the success of our educational program include faculty extramural awards, honors, and scholarly activity and textbooks published by faculty members. Participation of faculty members in local, regional, national and international continuing education programs also reflects the quality of our educational programs. Three of our Faculty Professors are the heads of specializations run by The National Council of Veterinary Specialization. A positive distinguishing feature of the Faculty of Veterinary Medicine in Lublin is the introduction of several programmes of its own to the curriculum, which extend beyond the standard requirements, including veterinary ophthalmology, gastroenterology, dermatology, dentistry and oncology, which provide students with the possibility to expand their clinical abilities.

In order to follow the expectations of assuring a high quality of teaching, authors of the "VETVIP" project, created an innovative concept and approach for teaching basic topics for veterinary students of the II year of studies. Our Faculty was the coordinator of the project, which was realized in 2012-2014 in partnership with academic centers from Hannover and Budapest and the company SME from Munich. More data can be found on www.vetvip.eu. This concept is based on the analysis of virtual problems (patients) what is well known for clinical teaching but not for basic topics. This approach shall ensure the integration between theoretical and practical knowledge in order to increase the motivation of students and their cognitive skills as soon as the IInd year. The aim of the project was the scientific evaluation of usefulness of innovative methods of knowledge acquisition in order to increase learning success. The realization of this aim covered the creation of 30 virtual cases (10 from each Biochemistry from our Faculty, Biochemistry of the University of Veterinary Medicine in Hannover as well as Physiology of the Faculty of Veterinary Medicine in Budapest) elaborated by the use of professional basic, preclinical and clinical knowledge. Each virtual problem is intended for self-study, is based on problem base approach and is available by invitation on the digital platform CASUS. Preliminary results indicate an increase of positive marks as well as a decrease in negative marks of biochemistry exams in partner institutions. Moreover, students expressed their interest in this form of teaching in surveys. Currently students from Polish veterinary Faculties and faculties in Bristol and Helsinki use these cases for self-study.

### 12.11.2. Institutional outcomes

*12.11.2.a. Describe how the college evaluates progress in meeting its mission (for example, benchmarking with other institutions, etc.).*

With broad faculty input, the University formulated a strategic plan in 2010 that included specific strategic goals in many areas of endeavor including research, student quality and diversity, educational programs, facilities and delivery of clinical services, development, and public relations. Existing strategic goals are evaluated on an annual basis by the Deans and Chair Advisory Group to determine if these goals remain realistic and desirable in the present educational and economic climate. If judged appropriate and realistic, progress is evaluated and adjustments are made to assure continued success in achieving the goals outlined in the strategic plan. Information used to evaluate progress includes research activity (e.g. intramural and extramural grants and contracts, scientific publications), measures of student quality and success (e.g., number of applicants per seat, number of job offers), student and faculty evaluations of curriculum, benchmarks of faculty success (e.g. awards, honors, scholarly activity, textbooks, continuing education), assessment of clinical programs (e.g., caseload, clinic revenue, client satisfaction surveys, tracking of referrals), development (e.g. gifts, endowed positions), and public relations.

*12.11.2.b. Describe the adequacy of resources and organizational structure to meet the educational purposes*

The facilities of the College range from adequate to excellent in their ability to meet our educational purposes. The structure of the clinics is discipline orientated with a Department and Clinic of Animal Surgery, Department and Clinic of Animal Internal Medicine, Department and Clinic of Animal Reproduction and Department and Clinic of Infectious Diseases (while teaching occurs according to species in the new curriculum). There are plans to restructure the clinics from the discipline to the species system. Presently many faculties favor the species oriented system. However, unless the necessary manpower, patient load and financial support are provided, this system may not be the optimal choice. We had just finished the construction of the new Clinics, completely equipped with modern medical and diagnostic equipment, at the end of 2014. There are also all necessary research laboratories. This Clinical center appears to be one of the best in Central Europe. We continue to produce graduates who are in demand in the private practice sector based on the number of job offers. Employer feedback indicates that our graduates are well prepared for practice , which is partially due to the appropriate caseload and the large amount of patient care and client communication responsibilities our students shoulder at the clinic.

*12.11.2.c. Describe outcomes assessed for college activities that are meaningful for the overall educational process (for example, scholarly activity of the faculty, faculty awards, faculty and staff perception of teaching resources, student satisfaction with the educational program, teaching improvement benchmarks, and others). If your program assesses other outcomes, briefly describe the results.*

Scholarly activity of the Faculty is conducted in strict connection with the educational process. This rule concerns both basic subjects as well as preclinical and clinical disciplines. As an example of the idea on the ground of clinical activities, one can point out the new clinical complex functioning as an innovative centre for pathology and therapy of animals. This new investment, besides bringing clinical veterinary services, serves mainly to propagate scientific achievements within students. The goal behind this idea is the creation of suitable

conditions to conduct modern didactic processes based on fundamental principle of evidence-based medicine. As far as teaching resources are concerned the Faculty is assessed both by didactic staff and students as is adequate. Thanks to the engagement of all academic teachers, the Faculty is doing its best to assure suitable teaching standards to our students. To exemplify this process on the basis of teaching of clinical subjects, one can point out the free access to experimental farms belonging to University for students, several agreements signed with private animal farms and field veterinarians enabling the realisation of extramural clinical training, as well as the accessibility of highly sophisticated clinical equipment in the innovative centre for pathology and therapy of animals. All those activities are intended to improve clinical competence of students and graduates. Moreover, as it was mentioned above, a high degree of faculty participation in regional, national, and international continuing education is an indicator of faculty achievement in postgraduate veterinary education.

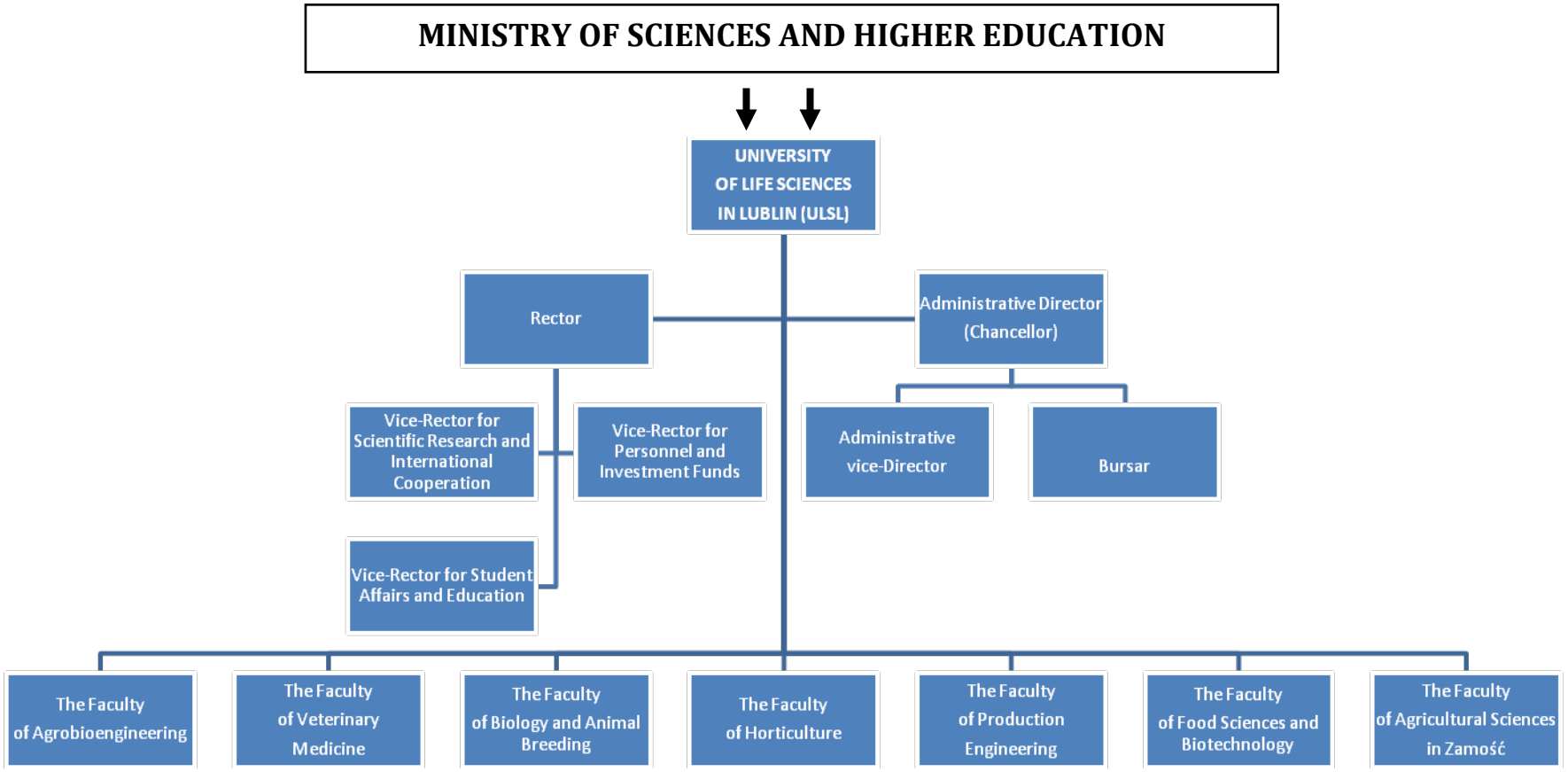
*12.11.2.d. Describe how outcome findings are used by the college to improve the educational program (give examples).*

One of the major weaknesses of education at the Faculty of Veterinary Medicine in Lublin, observed by students and academic teachers alike, is the students' limited access to animals and clinical cases, which is reflected in the quality of practical training and clinical competence. A reason for this state of affairs is too large a number of students admitted for the first year of studies, which results in an increased number of students and a limited number of academic teachers and animals, patients of the veterinary clinics, especially with reference to farm animals and horses. In an attempt to solve the problem recent changes have been made in the curriculum to enhance the clinical competencies of our students including the development of the extramural program to increase student experience of the “day one skills” (9 areas of clinical competencies). It includes agreements with appointed veterinarians, farms and stables. On the basis of these program student have extra 75 hours (outside the curriculum) of clinical practice with farm animals and horses, during which they improve their professional skills in diagnosis, pathology and therapy of all kinds of diseases and performing appropriate procedures and administering drugs.

# APPENDICES

## Appendix 1-1 Organizational chart of the University of Life Sciences in Lublin (ULSL)

The flow chart indicating the position of the college of veterinary medicine in the university structure showing lines of authority and responsibility. Names and titles of principal university administrative officers related to the college are listed below.



**Appendix 2-1 College expenditures and revenues**

12.2.1. *Complete Tables A and B for the past five years and analyze the trends for each category*

TOTAL EXPENDITURES FOR IMMEDIATE PAST 5 FISCAL YEARS Direct and Indirect Expenses in Polish zlotys (PLN)

Table A

| Yr | Instruction | Academic support | Student Services | Services of Educational Activity | | | | Un-sponsored Student Aid | Sponsored Student Aid | Sponsored Research | Other Sponsored Activity | Ext & Public Service | TOTAL DIRECT EXPENSES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Teaching Hospital | Diagnostic Lab | Other | | | | | | | |
| | | | | | | Amount | Type | | | | | | |
| 2010 | 81 268 343.39 | 50 724 049.81 | 5 693 290.33 | | | | | 13 586 400.00 | | | | | 166 169 152.73 |
| 2011 | 84 540 612.15 | 50 034 660.35 | 7 768 529.14 | | | | | 13 986 920.00 | | | | | 156 330 721.64 |
| 2012 | 91 380 437.84 | 51 338 826.45 | 6 750 783.96 | | | | | 13 863 499.00 | | | | | 163 333 547.25 |
| 2013 | 88 694 429.83 | 54 649 402.26 | 7 108 265.77 | | | | | 13 018 327.50 | | | | | 163 470 425.36 |
| 2014 | 69 382 169.80 | 48 355 784.81 | 6 668 076.30 | | | | | 13 149 036.50 | | | | | 137 555 067.41 |
| % | 2.75 | 0.73 | 24.25 | | | | | 0.60 | | | | | 2.58 |

COLLEGE REVENUE (SOURCE OF FUNDS)

FROM ALL SOURCES FOR IMMEDIATE PAST 5 FISCAL YEARS (in Polish zlotys- PLN)

Table B

| Yr | State Appropriations | Tuition & Fees | Is tuition an estimated amount? | Endowment Income (current yr.) | Gifts for current use | Sponsored Program Income/Cost Recovery | SALES and SERVICES | | | Reserves and Transfers | TOTAL REVENUE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Teaching Hospital | Diagnostic Lab | Other Sources from Sales & Services | | |
| 2010 | 103 192 914.86 | 10 491 128.99 | yes | | 40 500.00 | 1 148 176.99 | | | 7 571 296.70 | | 122 444 017.54 |
| 2011 | 105 366 826.03 | 10 134 398.02 | yes | | 125 055.00 | 1 215 066.92 | | | 6 788 377.35 | | 123 629 723.32 |
| 2012 | 102 758 774.98 | 9 398 354.04 | yes | | 55 982.10 | 2 294 013.90 | | | 7 374 234.58 | | 121 881 359.60 |
| 2013 | 109 307 284.99 | 9 673 704.12 | yes | | 54 000.00 | 1 895 462.26 | | | 6 766 588.61 | | 127 697 039.98 |
| 2014 | 112 987 470.00 | 1 358 809.47 | yes | | 12 832.00 | 1 738 015.18 | | | 10 093 004.48 | | 136 190 131.13 |
| Percent change over 5 | 2.5±3.7 | 2.4±10.8 | | | 18.4±130.5 | 17.2±48.7 | | | 9.8±27.6 | | 2.7±3.6 |

Appendix 12.2.3.

**Figure a. Faculty income from statutory activity (SA) and research projects grants (RP)**

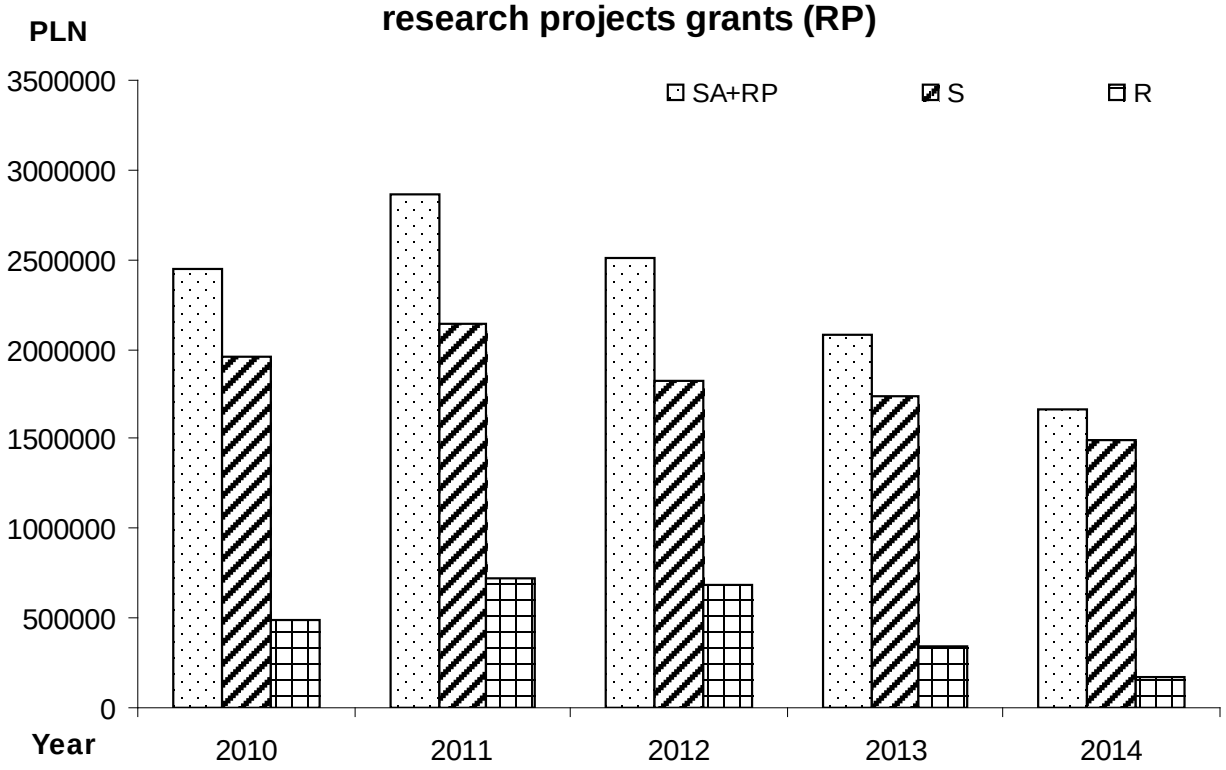
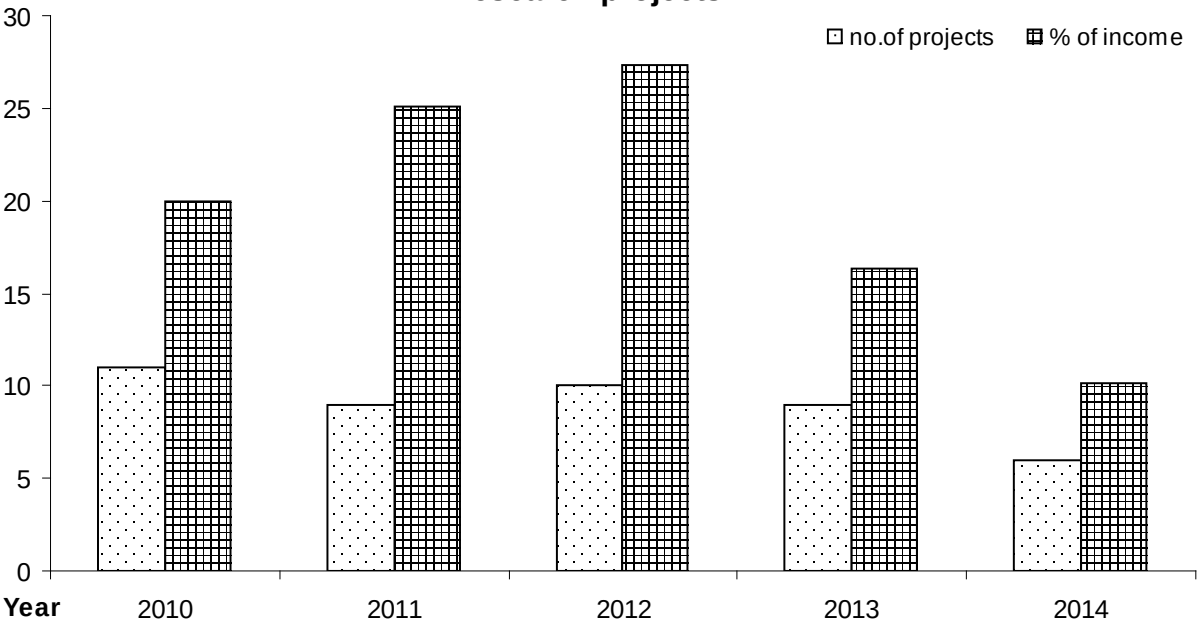



**Figure b. Number of research projects and respective precentage of the faculty income from statutory activity and research projects**




**Appendix 3-1. Facilities used for theoretical, practical and supervised teaching**

Coll. Vet. A, a lecture hall in the building of Collegium Veterinarium is used by the Department of Animal Anatomy and Histology, the Department of Biochemistry, the Department of Animal Physiology, the Department of Preclinical Veterinary Sciences and Institute of Biological Bases of Animal Diseases. The lecture hall is equipped with a multimedia projector and sound system.

Coll. Vet. B, a lecture hall in the building of Collegium Veterinarium is used by the Department of Food Hygiene of Animal Origin, the Department of Preclinical Veterinary Sciences, and the Institute of Biological Basis of Animal Diseases. The lecture hall is equipped with a multimedia projector, sound system and air conditioning.
The lecture hall[1)] in the Department and Clinic of Internal Diseases is used for lectures on clinical subjects. The lecture hall is also equipped with a multimedia projector.

Table 12.3.4.a.1. Facilities for lecturing

| Number of places per lecture hall | | | |
|---|---|---|---|
| Hall | *Coll. Vet.* A | *Coll. Vet.* B | Clinics[1)] |
| Places | 180 | 135 | 120 |
| Total number of places in lecture halls | | | 435 |

[1)] available by the end of 2013; currently a new building Veterinary Clinics - Innovative Pathology and Therapy Centre of Animals (see 12.3.6.)

At the *Collegium Veterinarium* there are 8 classrooms; well equipped for student group practical work during laboratory lessons. The characteristics of these classrooms are displayed in the table 12.3.4.a.2. below.

Tab. 12.3.4.a.2. – Facilities for group work at the *Collegium Veterinarium*

| Laboratory | Room No. | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Dissecting room A | Dissecting room B | 120 | 236 | 238 | 301 | 401 | 501 |
| Places | 120 | 80 | 40 | 35 | 30 | 36 | 35 | 30 |
| Total number of places in laboratories | | | | 406 | | | | |

**Dissecting rooms A and B** is used by the Department of Anatomy and Animal Histology to conduct classes on anatomy and topographic anatomy. Rooms are equipped with 2 teachers' desks, 2 podiums, 2 folding boards, and 10 dissecting tables. In dissecting room A there is a large dissecting table fixed to the floor, used to perform autopsies (eviscerations). The rooms are equipped with dry chemical extinguishers and first aid cabinets.

**Classroom No. 120** is used by the Department of Biochemistry. The laboratory for classes has a multimedia projector and 3 computers, 3 centrifuges, 2 water baths, 4 spectrophotometers, 2 pH-meters, small laboratory equipment (pipettes), and 2 fume hoods. The room is equipped with a first aid cabinet, fire extinguisher, emergency eye wash showers and disinfectants.

**Classroom No. 236** is used by the Department of Animal Anatomy and Histology to conduct laboratory classes in histology and embryology. The room is equipped with: 5 laboratory tables, 35 light microscopes, a computer with Internet access combined with a multimedia projector, teacher's desk and board, 28 illuminated display cabinets with classic histology preparations and transmission electron microscopy pictures, 2 cupboards for storing didactic preparations, a cupboard with slides. In addition, there is a display of old microscopes and microtome in the room. The room is blacked out with roller blinds.

**Classroom No. 238** is used by the Department of Animal Physiology. The classroom has a multimedia projector, 10 personal computers equipped with software for simulations of physiological processes (the PhysioExe software), VHS and DVD players, electrocardiograph, pulse and oxymeter (Beurer), spirometers: Barnes, Stolberg and electronic (Spirobank), peak flow meter, AdInstrument PowerLab system – education bundle, kymographs, induction coils, pressure manometers, stethoscopes, stationary cardio bike, light microscopes, myographs, Mosso ergograph, chambers for counting erythrocytes, leucocytes, protozoan, water bath, and incubator. This room is equipped with a first aid cabinet, fire extinguisher, fume hood, and disinfectants**.**

**Classroom No. 301** is used by the Department of Food Hygiene of Animal Origin and the Department of Preclinical Veterinary Sciences. The classroom is equipped with 6 laboratory tables with gas, electric and water installation, board, lectern, multimedia (video/data) projector, screen, sunblinds, and student lockers. The classroom is also equipped with a first aid cabinet, fire extinguisher and two entry/exit doors.

**Classroom no. 401** is used by the Institute of Biological Basis of Animal Diseases - it has microscopes, magnifying glasses, incubators, a multimedia projector, computer, laboratory tables with gas, electrical and water installation, laminar chambers, and microscopic staining sets. The room is equipped with a fire extinguisher, UV lamps, disinfectants, and first aid cabinets.

**Classroom No. 501** is used by the Department of Food Hygiene of Animal Origin, the Department of Preclinical Veterinary Sciences, and the Institute of Biological Bases of Animal Diseases. The classroom is

equipped with 5 laboratory tables, a board, air conditioning, and multimedia projector. The classroom is also equipped with a first aid cabinet and fire extinguisher. Two entry/exit doors are available.

At the veterinary clinics facilities there are classrooms well equipped for supervised group work and for students' group practical work. The characteristics of these classrooms are displayed in the table 12.3.4.a.3., 12.3.4.a.4. below.

Table 12.3.4.a.3. **Rooms for group work - Clinics** (Number of rooms that can be used for supervised group work)

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Room places | No.1 | No. 2 | No. 3[1)] | No. 4 | No. 5 | No. 6 | No. 7 | No. 8 |
| | Surgical training room no.19 45 places | Amphitheatric room no. 27 30 places | No.40 35 places | No. 10 30 places | 105 (Vivarium) 80 places | No. 5 35 places | | |
| Room places | | | | | | | | |
| | | | | | | | | |
| Total number of places in rooms for group work: 255 | | | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| Lab. | Lab.1 | No. 2 | No. 3 | No. 4 | No. 5 | No. 6 |
| Places | Endoscopy room No. 1 | Orthopedic operating theatre No. 7 | Operating theatre for small animals No. 9 | Operating theatre for small animals No. 11 | Eye surgery room No. 5 | Dentistry room No.9 |
| | 30 places | 10 places | 15 places | 15 places | 15 places | 15 places |
| Number of places in laboratories: 145 | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| Lab. | No. 7 | No. 8 | No. 9[1)] | No. 10 | No. 11 | No. 12 |
| Places | Didactic room for operations on dead animals No. 28 | Operating theatre for large animals No. 1 | No. 11 | No. 18 | No. 19 | No. 6 |
| | 15 places | 30 places | 35 places | 30 places | 30 places | 30 places |
| Number of places in laboratories: 200 | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| Lab. | No. 13 | No. 14 | No. 15 | No. 16 | No. 17 | No. 18 |
| Places | Lab. Radiology and Ultrasonography No. 10 | Operating theatre for small animals No. 12 | Operating theatre for small animals No. 13 | Operating theatre for large animals No. 4 | No. 5 | Necropsy room No.14 |
| | 15 places | 15 places | 15 places | 30 places | 35 places | 35 places |
| Number of places in laboratories: 70 | | | | | | |
| **Total number of places in laboratories: 415** | | | | | | |

[1)] available by the end of 2013; currently a new building Veterinary Clinics - Innovative Pathology and Therapy Centre of Animals (see 12.3.6.)

The Department and Clinic of Animal Reproduction has a No. 4 – audio-visual system – a multimedia projector, a laptop computer and a screen. The room is equipped with fire extinguishers, UV lamps, disinfectants, and first aid cabinets.
The Department and Clinic of Animal Surgery has No. 1 and 2 amphitheatres, and multimedia projector, Sanyo TV set, and fire extinguisher.
The Department and Clinic of Internal Diseases – No. 3[1)]
The Department and Clinic of Infectious Diseases has a No. 5 (Vivarium building) – multimedia room (computer, multimedia projector, screens, VHS player, indicators, picture channel from consultation rooms to the seminar room)
The Department of Pathological Anatomy – No. 6 (multimedia projector, microscopes, histologic slides).

Table 12.3.4.a.4. Rooms for practical work (Number of labs for practical work by students)

[1)] available by the end of 2013; currently a new building Veterinary Clinics - Innovative Pathology and Therapy Centre of Animals (see 12.3.6.)

**The Department and Clinic of Animal Surgery**

**No. 1**: operating table, lis 1020 laser, arthroscope, instruments for arthroscopy, medical aspirator, endoscope for examining small animals with accessories, monitor and picture channel, digital printer for data backup, USG machines, EKG apparatus, ozonator, cryotherapy apparatus,
**No. 2:** apparatus for inhalation anesthesia with accessories, pulse oximeter, electrically controlled
operating table, wall operating lamp, 2 ceiling operating lamps, sterilamp, oscillating drill, 2 instrument tables, instrument cabinets with instrument sets for orthopedic operations,
**No. 3:** SU-2 operating table, apparatus for inhalation anesthesia with accessories, 2 ceiling operating lamps, 2 sterilamps, operating microscope, Advisor life functions monitor, electrocauter,
electrically-controlled operating table, medical aspirator, instrument table**,**
**No. 4:** operating table, 1 apparatus for inhalation anesthesia with accessories, 2 ceiling operating lamps, standing bifocal operating lamp, X-ray unit for intraoperative X-rays, X-ray protective screen, X-ray table, NBN sterilamp, Hellige Senson cardio monitor, and 2 instrument tables,
**No. 5**: operating lamp with camera, picture channel and monitor, apparatus for inhalation anesthesia with respirator, cardio monitor with an option of bloodless measurement of blood pressure, microscope with picture channel and monitor, phacoemulsificator, heated operating table, table for minor operations, audio visual system – multimedia projector, laptop computer and Brilliant screen, two didactic cupboards for teaching surgical instruments and three fire extinguishers**,** ophthalmoscopes: direct Keller, indirect – Ventage with assistant attachment, ophthalmoscope - Pan-Optic, Nippon slit lamp, Handy fundus camera, lens sets for gonioscopy - Susman apparatus for measuring intraocular pressure –Tono-Pen Vet,
**No. 6:** electrical operating table, wall operating lamp, dental mobile cabinet, piezodentultrasonic dental scalar, X-ray apparatus for dental radiograms, semi automatic X-ray film developer, protective screen, dentistry unit with instruments, 1 instrument tables, dental curing light, didactic aids: dentistry materials and instruments, synthetic models of animal dentition, bone specimens,
**No. 7**: operating lamp, operating table, instrument table, equipment cabinet**,**
**No. 8**: Haico hydraulic operating table, B/103/1type rope lift, apparatus for inhalation anesthesia with accessories, holofix evaporator, compressor installation, compressor for anesthetic apparatus, instrument tables).
**Other rooms of the Clinic**:
**Consultation room (dispensary) - No. 3** - for small animals – examining table, Wap 200 scale, standing unifocal operating lamp, wall UV lamp, negatoscope, instrument table, instrument cabinet,
**Instrument preparation room – No. 10** – instrument cupboards, instrument sets for soft tissue operations, instrument sets for ophthalmologic surgeries, instrument sets for orthopedic operations, sets for minor operations,
**Sterilization room – No. 12** – autoclave for instrument sterilization, hematological centrifuge, DE-5 distiller, foil sealing machine, Oster shaver, MPW 350 hematological centrifuge,
**Preparation room for large animals – No. 3** - instrument cupboards – instrument sets for soft tissue operations, angle grinder, lever shears for hoof trimming, device for horn removal, crush for large animals, blacksmith's set, electrical rasp,
**Preoperative room** - Crush for large animals, cart for transporting large animals,
**Rooms for laboratory classes**: orthopedic surgery room No. 7, operating theatre No. 9, operating theatre No. 11 and ophthalmologic surgery room No. 19 are equipped with sterilamps,
Disinfectants can be found in all the rooms of the Department and Clinic of Animal Surgery. Fire extinguishers are in each building.

**The Department and Clinic of Internal Diseases[1)]**
**No. 9:** Mindray 6200 ultrasound instrument with 3 transducers, krusse ps 250 animal scale, Siemens maz lamp, Aohua vme 2000 endoscope, oxygen concentrator.
Dermatological Surgery Analyser to determine biophysical parameters of skin MPA 5, 3 microscopes, dermatoscope, 2 Wood's otoscope lamps, EKG BTL-08MT, Simens Kardiostat 701, Simplicard E 10, Holter Mortar+, Fonendoscope Welch Allyn, portable leash enabling leading animals for didactic purposes, 5 computers and 5 microscopes, multimedia projector,

In rooms – lecture hall, seminar room No. 116, room No. 11, as well as in the main building of the Clinic (the Stable) there are fire extinguishers; in the rooms for animal examination there are first aid kits; in room No.32 there are disinfectants, and in dermatological surgery there are ultraviolet lamps. There are medical waste bins in the rooms for animal examination.

[1)] available by the end of 2013; currently a new building Veterinary Clinics - Innovative Pathology and Therapy Centre of Animals (see 12.3.6.)

**Department of Pathological Anatomy**
**No. 17 -** 30 microscopes for students, projector, device for receiving and recording image**,**
**No. 18 (Necropsy room) - 6** tables for post-mortem examination of small and big animals, scale, boiler, ultraviolet lamp, insecticide lamp, necropsy room disinfecting agents
/Aerodesin 2000, Lysoformin/ and disinfectants for hands and skin /AHD 2000, Manusan /

**Laboratory for Radiology and Ultrasonography**
**No. 13**: two digital X-ray machines with a flat panel detector (Intuition HFe 601 and Sourte-Ray 130 with a separate workstation, diagnostic station with a disk for archiving and printer for digital X-ray images Kodak Dry View 5800 Laser Imager; negatoscopes NGP 31, TV Samsung); four ultrasound machines (Esoate MyLab 40 with four probes, Mindray DC-7 with tree probes and Honda 4000 with tree probes and bipsy gun); fire extinguisher, disinfecting agents, first-aid kit, lead rubber aprons Pb 0.5, thyroid protection Pb 0.5, X-ray gloves Pb 0.25 and 0.5.

**Department and Clinic of Infectious Diseases**
**No. 10 (room 18 - Vivarium):**
1. videogastroscope KARL STORZ: 1,4 m long, diameter 10 mm, outlet duct 2,8 mm, used for diagnosing affections of the upper alimentary tract and upper airways of small animals
2. videogastroscope for big animals KARL STORZ: 3 m long, outlet duct 2,8 mm, used for diagnosing affections of the upper alimentary tract and upper airways of farm animals and horses
3. fiberoscope KARL STORZ: 1m long, diameter 3mm, outlet duct 1,8 mm,
4. cystoscope set with optical route: the set for bitches contains trucks and additional equipment, 30 cm long enables imaging changes of the mucous membrane of urethra and bladder, sampling bioptates, and conducting minor operations
5. camera processor KARL STORZ Telecam SL II 202130 20
6. image archiving system KARL STORZ AIDA Control 200960 20
7. portable camera processor with archiving system KARL STORZ
8. aspirator Victoria II CHEIRON
9. elektrocauter EMED ES350 Surgilogic - elecrosurgerical system employed in endoscopy
10. insufflator STORZ hamou endomat 26331020: enables leading gas, e.g., to fill the stomach and observe its mucous membrane
11. oxygen concentrator for continuous oxygen therapy KRÖBER 02
12. oxygen cage for small animals
13. patient's monitor MINDRAY PM-9000 Vet: portable patient's monitor enabling observation of basic hemodynamic parameters ECG, Resp, NIPC, SpO2, 2Temp, and direct measurement of the blood pressure

**No.11 (room 19 - Vivarium):**
1. Ultrasound scanner ALOKA prosound SSD-4000SV: hi-tech device for ultrasound and echocardiological examination of small animals
2. ECG SCHILLER VET AT-1- device for electrocardiographic examination
3. Holter ROZINN RZ 153+ - device for Holter's examination
4. EKG – Schiller CARDIOVIT AT-101 – device for electrocardiographic examination
5. Defibrylator – Schiller DEFIGARD 4000
6. Holter – Schiller _ MEDILOG FD5plus – device for Holter's examination
7. USG – Esaote MyLab ClassC- high-tech device for ultrasound and echocardiological examination
8. USG – Philips EPIQ 5 – high-tech device for ultrasound and echocardiological examination of small animals, and for elastography

**No. 12 (room 6 - Building of Department of Epizootiology – laboratory for dialysis)**
1. Device for continuous kidney-replacement therapy and blood plasma FRESENIUS MULTIFILTRATE SYSTEM
2. X-ray examination room RTG an X-ray machine ZooMaxGOLDCCD/Control-X Medical

The rooms are equipped with fire extinguishers, automatic fire-fighting protection, sprinkler systems, first-aid kits, disinfecting agents, sinks, fume cupboard; medical, microbiological, and biological waste bins, UV lamps.

**Department and Clinic of Animal Reproduction**

Table 12.3.4.a.5.: Facilities for clinical work and student training

| | | |
|---|---|---|
| Small animals | No. of consulting rooms<br>No. of surgical suites | 3<br>2 |
| Equine and food animals | No. of consulting rooms<br>No. of surgical suites | 2<br>1 |
| Other | - | - |

**Department and Clinic of Animal Surgery**

Table 12.3.4.a.6.: Facilities for clinical work and student training

| | | |
|---|---|---|
| Small animals | No. of consulting rooms<br>No. of surgical suites | 3<br>8 |
| Equine and food animals | No. of consulting rooms<br>No. of surgical suites | 1<br>1 |
| Other | - | - |

**Radiology and Ultrasonography Laboratory**

Table 12.3.4.a.7.: Facilities for clinical work and student training

| | | |
|---|---|---|
| Small animals | No. of consulting rooms | 2 |
| Equine and food animals | No. of consulting rooms<br>No. of surgical suites | |
| Other | - | - |
| Small animals | No. of consulting rooms<br>No. of surgical suites | No. 34 Ultrasonography Surgery Tests<br>No. 32 Consulting room for healthy animals<br>No. 37 Consulting room for sick animals<br>No. 38 Cardiological surgery<br>No. 26 Endoscopy surgery |
| Equine and food animals | No. of consulting rooms<br>No. of surgical suites<br>Operating rooms | Animals admitted to the clinic for stationary treatment or consultation are kept in stalls or stands devised for particular species (table 6.1), in the department's main building there is a crush for surgical treatment of large animals<br>No.44 consulting room for large animals (a room for a veterinary doctor and students, a place for storing files and conducting administration)<br>No. 12 room for storing tools and equipment |
| Other | - | - |

**Department and Clinic of Internal Diseases[1)]**

Table 12.3.4.a.8.: Facilities for clinical work and student training

[1)] available by the end of 2013; currently a new building Veterinary Clinics - Innovative Pathology and Therapy Centre of Animals (see 12.3.6.)

**Department and Clinic of Infectious Diseases**

Table 12.3.4.a.9.: facilities for clinical work and student training

| | | |
|---|---|---|
| Small animals | No. of consulting rooms<br>No. of surgical suites | 3: No. 18, 19, 20 (vivarium)<br>1: No. 6 (Epizootiology department building) |
| Equine and food animals | No. of consulting rooms<br>No. of surgical suites | |
| Other | - | - |

**Department of Food Hygiene of Animal Origin**

**Slaughterhouse facilities**

In slaughterhouses, students have a classroom or a conference room at their disposal.
"Animex" Group S.A., Starachowice Branch, ul. Krańcowa 4, 27-200 Starachowice
"Indykpol" S.A., Lublin Branch, ul. Zimna 1, Lublin
„Ł-meat" Meat Plant Łuków S.A., ul. Przemysłowa 15, 21-400 Łuków
"Ryjek" Meat Processing Plant, Sp.j., Nasutów 173, 21-025 Niemce

**Foodstuff processing unit**

In processing plants, students have access to a classroom or conference room.
"Animex" Group S.A., Starachowice Branch, ul. Krańcowa 4, 27 – 200 Starachowice

„Indykpol” S.A. Lublin Branch, ul. Zimna 1, Lublin
„Ł-meat” Meat Plant Łuków S.A., ul. Przemysłowa 15, 21-400 Łuków
“Ryjek” Meat Processing Plant, Sp.j., Nasutów 173, 21-025 Niemce
“Elite Expeditions” Sp. z o.o. – Game Processing Plant, ul. Wachniewskiej 12, 22-470 Zwierzyniec
“Bieluch” Dairy Cooperative, ul. Chemiczna 4, 22-100 Chełm
„Michowianka” Dairy Cooperative, ul. Tysiąclecia 19, 21–140 Michów
„Spomlek” Dairy Cooperative ul. Kleeberga 12, 21–300 Radzyń Podlaski
Dairy Cooperative in Ryki, ul. Żytnia 3, 08–500 Ryki

*12.3.4.b. teaching hospital(s), pharmacy, diagnostic imaging, diagnostic support services, isolation facilities, intensive/critical care, necropsy, and related equipment,*

**Facilities used for clinics and hospitalization**
The faculty does not have a structurally distinct hospital but this function is performed by the existing clinics in the disciplinary system. See table below.

**Department and Clinic of Animal Reproduction**
Table 21.3.4.c.1.: Places available for hospitalization and animals to be accommodated

| | **Species** | **Number of places** |
|---|---|---|
| Regular hospitalizations | Cattle | 3 stalls |
| | Horses | 2 stalls |
| | Small ruminants | 1 stall |
| | Pigs | 1 stall |
| | Dogs | Room 15 – 6 cages |
| | Cats | Room no. 15 – 6 cages |
| | Other [1)] | - |
| Isolation facilities | Farm animals and horses | 2 stalls |
| | Small animals | |
| | Other | |

**Department and Clinic of Animal Surgery**

Table 12.3.4.c.2.: Places available for hospitalization and animals to be accommodated

| | **Species** | **Number of places** |
|---|---|---|
| Regular hospitalizations | Cattle | 6 |
| | Horses | 4 |
| | Small ruminants | - |
| | Pigs | - |
| | Dogs | Room no. 14 - 4 cages, room no. 28 – 7 cages |
| | Cats | Room no. 14 – 4 cages |
| | Other [1)] | - |
| Isolation facilities | Farm animals and horses | |
| | Small animals | |
| | Other [1)] | Room no. 28 -8 bird cages |

**Department and Clinic of Internal Diseases[1)]**

Table 12.3.4.c.3.: Places available for hospitalization and animals to be accommodated

| | **Species** | **Number of places** |
|---|---|---|
| Regular hospitalizations | Cattle | 2 large closed stalls, 5 stands |
| | Horses | 2 closed stalls |
| | Small ruminants | 1 closed stall, 2 stands |
| | Pigs | 2 closed stalls, 2 stands |
| | Dogs | Room no. 31 - 9 cages |
| | Cats | Room no. 29 – 4 cages |
| | Other [1)] | - |
| Isolation facilities | Farm animals and horses | |
| | Small animals | |
| | Other | |

[1)] available by the end of 2013; currently a new building Veterinary Clinics - Innovative Pathology and Therapy Centre of Animals (see 12.3.6.)

**Department and Clinic of Infectious Diseases**

Table 12.3.4.c.4.: Places available for hospitalization and animals to be accommodated

| | Species | Number of places |
|---|---|---|
| Regular hospitalizations | Cattle | |
| | Horses | |
| | Small ruminants | |
| | Pigs | |
| | Dogs | Room no. 12 (Vivarium) -4 stalls, 2 cages |
| | Cats | Room no. 12 (Vivarium) –3 cages |
| | Other [1)] | - |
| Isolation facilities | Farm animals and horses | |
| | Small animals | Room no. 19 (Epizootiology Dep. Building) – 2 cages (dogs), 4 cages (cats) |
| | Other | |

**Diagnostic laboratories and clinical support services**

The current diagnosis is conducted by each clinic according to its own needs. The equipment for the laboratories is presented below. Not only is biochemical denoting made, but blood cell count, urine milk and sperm analysis as well.

The laboratory for diagnostic imaging makes X-rays and ultrasound scan tests according to all clinics needs, as the patients from all clinics are directed here. Additionally, all clinics and the mobile clinic are equipped in ultrasound scanners. Anaesthesia is conducted in individual clinics appropriate to the operation.

***Collegium Veterinarium* Building**

**Department of Food Hygiene of Animal Origin**

a) microbiological testing laboratory – (room No. 331; surface 33,85 $m^2$) – microbiological examination of foods of animal origin (preparing samples for examinations, checking bacteriological cultures, incubation, determining the quantity and quality of bacteria, preparing materials used by students in laboratory classes) - 2 microbiological chambers, laminar chamber, laboratory table, 4 thermostats, dryer, 4 laboratory refrigerators, 2 steriliser (autoclaves), distiller, 2 homogenisers, 2 Vortex, Densilameter and Multiscan EX (Erba Lachema) - system for automated microbial identification and antibiotic susceptibility determination.

b) chemical laboratory I and II – (room No. 327; surface 52,00 $m^2$ , and room No. 341; surface 17,50 $m^2$) – chemical examination of foods of animal origin (preparing samples for examinations, determination of the chemical composition of food, preparing materials and reagents for practical classes with students); Soxtec device (Soxtec Fat Extraction System - FOSS) for fat content determination, 1 colorimeter, 2 pH-meters, 3 water baths, 2 fume cupboards, Kjeltec's device (Tecator Digestion System - FOSS) for protein content determination, 2 precision balances, 2 freezers, 2 dryers, laboratory refrigerator, 2 centrifuges, and furnace (incinerator).

c) laboratory for the detection of *Trichinella* in meat samples (No 502-505; surface 94 $m^2$) - examination of domestic swine meat, game meat and muscle samples from other animal species, which may be infected with *Trichinella*; 1. the examination of meat samples is performed based on the protocol for artificial digestion technique (magnetic stirrer method) according to the EU Regulation no. 2075/2005; the laboratory is used for the official meat inspection (meat for private domestic consumption) and didactic purposes – practical classes with students; the laboratory is equipped with scales, 2 blenders, 2 magnetic stirrers with thermostatically controlled heating plate, 4 conical glass separation funnels (2,5 l), 2 sieves (mesh size 180 microns) with stainless steel, glass beakers, funnels and measuring cylinders, 2 trichinoscopes with a horizontal table (Rathenow), stereo-microscope, acrylic larval counting basins, and other necessary laboratory equipment like 2 freezers, 2 refrigerators, steriliser, distiller.

**Department of Preclinical Veterinary Sciences**

**Sub-Department of Toxicology and Environmental Protection**

- spectroscopic determination room (No. 510 - 3 rooms – surface 40 $m^2$) - spectrometer for atomic absorption Varian, spectrometer for atomic absorption AVANTA PM, mercury content analyser MA-2
- laboratory for preparation and wet mineralization (No. 516 -2 rooms: surface 30 $m^2$) – microwaves, mineralizer Multiwave 3000 Anton Paar, separator MPW – 375, scale WPE 600, scale dryer WPE 305, fume cupboard
- dry mineralization laboratory (No. 562 – 11,5 $m^2$) - furnace FCF 22SP
- preparation room for laboratory lessons of veterinary toxicology (room No. 116 – 16,4 $m^2$) - spectrophotometer UV – VIS Recording UV – 160A, reader, pH meter, scales, and TLC chamber.

**Institute of Biological Bases of Animal Diseases**

**Sub-Department of Parasitology and Invasive Diseases**

Rooms No. 437 – 35 $m^2$, No. 438 – 18 $m^2$ – light microscopes, magnifying glass, laboratory devices, centrifuges, thermostat, dryer, multifunctional a plate reader, device for moving boundary electrophoresis, precision balances
Range of laboratory tests performed - parasitological diagnosis.

**Veterinary Clinics Buildings**

**Department and Clinic of Animal Reproduction**

**Bacteriological laboratory (room No. 6,** surface 14 $m^2$**):** thermostats- 2, refrigerators- 2, antibiotic discs, laminar chamber – 2, plates with bacteriological medium
**Laboratory for blood and sperm examination (room No. 7,** surface 23 $m^2$**):** sperm examination computer system SCA Microptic, microscope with support for fluorescence, stereoscopic microscope, photometer Sperma-Cue, Biogenet device for controlled sperm and embryo freezing, freezer for keeping samples in deep freezing, container with liquid nitrogen for keeping frozen sperm and embryos, hematological device, microscopes-4, ELISA test, centrifuges -2, water-powered bath, pigments
Sterilization room No. 9 – 11 $m^2$
Chemical and laboratory reagents stock (No.8 - 7 $m^2$)
Registration: room for sampling and giving results- 14 $m^2$
Office for small animal sampling - 21 $m^2$
Range of laboratory tests performed include: inoculation and culture of aerobic microorganism and antibiotic-sensitivity assessment; cytology assessment vaginal swabs of domestic and farm animals; full sperm control of domestic and farm males.

**Department and Clinic of Animal Internal Diseases**[1)]
**No. 130** (15 $m^2$): spectrometer for atom absorption Perkin Elmer 4100, acid- base equilibrium determination device Ciba Corning 238, electrolyte determination device AVL 488-4, spectrophotometer Marcel Media Ph-meter Pm 600, 2 microscopes,
**No.126** (12 $m^2$): biochemical analyzer Mindray BS 130, spectrophotometer Marcel S 330, spectrophotometer Epoll 20, microplate reader Biogenet, Fluorimetr 244, acid- base equilibrium determination device Idexx Vet Stat,
**No. 124** (10 $m^2$) –thermostat, electrolyte analyzer 9180, microscope, hematological analyzer MS9, urine analyzer,
**No. 120** (12 $m^2$) - baths 2, thermostat, centrifuges, hematocrit separator,
**No. 111** (25 $m^2$) - centrifuge MPW 350 R, laminar flow chamber HuV 2436, microscopes, thermostats
**No. 105** (8 $m^2$) – biochemical analyzer IDEXX VET TEST 8008, centrifuge.
Range of laboratory tests performed: hematological examination, blood serum biochemical examination (enzyme activity ALAT, Aspat, AP, CK, GGT, GLDH, amylase, glutathione peroxidase examination, dismutation of peroxide examination, anti-oxidizing status, urea level, creatinine level, total cholesterol level, glucose triglyceride level, bilirubin level, total protein level, total calcium level, magnesium level, Ca++, NA, K, Fe, Cu, acid- base equilibrium determination), urine examination, statoscopy, liquid from body cavity examination, breeding examination for bacteria and fungus, antibiotic-sensitivity assessment, specific antibody IgE level determination.

[1)] available by the end of 2013; currently a new building Veterinary Clinics - Innovative Pathology and Therapy Centre of Animals (see 12.3.6.)

**Department and Clinic of Infectious Diseases**
**Vivarium Building: No.16** (surface 20$m^2$), **No.103** (surface 20$m^2$), and **No.104** (surface 30$m^2$)
**Department of Epizootiology Building: No.15** (surface 10$m^2$), **No.16** (surface 15$m^2$), **No.27** (surface 7$m^2$), and **No.29** surface 15$m^2$).
Range of laboratory tests performed: Hematology, biochemistry, determination of ions and blood pH, urine testing, parasitological testing, microbiology (bacteriological, mycological, virus testing), antibiograms, serological testing, molecular testing – PCR, electrophoresis, flow cytometry, mass spectrometry, high performance liquid chromatography, liquid chromatography-Nano-LC.
**Room equipment**
**Laboratory room No. 26** Vivarium: digestorium – chemical reagent storage, microcentrifuge type 300, Sigma 1-13 centrifuge (centrifugation of Eppendorf test tubes), Wortex Heidolph Reax 2000 (mixing of Eppendorf test tube contents), LW 102 Water Bath (test tube incubation within temperature range of 20-60°C), WPE 60 Scales

(chemical reagent weighing within range of 0,02-60 g), Heraeus Biofuge 22R Centrifuge (refrigerated centrifugation of Eppendorf test tubes), CG840 pH-meter (pH determination of solutions), Techne PHC-3 Thermocycler and T3 BIOMETRA Thermocycler (amplification of tested genetic material), ORBITAL INCUBATOR S150 Combined Incubator and Shaker (incubation of bacterial cultures in liquid media), stereoscopic microscope (viewing of specimens), OLYMPUS BX40 Fluorescent Microscope with camera (viewing of immunofluorescent or otherwise stained specimens), and OLYMPUS CH20 Optical Microscope (3 pcs. – viewing of bacteriological specimens and blood films).

**VIVARIUM BUILDING**

**Laboratory Room No. 16 :** hematological apparatus MS9 vet., urine analyzer URYXXON Relax, electrolyte and blood gas analyzer IDEXX VETSTAT, ion analyzer Biomaxima.

**Microbiology Laboratory Rooms No. 103-104:** OLYMPUS BX 41TF Research Microscope Mfg. Number: 7D17493, microscope data storage system OLYMPUS, SIGMA 3-16K and 1-15K Centrifuges Polygen, Shaking Water Bath V/His230/50-60, DEN-1 Densimeter BIOSAN, Analytical Scales AS 160/c/2 Radwag, Laminar Chamber (Class II LAMIL PLUS), Automated Microplate Reader 708001504.

**Department of Epizootiology Building**

**Mass Spectrometry Laboratory Room No. 14:** mass spectrometer MALDI-TOF, liquid chromatograph – Nano-LC, ImmagePrep (system for preparation of tissue slides), high-resolution scanner for gels after electrophoresis, laminar chamber.

**Serology Laboratory Room No. 15: l**aminar chamber, SIGMA Refrigerated Centrifuge, MPW-120 Homogenizer for grinding of biological material, light microscope, CO2 incubator for cell breeding, water distiller, water deionization system, HPLC.

**Virology Laboratory Room No. 16:** laminar chamber, Real-Time HRM PCR Corbett Thermocycler, Millipore Water Deionizer, reverse light microscope for analysing cell cultures, liquid nitrogen containers for blanking cell cultures and storing viral strains, light microscope.

**Room No. 27:** KUCHARCZYK Electropheresis Set, with STABNAP 20 power supplier, BRL HORIZON 11-14 Electropheresis Set, with INCO Warszawa power supplier, Cole-Parmer Transilluminator – for UV gel viewing, KUCHARCZYK Vertical Electropheresis Set using polyacrylamide gels, VILBERT LOURMAT Gel Storing Set – JPG files supported

**Immunology Laboratory Room No. 29:** COULTER EPICS XL Flow Cytometer, scales: WS-21, AXIS AD500, CONSORT C561 pH-meter, MPW-360 Centrifuge, LABLINE CO2 Incubator, BIOAIR Laminar Chamber

**Department of Pathological Anatomy**

**Diagnostic Laboratory No. 4** (surface - 29.5 $m^2$): re-distiller, distiller, sledge microtome, microscope

**Histochemistry and Immunohistochemistry Laboratory No. 9** (33.81 m2): digestorium, cryostat, water bath, pH-meter, refrigerated microtome, sledge microtome, microscope

**Technical Room No. 20** (10.5 $m^2$): tissue processor, incubator, paraffin embedding apparatus, refrigerator

Scope of laboratory research: post-mortem, histopathological, histochemical, and immunohistochemical examination

*12.3.4.c. facilities for the maintenance of teaching and research animals,*

**Facilities for animals**

Animal Husbandry is taught by the teachers from the Faculty of Biology and Animal Husbandry. One visit to a farm is included in the curriculum. Moreover, students have obligatory holiday practice training on a farm after the 2nd year of studies. Herd health and handling techniques are taught partly during ethology and animal welfare and during clinical subjects using didactic animals kept in the clinical facilities as well as during farm visits using the mobile clinic.

**Department and Clinic of Animal Reproduction**

Horses - 4 stalls, cattle - 3 stalls, small ruminants - 1 stall, pigs -1 stall, dogs -1 room with cages, cats -1 room with cages; Department and Clinic of Animal Reproduction has 2 sheep used for didactic purposes.

**Department and Clinic of Animal Surgery**

**Room for small animals (No. 14)**: 6 easy-to-assemble/disassemble cages for stationary treatment of dogs and cats, 2 coops for post-operative treatment

**Room for small animals (No. 23** – Major Surgery building): 6 stationary stands for small animals.

**Room for large animals (No. 30** – stable): 4 closed stalls for horses, 1 stall for treating wild animals, 6 stalls for cows, 1 stand for orthopaedic physiotherapy of large animals, 1 anaesthesia emergence stall for large animals, crush for
large animals.
**Aviary (no. 29):** 1 large roof cage, 4 small roof cages, 3 partial-roof cages, which can be rearranged into one cage. The Department and Clinic of Animal Surgery has one horse for didactic purposes.

**Department and Clinic of Internal Diseases[1)]**
Department constantly keeps 3 horses in stalls which are 12 $m^2$ in area, 2 cows in stalls of 12 $m^2$ in area, 2 sheep in a 6 $m^2$ stall, a pig in a 6 $m^2$ stall and a goat in a 6 $m^2$ stall.

[1)] available by the end of 2013; currently a new building Veterinary Clinics - Innovation Pathology and Therapy Centre of Animals (see 12.3.6.).

**Department and Clinic of Infectious Diseases**
Dogs – 4 stalls of 2.5 $m^2$ in area each with runs, 4 cages of 1 $m^2$ in area, cats – 70.4 $m^2$ cages.

*21.3.4.d. research facilities and equipment*

**Department of Animal Anatomy and Histology**
**Sub-Department of Animal Anatomy**
Ossarium (surface 24 $m^2$) is routinely used for skeleton preparations but sometimes also serves as a bone storage room.
**Sub-Department of Histology and Embryology**
Histological slides which are used in laboratory classes, are prepared in two histological labs: **Room No. 225** (surface 25$m^2$) - tissues and organs are fixed and embedded using a routine method; in this lab there is a rotating microtome used for tissue cutting, a water bath, analytical scales and sets of laboratory vessels used for slides staining and …
**Room 230** (immunohistochemical lab, surface 16$m^2$) - there is a thermostat in which the animal material is impregnated in liquid paraffin and there is a set used to conduct immunohistochemical reactions.

**Department of Biochemistry**
**Room No.119** – laboratory for electrophoresis and liquid chromatography (equipment for 1D and 2D electrophoresis, western blotting)
**Room No. 202** – shared with the Department of Animal Physiology – laboratory for cell culture - laminar chamber, $CO_2$ incubator, reflection microscope, centrifuge, microplate washer, microplate reader
**Rooms No. 439-441** – biochemistry laboratories – protein purification, spectrophotometry, spectrofluorimetry

**Department of Animal Physiology**
**Room No. 202** – shared with Department of Biochemistry – laboratory for cell culture - laminar chamber, $CO_2$ incubator, reflection microscope, centrifuge, microplate washer, microplate reader
**Room No. 208** – Zwick-Roell Z010 universal testing machine, equipped with a measuring head with an operation range to 10 kN, linked to a computer with testXpert II 3.1 software
**Room No. 214** – biochemistry laboratory – centrifuge Sigma 3-18 R with freezing, protein and nucleic acid analyser (MagMax Express)
**Room No. 215** – histology laboratory – fume cupboard, thermostat, spin tissue processor (Microm STP120), microtome, microscope, shaker
**Room No. 306** – biochemistry laboratory – microplate reader, biochemical analyser (Mindray), water bath, fluorescence microscope
**Room No. 521** – bone densitometry laboratory – peripheral quantitative computed tomography (pQCT) XCT Research SA Plus system with software version 6.2 C and Dual X-ray absorptiometry densitometer Norland Excell Plus with Illuminatus Small Subject Scan software.

**Department of Preclinical Veterinary Sciences**
**Sub-Department of Pathophysiology**
- **laboratory (room No. 312** – surface 23 $m^2$): liquid chromatography Beckman, analyser ABL-80 Lex, pH-meter Beckman, vacuum pump PL-2, centrifuges, Optima XPN-100 Ultracentrifuge Beckman, spectrophotometer Cecil CE-2021, Ultra-Low Temperature Freezer Sanyo
- ***in vitro*** **laboratory (room No. 313**– surface 24 m2) : $CO_2$incubator Lab-Line model 490, laminar chamber Aura 2000 M.A.C., autoclave, Absorbance Microplate Reader ELx800, microscopes MBL-120, 3 $CO_2$gas cylinders, device for electrophoresis of polyacrylamide gel

- **chromatography laboratory (room No. 311** – surface 24 $m^2$): Gas Chromatograph HP 5890 Series II equipped with a flame ionization detector, polyacrylamide gel archiving, *in vitro* cells archiving, reflection microscope
– **surface 18 $m^2$** – at the same time it is the room of scientific workers

**Sub-Department of Pharmacology**

- **biochemistry laboratory (No. 323** – surface 25 $m^2$): device for purifying tap water, Milli Q Plus 185 System to produce deionized water ( Millipore), centrifuges, homogenizer Diax 900, pH-meters
- **chromatography laboratory (No. 322** – surface 18,7 $m^2$): chromatograph (HPLC), precision balance Sartorius
- **microbiology laboratory (No. 324** – surface 25 $m^2$): laminar chamber, rotary burner, haematological and biochemical analyser
- **laboratory No. 546** – surface 15 $m^2$

**Institute of Biological Bases of Animal Diseases**

**Sub-Department of Fish Diseases and Biology**

**Room No. 429** (15 $m^2$) - device for electrophoresis, thermocycler, thermostat, mechanical and ultrasound homogenizer

**Room No. 435** (30$m^2$) - laminar table, fume cupboard, thermostats, sterilizer, microscopes, photometer, centrifuge, refrigerator

Range of laboratory tests performed - immunological, haematological, electrophoresis, and biological tests

**Sub-Department of Veterinary Microbiology**

**Rooms No 406** - 29,1 $m^2$, **408**- 31,2$m^2$, **412**- 21,8$m^2$, **413**- 23,8$m^2$, **417**-15,9 $m^2$, **418**-30,7 $m^2$

Range of laboratory tests performer: phenotypic and genotypic identification of selected species of bacteria, fungi, viruses, sequencing DNA of housekeeping genes, determination of antifungal susceptibility (dermatophytes, yeast, moulds) and antibiotic susceptibility of aerobes, non-fastidious bacteria, fingerprinting methods for differentiating closely related microorganisms (PFGE, ribotyping, ADSSRS, MP-PCR, ERIC, RAPD, AFLP, RFLP), cell culturing, setting of primary cell lines.

Particular room equipment: specialized research microscope with equipment and software for documentation, processing and image analysis with equipment for research in epi fluorescence, darkfield, phase contrast and Nomarski contrast, light microscopes, equipment for amplification of DNA and vertical and horizontal electrophoresis and analysis of nucleic acids and proteins, laminar chambers, thermostats (with aerobic and $CO_2$ conditions), autoclaves, water distillation unit, thermoblocks, centrifuges, cell homogenizer, freezer -80ºC.

**Sub-Department of Veterinary Prevention**

**Rooms No. 402** -21 $m^2$, **403** – 16 $m^2$, **404** – 16 $m^2$, **423** – 20 $m^2$, **424** – 20$m^2$

Range of laboratory tests performed: animal peripheral blood leucocyte isolation, viability and quantity of cell determination, cell culture conducting, enzyme immunoassays ELISA, R reaction, protein and nucleic acid electrophoresis, immunoelectrophoresis, immunoblotting, bacterial agent isolation, bacteriophage isolation, liquid hypotension protein chromatograph, chemotaxis determination, phagocytosis and reactive oxygen species in leucocyte production.

Particular room equipment**:** 4 laminar chambers, chromatograph FPLC, thermostats (traditional, with $CO_2$, with freezing), microplate readers, spectrophotometer, protein and nucleic acid electrophoresis devices, thermocycler, gel analyser device, device for immunoblotting, (light and reflection), microscopes, UV illuminator, ultracentrifuges, cell disintegrator, freezers -76º, autoclaves, Boyden cells.

*12.3.4.e. administrative and faculty offices*

University administrative offices and faculty offices including the Dean office as well as other faculty's offices are located in the headquarters of the University at Akademicka street 13. The Dean office employs 5 persons who deal with student affairs and preparations, and writing materials for faculty council meetings, which are held every month.

*12.3.4.f. service areas for students (for example, lounges, cafeteria, etc.)*

Students can perform different kinds of activities in many places within the university campus. Some social events take place in lounges and cafeterias. There is also a sport centre for all kinds of disciplines, which include a football field, tennis court, swimming pool and halls for basketball, volleyball etc., as well as academic (students') cultural centre.

*12.3.4.g. building infrastructure (for example air handling, vented hoods, etc.).*

College buildings are fitted with gravitation and forced airflow according to requirements and the polish building law (see 12.3.3.).

*12.3.5. For safety and educational purposes, protocols must be posted in the isolation facilities and the facilities must be used for instruction in isolation procedures (biocontainment).*

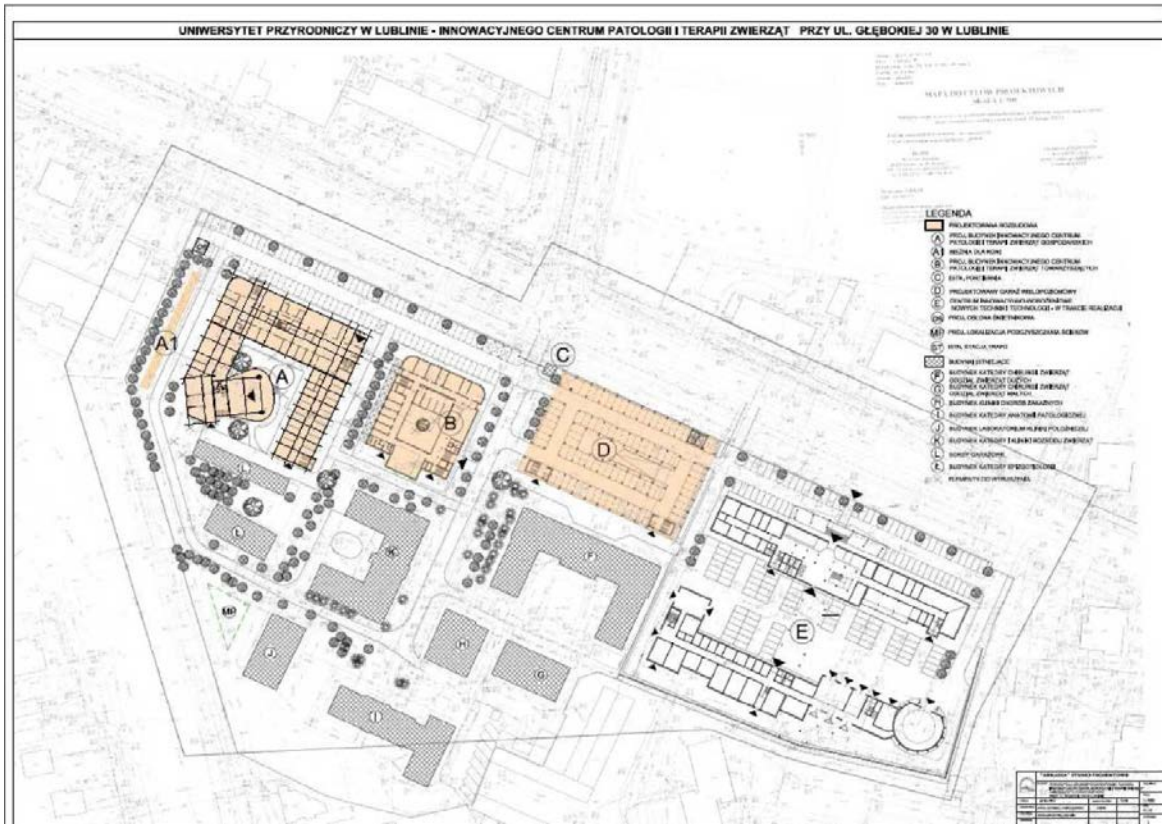
At present there is an isolation unit created in one of the wings of the obstetrics clinic. The potential isolation of animals suspected of notifiable diseases is performed in close collaboration and according to the procedures used by the State Veterinary Office.

*12.3.6. Describe current plans for improvement.*

January 23, 2015. a new building was put into use the Veterinary Clinics - Innovative Pathology and Therapy Centre of Animals.

The system of practical professional training in private clinics, meat plants, milk plants and sanitary-veterinary inspection units continue. This system is based on contracts with aforementioned production companies and public institutions. Long-time and continued participation in the Erasmus program has contributed to cooperation with educational and scientific centers in Italy, Turkey, Ukraine, Sweden, Slovakia and Hungary. In addition to this an "eLearning" platform is being developed as a useful method for self-education purposes. Consequently an attempt was made to extend the educational offer and create opportunities for veterinary course for foreign students (in English).
The Faculty will sign contracts with pharmaceutical, fodder and processing industry plants in order to commercialize the results of scientific research.

**Appendix 3.2. New Clinical Facilities**




At the beginning of 2015, the Innovative Animal Pathology and Therapy Centre was commissioned. The total usable floor area of the building is **10,926.6 m$^2$,** and the cubic capacity is **56,243.0 m$^3$.** The building complex of the Innovative Animal Pathology and Therapy Centre consists of 2 buildings:

– Building "A" – **Livestock Clinic with science and research laboratories** is a four-storey building with a partial basement. The basement section houses service and storage rooms. The ground floor contains outpatient units, procedure rooms, two operating units and rooms for horses, cattle, sheep, goats and pigs. The first floor contains locker rooms and 10 seminar rooms for 35 participants each, the second floor contains an auditorium hall for 265 people. The remaining areas of the first, second and third floor house specialist laboratories and research facilities as well as staff facilities (surface area – 2320.0 m$^2$, usable floor area – 7987.5 m$^2$, cubic capacity – 41890.0 m$^3$)

– Building "B" – **Companion Animals Clinic**, a three-storey building. The ground floor and first floor contain first aid offices, procedure rooms, specialist offices, support facilities, locker rooms, service and maintenance

rooms as well as a hospital for cats and dogs, staff facilities and an auditorium hall for 80 people. The second floor houses operating theatres with a clinical analysis laboratory (surface area – 1242.0 $m^2$, usable floor area – 2939.1 $m^2$, cubic capacity – 14353.0 $m^3$).

Both clinics are equipped with modern medical facilities, enabling the development of all current specialisations, such as: gastroenterology, cardiology, ophthalmology, stomatology, dermatology, neurology, orthopaedics, imaging, intensive care, oncology and others.

The scientific and research equipment enables the functioning of the following laboratories:

1. Proteomics laboratory
2. Mammary glands disease laboratory
3. Reproduction biotechnology laboratory
4. Serology lab
5. Cell immunology laboratory
6. Acute phase proteins laboratory
7. Rumen fluid composition and quality assessment laboratory
8. Bodily fluids biochemical analysis and homeostasis assessment laboratory
9. Multi-factor analysis of blood and haematopoietic system pathology laboratory
10. Invasive diseases laboratory
11. Flow cytometry laboratory
12. Molecular biology laboratory
13. Andrology laboratory
14. Microbiology laboratory
15. Skin disease analysis laboratory
16. Clinical sections, including:
- livestock operation techniques laboratory,
- companion animals operation techniques laboratory,
- medical imaging scientific laboratory,
- endoscopic techniques scientific laboratory,
- opthalmology scientific laboratory,
- cardiology scientific laboratory,
- stomatology scientific laboratory,
- intensive care scientific laboratory,
- oncology scientific laboratory,
- nephrology/urology scientific laboratory,
- neurology scientific laborator

The Innovative Animal Pathology and Therapy Centre is the most innovative veterinary clinical facility in Central Europe.

Electrophoresis analyser
Gas analyser
RT_PCR thermal cyclers
White and UV transilluminators
X-Ray units
C-arm X-Ray units
USG units
Computed tomography unit
Endoscopy, laparoscopy, arthroscopy kits
Fiberoscope and laparoscopy unit with accessories
Autoclave
Horse treadmill with accessories
Gas chromatograph
ELISA reader
Electrocauter
Phacoemulsification unit with vitrectomy device
Fossomatic
Laminar chambers
CASA Computer Assisted Semen Analysis system
Frozen semen container
Microscopes
Microscan – analyser
Infusion pump for large animals
Atomic absorption spectrometer (ASA)
Surgical aspirator
Water purification system
Scales
Centrifuges
Deep freezers (-80*C)
Electrophoresis kit
Gel documentation kit
aggregometer
aquavibron
biochemical analyser
gasometric analyser
haematological analyser
urine analyser
ion level analyser
electrocoagulation unit
coagulation parameters testing unit
ventricular late potential identification unit
action currents identification unit
audiometer
rehabilitation pool
laboratory animals treadmill
laser biostimulation unit
defibrillator
digestorium
ECG electrocardiography unit
oxygen generator
haemodialyser
holter monitor
HPLCHigh pressure liquid chromatography
laminar chambers
deep tissue freezing cryoscope
slit lamp with documentation
hanging lamps
procedure lamps
cryosurgery unit
tissue cutting laser
Dewar vessel
optical coherent tomography unit for eye structure examination
pH-meter
respirator
operating tables
procedure tables
patient monitoring system
stomatological unit with equipment
electric therapy unit
magnetic therapy unit
sonotherapy unit
laboratory scales
rehabilitation tub with treadmill
laboratory centrifuges

**Appendix 6-1: Description of the testing/grading system**

The term or the year of studies is completed on the basis of regulations stated in the resolutions of the Senate of the University of Life Science in Lublin:
- No 36/2008-2009 of 24 April 2009 regarding the enactment of the Studies Regulations of the University of Life Science in Lublin;
- No 39/2009-2010 of 26 March 2010 regarding the introduction of an annex to the Studies Regulations of the University of Life Science in Lublin.
- Resolution 42/2010-2011 of 26 May 2011 on the introduction of an annex to the Rules of Studies at the University of Life Sciences in Lublin
-Resolution No 82/2011-2012 on the introduction of an annex to the Rules of Studies at the University of Life Sciences in Lublin on the website bip.up.lublin.pl/files//regstudiow2014.pdf

1. The term is the grading period. The subjects taken from the study plan can finish with: 1) an exam, 2) a credit with a grade, 3) a credit without a grade.
2. The term is completed on the condition that all the exams and credits are passed with satisfactory grades in the period stated in precise academic year regulations as well as all the required ECTS points stated in the study plan are accomplished and practical classes are attended. It is assumed that by getting the signature of the person responsible for the class, students complete the subject successfully without a grade (credit) as it is stated in the study plan.
2. A student, who didn't get a credit in the first stated period of time, has the right to a retake, but the second retake is final.
3. A student can take an exam on the condition that they have satisfactory grades in subjects from which they will take an exam.
4. There is a credit grade scale signed to the students' index following an exam: very good (5,0), good plus (4.5), good (4.0), satisfactory plus (3.5), satisfactory (3.0), failed (2.0).
5. In the case when a student fails an exam, they have the right to retake the exam twice in every subject, but the second retake is the final exam.
6. A student, who does not get a credit or fails an exam in one or two subjects in a term, has the right to retake a subject/ subjects in the nearest term, in which the classes from the subject/ subjects occur in accordance with the study plan.
7. In some exceptional, documented cases if a student fails the subject/ subjects from which they have a conditional credit, the dean can give agreement to another conditional credit and a student can continue the studies in the higher term, if the content of the failed subject is not necessary to continue the studies on the higher term.
8. A student can get a dean's agreement to repeat no more than two subjects in a term. The total number of repeated subjects for the first and numerous time cannot be more than three in an academic year.
9. A dean crosses out a student from the student list in the case when: studies are not started, students' resignation is not completed, a thesis or a final exam is delivered behind schedule, a student is expelled from a university because of disciplinary proceedings. A dean can cross out a student from the student list in the case when: no progress in studying is made, a term or a year is not completed in a specific period of time, the fee for the studies is not paid.

PhD study
Resolution **62/2010-2011** of 23.09.2011 on the introduction of an annex to the Rules of Doctoral Studies at the University of Life Sciences in Lublin
Resolution **43/2010-2011** of 26.05.2011 on the introduction of an annex to the Rules of Doctoral Studies at the University of Life Sciences in Lublin
Resolution **45/2011-2012** of 20.04.2012 on the introduction of an annex to the Rules of Doctoral Studies at the University of Life Sciences in Lublin
Resolutions **No. 44/2011-2012** of 20.04.2012 on amending Resolution **No. 40/2010-2011** on the principles and procedure of candidates for full-time students of the third degree (PhD) at the University of Life Sciences in Lublin in the academic year 2012/2013 and
Resolution No. **39/2013-2014** of 11.04.2014 on amending the resolution on the rules and procedure of candidates for full-time doctoral studies conducted in Polish at UP in Lublin in the academic year 2014/2015.

**Appendix 8-1 tables A, B, C and D.**

Table A – Loss and recruitment of faculty (both tenure track & clinical track/equivalent)
Provide data for past five years:

| | Department | 2010 | | 2011 | | 2012 | | 2013 | | 2014 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | **+ recruitment / – losses** | + | – | + | – | + | – | + | – | + | – |
| 1 | Institute of Biological Basis of Animal Diseases | 2 | 2 | 1 | 2 | 3 | 2 | 5 | 3 | 1 | 3 |
| 2 | Department of Epizootiology and Clinic of Infectious Diseases | | 1 | 1 | 1 | 1 | | 1 | 1 | 2 | |
| 3 | Department of Animal Anatomy and Histology | | | 1 | | | 3 | | | 3 | 1 |
| 4 | Department of Pathological Anatomy | 1 | 1 | | | | | 1 | 1 | | |
| 5 | Department of Biochemistry | | 1 | | | 1 | | 1 | | 1 | 1 |
| 6 | Department of Animal Physiology | | | | | 1 | | | | | |
| 7 | Department of Hygiene of Animal Origin | 1 | 1 | 3 | | | 1 | 1 | | | |
| 8 | Department of Preclinical Veterinary Sciences | | | | | | 1 | | 1 | | |
| 9 | Department and Clinic of Surgery | | | | | | | 2 | | | |
| 10 | Department and Clinic of Internal Diseases | | 2 | 2 | | | | | 1 | | 3 |
| 11 | Department and Clinic of Reproduction | 1 | 1 | 2 | 2 | | | | | | |
| **Total** | | **5** | **9** | **10** | **5** | **6** | **7** | **11** | **7** | **7** | **8** |

Table B – Staff support for teaching and research

| **AREA** | **FTE CLERICAL** | **FTE TECHNICAL** | **OTHER** |
|---|---|---|---|
| Clinical Teaching | na | na | 19 |
| Non-Clinical Teaching | na | na | 27 |
| Research | na | na | 6 |
| Total | na | na | 52 |

Table C – Non - Veterinarians

| **Title** | **MS** | **PhD** | **Board Certified** | **Board Certified & MS** | **Board Certified & PhD** |
|---|---|---|---|---|---|
| Administrator* | 2 | - | | | 1 |
| Professor | – | 1 | | | |
| Associate Professor | – | – | | | |
| Assistant Professor | – | 1 | | | |
| Adjunct PhD | – | 8 | | | |
| Instructor | 2 | 2 | | | |
| Lecturer | – | 1 | | | |
| Part time Faculty (less than 75% time) | – | – | | | |
| Total | 4 | 14 | | | |

* includes: vice Dean Prof. Cezary Kowalski

Table D –Veterinarians

| **Title** | **MS** | **PhD** | **Board Certified** | **Board Certified & MS** | **Board Certified & PhD** |
|---|---|---|---|---|---|
| Administrator* | – | 2 | | | |
| Profesor | – | 14 | | | |
| Associate Professor | – | 3 | | | |
| Assistant Professor | – | 14 | | | |
| Adjunct PhD | – | 49 | | | |
| Instructor | 17 | 3 | | | |
| Lecturer | 2 | 2 | | | |
| Part time Faculty (less than 75% time) | – | – | | | |
| Total | 19 | 87 | | | |

*includes : Dean – Prof. Stanisław Winiarczyk and Vice-Dean Prof. Piotr Silmanowicz

**Appendix 9-1**

**Table 12.9.6.A. General table of curriculum hours**

| Year | Hours of training | | | | | |
|---|---|---|---|---|---|---|
| | Lectures | Classes | Tutorial | Supervised practical training | | Total |
| | | | | Practical Labs | Clinical training and practice | |
| First | 385 | 482 | 125 | 357 | | 867 |
| Second | 285 | 503 | 74 | 429 | 80 | 868 |
| Third | 320 | 375 | 50 | 325 | | 695 |
| Fourth | 345 | 540 | 70 | 470 | 240 | 1125 |
| Fifth | 375 | 630 | 70 | 560 | 240 | 1245 |
| Sixth | | 90 | 12 | 78 | 210 | 300 |
| Total | 1710 | 2620 | 401 | 2219 | 770 | **5100** |

**Table 12.9.6.B. Curriculum of required courses listed according to Basic Subjects, Clinical Sciences, Animal Production, Food Hygiene/ Public Health and Professional Knowledge**

| Subject | Lectures | Classes | Tutorial | Supervised practical training | | Total |
|---|---|---|---|---|---|---|
| | | | | Practical Labs | Clinical training and practice | |
| **1. Basic Subjects** | | | | | | |
| a) Biophysics | 10 | 20 | 5 | 15 | | 30 |
| b) Chemistry | 15 | 30 | 4 | 26 | | 45 |
| c) Biology | 15 | 15 | 5 | 10 | | 30 |
| d) Cell biology | 15 | 15 | 5 | 10 | | 30 |
| e)Information Technology | 15 | 15 | 5 | 10 | | 30 |
| f)Work safety and ergonomics | 15 | | | | | 15 |
| g)Modern language | | 120 | | 120 | | 120 |
| h)Latin | | 35 | | 35 | | 35 |
| i)Protection of intellectual property | 15 | | | | | 15 |
| j) Psychology / Philosophy | 30 | | | | | 30 |
| k) Ethics | 30 | | | | | 30 |
| l) History of vet and deontology | 15 | | | | | 15 |
| m)Physical Education | | 60 | | 60 | | 60 |
| ***1- Total number of hours*** | ***175*** | ***310*** | ***24*** | ***286*** | | ***485*** |
| 2. Basic Sciences | | | | | | |
| a) Anatomy | 90 | 120 | 17 | 103 | | 210 |
| b) Histology and embryology | 60 | 60 | 8 | 52 | | 120 |
| c) Physiology | 60 | 75 | 10 | 65 | | 135 |
| d)) Biochemistry | 60 | 90 | 12 | 78 | | 150 |
| e) Genetics | 15 | 15 | 5 | 10 | | 30 |
| f) Pharmacology | 45 | 60 | 8 | 52 | | 105 |
| g) Pharmacy | 15 | 15 | 2 | 13 | | 30 |
| h) Toxicology | 30 | 30 | 4 | 26 | | 60 |
| i) Environmental protection | 15 | 15 | 5 | 10 | | 30 |
| j) Microbiology | 60 | 90 | 12 | 78 | | 150 |
| k) Immunology | 15 | 30 | 4 | 26 | | 45 |
| l) Epidemiology | 15 | 30 | 4 | 26 | | 45 |
| m) Biostatistics and methods of documentation | 15 | 15 | 5 | 10 | | 30 |
| n) Topographic Anatomy | 15 | 30 | 4 | 26 | | 45 |
| o) Pathophysiology | 35 | 60 | 8 | 52 | | 95 |
| ***2- Total number of hours*** | ***545*** | ***735*** | ***108*** | ***627*** | | ***1280*** |
| **3. Clinical Sciences** | | | | | | |
| a) Clinical and laboratory | 60 | 60 | 8 | 52 | | 120 |

| | | | | | | |
|---|---|---|---|---|---|---|
| diagnostics | | | | | | |
| b)Pathomorphology | 75 | 90 | 12 | 78 | | 165 |
| c)Diseases of beneficial insects | 15 | 15 | 2 | 13 | | 30 |
| d)Veterinary parasitology and invasiology | 30 | 60 | 8 | 52 | 15 | 90/15 |
| e)General surgery and anesthesiology | 15 | 30 | 4 | 26 | | 45 |
| f)Diseases of Horses | 105 | 135 | 18 | 117 | 90 | 240/90 |
| g)Diagnostic imaging | 30 | 30 | 4 | 26 | | 60 |
| h) Diseases of Farm Animals | 105 | 165 | 22 | 143 | 90 | 270/90 |
| i) Diseases of Fur Animals | 15 | 15 | 2 | 13 | | 30 |
| j)Veterinary Dietetics | 15 | 15 | 2 | 13 | | 30 |
| k)Birds Diseases | 45 | 60 | 8 | 52 | 30 | 105/30 |
| l)Andrology and insemination | 15 | 30 | 4 | 26 | | 45 |
| m)Diseases of Dogs and Cats | 105 | 195 | 24 | 171 | 90 | 300/90 |
| n) Forensic medicine | 15 | 15 | 2 | 13 | | 30 |
| o)Administration and legislation in veterinary | 30 | | | | | 30 |
| p) Protection of public Health In Emergency Situations | 15 | 15 | 2 | 13 | | 30 |
| r) Zoonoses | | 15 | 2 | 13 | | 15 |
| s) Fish diseases | 15 | 30 | 4 | 26 | | 45 |
| t) Veterinary Prevention | 30 | 45 | 6 | 39 | | 75 |
| **3- *Total number of hours*** | **735** | **1020** | **134** | **886** | **315** | ***1755/315*** |
| **4. Animal Production** | | | | | | |
| a)Agronomy | 15 | | | | | 15 |
| b)Farming of animals | 15 | 30 | 10 | 20 | | 45 |
| c)Technology in animal production | 15 | 15 | 5 | 10 | | 30 |
| d)Veterinary Economics | 15 | | | | | 15 |
| e)Animal Nutrition and feedstuffs | 30 | 30 | 10 | 20 | | 60 |
| f)Etology, welfare and protection of animals | 15 | 15 | 2 | 13 | | 30 |
| g)Hygiene of animal nutrition | 15 | 15 | 2 | 13 | | 30 |
| h)Breeding holiday practice | | | | | 80 | 80 |
| ***4- Total number of hours*** | **120** | **105** | **29** | **76** | **80** | ***225/80*** |
| **5. Food Hygiene/ Public Health** | | | | | | |
| a) Hygiene of Food Animals and Meat | 30 | 90 | 12 | 69+9 | | 120 |
| b)Milk Hygiene | 15 | 30 | 4 | 26 | | 45 |
| c) Hygiene and Technology of Food of Animal Origin | 60 | 75 | 10 | 65 | | 135 |
| d) Holiday practice | | | | | 160 | 160 |
| ***5- Total number of hours*** | **105** | **195** | **26** | **169** | **160** | ***300/160*** |
| **6. Professional Knowledge** | | | | | | |
| a)Clinical practice (after the semester VIII) (holiday practice) | | | | | 160 | 160 |
| b)Clinical practice (after the semester X) (holiday practice) | | | | | 160 | 160 |
| **6- *Total number of hours*** | | | | | **320** | ***320*** |

**Table 12.9.6.C. Curriculum of elective courses listed according to Basic Subjects, Clinical Sciences, Animal Production, Food Hygiene/ Public Health, Professional Knowledge and other.**

| Subject | Lectures | Classes | Tutorial | Supervised practical training | | Hours to be taken by each student per subject group |
|---|---|---|---|---|---|---|
| | | | | Practical Labs | Clinical training and practice | |
| **Basic subjects** | | | | | | |
| **Basic science** | | | | | | |
| 1. Animal behaviorism | | 15 | 2 | 13 | | 15 |
| 2. Utilization of molecular biology | | 15 | 2 | 13 | | 15 |

| | | | | | | |
|---|---|---|---|---|---|---|
| techniques in science and veterinary diagnostics | | | | | | |
| 3. Physiology and anatomy of birds | | 15 | 2 | 13 | | 15 |
| 4. Surgical anatomy of small animals | | 15 | 2 | 13 | | 15 |
| 5. Genetic modifications and gene therapy | 15 | | | | | 15 |
| 6. Endocrinology | | 15 | 2 | 13 | | 15 |
| 7. Neurophysiology | | 15 | 2 | 13 | | 15 |
| 8. Physiology of animal postnatal development | | 15 | 2 | 13 | | 15 |
| 9. Genetic diseases of animals | | 15 | 2 | 13 | | 15 |
| 10. Aquaculture | | 15 | 2 | 13 | | 15 |
| 11. Tumor transformations in animals | | 15 | 2 | 13 | | 15 |
| 12. Biomaterials | 15 | | | | | 15 |
| **Clinical sciences** | | | | | | |
| 1. Diseases of laboratory animals | | 15 | 2 | 13 | | 15 |
| 2. Veterinary hematology | | 15 | 2 | 13 | | 15 |
| 3. Diseases of exotic animals | | 15 | 2 | 13 | | 15 |
| 4. Rodents as companion animals | | 15 | 2 | 13 | | |
| 5. Clinical physiology | | 15 | 2 | 13 | | 15 |
| 6 . Clinical pharmacology | | 15 | 2 | 13 | | 15 |
| 7. Laboratory toxicological analysis | | 15 | 2 | 13 | | 15 |
| 8. Diseases of game animals | 15 | | | | | 15 |
| 9. Endoscopic Diagnostics | | 15 | 2 | 13 | | 15 |
| 10. Diseases of ornamental birds | | 15 | 2 | 13 | | 15 |
| 11. Breeding and diseases of crestless birds (Ratites) | 15 | | | | | |
| 12.Ultrasound scan in acute clinical cases | | 15 | 2 | 13 | | 15 |
| 13. Clinical endocrinology | | 15 | 2 | 13 | | 15 |
| 14. Veterinary geriatrics | | 15 | 2 | 13 | | 15 |
| 15. Clinical neurology and neurosurgery | | 15 | 2 | 13 | | 15 |
| 16. First-aid in life threatening cases | | 15 | 2 | 13 | | 15 |
| 17. Metabolic diseases of livestock | | 15 | 2 | 13 | | 15 |
| 18. Pediatrics with elements of behavior of small animals | | 15 | 2 | 13 | | 15 |
| 19. Clinical analytics of livestock and horse diseases | | 15 | 2 | 13 | | 15 |
| 20. Clinical analytics of dog and cat diseases | | 15 | 2 | 13 | | |
| 21.Clinical radiology of emergency medicine in small animals | | 15 | 2 | 13 | | 15 |
| 22. Veterinary Oncology | | 15 | 2 | 13 | | 15 |
| 23. Herpetology and herpeculture | | 15 | 2 | 13 | | 15 |
| **Animal production** | | | | | | |
| | | | | | | |
| **Food hygiene/Public health** | | | | | | |
| | | | | | | |
| **Professional knowledge** | | | | | | |
| 1. Marketing and management | 15 | | | | | 15 |
| **Other** | | | | | | |
| 1. First aid | | 15 | 2 | 13 | | 15 |
| | | | | | | |

**12.9.6.D.1. First year of the curriculum**

Titles of required courses with respective credit hours showing their allocation concerning the type of teaching and showing total number of hours allocated to the subject.

| Subject | Hours of training | | | | | |
|---|---|---|---|---|---|---|
| | Lectures | Classes | Tutorial | Supervised practical training | | Total |
| | | | | Practical Labs | Clinical training and practice | |
| Animal Anatomy* | 60 (90) | 82 (120) | 12 | 70 | | 142 (210) |
| Histology and Embryology | 60 | 60 | 8 | 52 | | 120 |
| Chemistry | 15 | 30 | 4 | 26 | | 45 |
| Biology | 15 | 15 | 5 | 10 | | 30 |
| Cell biology | 15 | 15 | 5 | 10 | | 30 |
| Environmental Protection | 15 | 15 | 5 | 10 | | 30 |
| Biostatistics and methods of Documentation | 15 | 15 | 5 | 10 | | 30 |
| Philosophy | 30 | | | | | 30 |
| Biochemistry* | 30 (60) | 45 (90) | 6 | 39 | | 75 (150) |
| Information Technology | 15 | 15 | 5 | 10 | | 30 |
| Work safety and ergonomics | 15 | | | | | 15 |
| Foreign language* | | 60 (120) | | 60 | | 60 (120) |
| Latin | | 35 | | 35 | | 35 |
| General and veterinary genetics | 15 | 15 | 5 | 10 | | 30 |
| Agronomy | 15 | | | | | 15 |
| Biophysics | 10 | 20 | 5 | 15 | | 30 |
| Protection of intellectual property | 15 | | | | | 15 |
| History of veterinary and deontology | 15 | | | | | 15 |
| Physical Education | | 60 | 60 | | | 60 |
| Bioethics | 30 | | | | | 30 |
| **Total** | **385** | **482** | **125** | **357** | | **867** |

*subject lasting two or more semesters and taught during the next year as well, numbers in brackets mean didactic hours taught during the next semester

**12.9.6.D.2. Second year of the curriculum**

Titles of required courses with respective credit hours showing their allocation concerning the type of teaching and showing total number of hours allocated to the subject.

| Subject | Hours of training | | | | | |
|---|---|---|---|---|---|---|
| | Lectures | Classes | Tutorial | Supervised practical training | | Total |
| | | | | Practical Labs | Clinical training and practice | |
| Animal Anatomy* | 30 (90) | 38 (120) | 5 | 33 | | 68 (210) |
| Topographic Anatomy | 15 | 30 | 4 | 26 | | 45 |
| Animal Physiology | 60 | 75 | 10 | 65 | | 135 |
| Microbiology * | 30 (60) | 45 (90) | 6 | 39 | | 75 (150) |
| Etology, welfare and health protection of animals | 15 | 15 | 2 | 13 | | 30 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Immunology | 15 | 30 | 4 | 26 | | 45 |
| Nutrition and feedstuffs | 30 | 30 | 10 | 20 | | 60 |
| Biochemistry | 30 (60) | 45 (90) | 6 | 39 | | 75 (150) |
| Foreign language* | | 60 (120) | | 60 | | 60 (120) |
| Animal Breeding | 15 | 30 | 10 | 20 | | 45 |
| Techniques in animal production | 15 | 15 | 5 | 10 | | 30 |
| Veterinary Economics | 15 | | | | | 15 |
| Veterinary Epidemiology | 15 | 30 | 4 | 26 | | 45 |
| Animal rearing training (after sem. IV) | | | | | 80 | 80 |
| Elective course 1 | | 15 | 2 | 13 | | 15 |
| Elective course 2 | | 15 | 2 | 13 | | 15 |
| Elective course 3 | | 15 | 2 | 13 | | 15 |
| Elective course 4 | | 15 | 2 | 13 | | 15 |
| **Total** | **285** | **503** | **74** | **429** | **80** | **868** |

*subject lasting two or more semesters and taught during the next year as well, numbers in brackets mean didactic hours taught during the next semester

Listing of elective courses in the II$^{nd}$ year – two subjects out of thirteen during the whole year:

1) Animal Behaviorism; 2) First Aid; 3) Molecular biology techniques in examination and veterinary diagnostics; 4) Surgical anatomy of small animals; 5) Physiology and anatomy of birds; 6) Clinical Physiology; 7) Herpetology and herpeticulture; 8) Endocrinology; 9) Neurophysiology; 10) Physiology of animal postnatal development; 11) Genetic diseases; 12) Aquaculture; 13) Veterinary Hematology

**12.9.6.D.3. Third year of the curriculum**

Titles of required courses with respective credit hours showing their allocation concerning the type of teaching and showing total number of hours allocated to the subject.

| Subject | Hours of training | | | | | |
|---|---|---|---|---|---|---|
| | Lectures | Classes | Tutorial | Supervised practical training | | Total |
| | | | | Practical Labs | Clinical training and practice | |
| Veterinary Parasitology and Invasiology * | 15 (30) | 30 (60) | 4 | 26 | | 45 (90) |
| Pathophysiology | 35 | 60 | 8 | 52 | | 95 |
| Veterinary Pharmacology | 45 | 60 | 8 | 52 | | 105 |
| Veterinary Pharmacy | 15 | 15 | 2 | 13 | | 30 |
| General surgery and Anaesthesiology | 15 | 30 | 4 | 26 | | 45 |
| Microbiology* | 30 (60) | 45 (90) | 6 | 39 | | 75 (150) |
| Clinical and Laboratory Diagnostics | 60 | 60 | 8 | 52 | | 120 |
| Pathomorphology* | 30 (75) | 30 (90) | 4 | 26 | | 60 (165) |
| Diseases of beneficial insects | 15 | 15 | 2 | 13 | | 30 |
| Protection of public Health in Emergency Situations | 15 | 15 | 2 | 13 | | 30 |
| Animal feed hygiene | 15 | 15 | 2 | 13 | | 30 |
| Elective course 1 | 15 | | | | | 15 |
| Elective course 2 | 15 | | | | | 15 |
| **Total** | 320 | 375 | 50 | 325 | | 695 |

*subject lasting two or more semesters and taught during the next year as well, numbers in brackets mean didactic hours taught during the next semester

Listing of elective courses in the III$^{rd}$ year – two subjects out of five during 5$^{th}$ semester:

1) Genetic modifications and gene therapy; 2) Marketing and Management; 3) Rearing and Diseases of Crestless Birds (Ratites); 4) Diseases of game animals; 5) Biomaterials

**12.9.6.D.4. Fourth year of the curriculum**

Titles of required courses with respective credit hours showing their allocation concerning the type of teaching and showing total number of hours allocated to the subject.

| Subject | Hours of training | | | | | |
|---|---|---|---|---|---|---|
| | Lectures | Classes | Tutorial | Supervised practical training | | Total |
| | | | | Practical Labs | Clinical training and practice | |
| Fish diseases | 15 | 30 | 4 | 26 | | 45 |
| Milk Hygiene | 15 | 30 | 4 | 26 | | 45 |
| Hygiene of Food Animals and Meat | 30 | 90 | 12 | 69+9 | | 120 |
| Veterinary Toxicology | 30 | 30 | 4 | 26 | | 60 |
| Horse Diseases | 105 | 135 | 18 | 117 | | 240 |
| Diseases of Farm Animals* | 45 (105) | 60 (165) | 8 | 52 | | 105 (277) |
| Diagnostic imaging | 30 | 30 | 4 | 26 | | 60 |
| Veterinary Parasitology and Invasiology* | 15 (30) | 30 (60) | 4 | 26 | | 60 (90) |
| Patomorphology* | 45 (75) | 60 (90) | 8 | 52 | | 105 (165) |
| Zoonoses | | 15 | 2 | 13 | | 15 |
| Veterinary Parasitology and Invasiology internship | | | | | 15 | 15 |
| Fur Animal Diseases | 15 | 15 | 2 | 13 | | 30 |
| Clinical training (after VIII sem.) | | | | | 160 | 160 |
| Training in Veterinary Inspection Unit (after VIII sem.) | | | | | 80 | 80 |
| **Total** | **345** | **540** | **70** | **470** | **255** | **1140** |

*subject lasting two or more semesters and taught during the next year as well, numbers in brackets mean didactic hours taught during the next semester

**12.9.6.D.5. Fifth year of the curriculum**

Titles of required courses with respective credit hours showing their allocation concerning the type of teaching and showing total number of hours allocated to the subject.

| Subject | Hours of training | | | | | |
|---|---|---|---|---|---|---|
| | Lectures | Classes | Tutorial | Supervised practical training | | Total |
| | | | | Practical Labs | Clinical training and practice | |
| Birds Diseases | 45 | 60 | 8 | 52 | | 105 |
| Andrology and Insemination | 15 | 30 | 4 | 26 | | 45 |
| Veterinary Prevention | 30 | 45 | 6 | 39 | | 75 |
| Hygiene and Technology of Food of Animal Origin | 60 | 75 | 10 | 65 | | 135 |
| Diseases of Dogs and Cats | 105 | 195 | 24 | 171 | | 300 |
| Diseases of Farm Animals * | 60 (105) | 105 (165) | 14 | 91 | | 165 (270) |
| Veterinary Dietetics | 15 | 15 | 2 | 13 | | 30 |
| Forensic Veterinary | 15 | 15 | 2 | 13 | | 30 |
| Administration and Veterinary Legislation | 30 | | | | | 30 |
| Clinical training (after semester X) | | | | | 160 | 160 |
| Training In veterinary Inspection Unit (after X sem.) | | | | | 80 | 80 |
| Diseases of Horses internship* | | | | | 30 | 30 |
| Diseases of Farm Animals internship* | | | | | 30 | 30 |
| Diseases of Dogs and Cats internship* | | | | | 30 | 30 |
| **Total** | **375** | **540** | **70** | **470** | **330** | **1245** |

*subject lasting two or more semesters and taught during the next year as well, numbers in brackets mean didactic hours taught during the next semester

**12.9.6.D.6. Sixth year of the curriculum**

Titles of required courses with respective credit hours showing their allocation concerning the type of teaching and showing total number of hours allocated to the subject.

| Subject | Hours of training | | | | |
|---|---|---|---|---|---|
| | Classes | Tutorial | Supervised practical training | | |
| | | | Practical Labs | Clinical Training | Total |
| Diseases of Horses internship * | | | | 60 (90) | 60 (90) |
| Diseases of Farm Animals internship * | | | | 60 (90) | 60 (90) |
| Diseases of Dogs and Cats internship * | | | | 60 (90) | 60 (90) |
| Birds Diseases internship | | | | 30 | 30 |
| Elective course 1 | 15 | 2 | 13 | | 15 |
| Elective course 2 | 15 | 2 | 13 | | 15 |
| Elective course 3 | 15 | 2 | 13 | | 15 |
| Elective course 4 | 15 | 2 | 13 | | 15 |
| Elective course 5 | 15 | 2 | 13 | | 15 |
| Elective course 6 | 15 | 2 | 13 | | 15 |
| **Total** | **90** | **12** | **78** | **210 (270)** | **300** |

Listing of elective courses in the VI$^{th}$ year – two subjects out of nineteen during 11$^{th}$ semester:
1)Diseases of laboratory animals; 2) Diseases of Exotic Animals; 3) Tumor transformations in animals; 4) Ultrasound scan in acute clinical conditions; 5) Clinical Endocrinology; 6) Veterinary Geriatrics; 7) Clinical Neurology and Neurosurgery; 8) First-aid in life threatening cases; 9) Clinical Pharmacology; 10) Laboratory Toxicological Analysis; 11) Clinical Analytics of Horse and Livestock Diseases; 12) Clinical Analytics of Dogs and Cats; 13) Endoscopic Diagnostics; 14) Rodents as Companion Animals; 15) Metabolic diseases of livestock; 16) Pediatrics with elements of behavior of small animals; 17) Clinical radiology of emergency medicine in small animals; 18) Veterinary Oncology; 19) Diseases of Ornamental Birds;

**12.9.6.7.** Obligatory externship work that students must undertake as part of their course

| Nature of work | Minimum period | | Year (1) in which work is carried out |
|---|---|---|---|
| | Hours | % of total study time | |
| Breeding | 80 | 1.56 | 2 |
| Clinical | 160 | 3.14 | 4 |
| Vet inspection | 80 | 1.56 | 4 |
| Clinical | 160 | 3.14 | 5 |
| Vet inspection | 80 | 1.56 | 5 |

**Appendix 9-2**

**Resolution No. 43/2012-2013**
**of the Life Sciences University of Lublin Senate of 22 February 2013**
**on the internal system of education quality management**
**at the Life Sciences University of Lublin.**

Pursuant to art. 62 par. 1 of the act of 27 July 2005 – Law on higher education (Dziennik Ustaw [Journal of Laws] no 164 item 1365 as amended) pursuant to §52 par. 2 item 2 of the Life Sciences University of Lublin, it is resolved as follows:

§1

1. To ensure the highest quality of education, as defined in the Development Strategy of the University for the years 2013-2020, an internal system of education quality management, hereinafter referred to as ISEQM, shall be implemented at the Life Sciences University as one of its priority tasks.

2. The ISEQM shall particularly aim at:

1) a permanent improvement of the graduates' education level
2) a constant promotion of the didactic rank of our academic teachers and specialists from outside the University.

§2

The operations of the ISEQM shall cover the University employees, undergraduates, PhD students, postgraduates and experts from outside the University who take part in the implementation of the didactic process.

§3

1. The ISEQM shall cover three areas of activity. They include:
1) the evaluation of education quality.
2) ensuring quality of education
3) improvements in the quality of education
2. The tasks of the ISEQM shall encompass in particular:
1) the quality analysis of the education process,
2) the compliance analysis between the programme of a given department and the mission of the University,
3) the compliance analysis between the educational results in terms of direction and the educational results of the indicated area or areas of education,
4) the analysis of the graduates' professional careers and the opinions of external stakeholders in the scope of preparing graduates for professional career and adjusting educational effects to the needs of the labour market,
5) verification of educational programmes in the context of their compliance with the National Qualifications Framework for higher education, including methods and forms of education,
6) verification of the educational effects attained by the student,
7) improvement of educational methods and the quality of administrative and information handling of the didactic process
8) analysis of the social and existential conditions of undergraduates and PhD students in dormitories,
9) improvement of the system of incentives for academic teachers, PhD students and administrative workers involved in the didactic process,
10) preparation of operational guidelines for the subordinate committees and the academic community,
11) other tasks arising from the development of the European Higher Education Area.

§4

1. The operations listed under § 3 shall be implemented at three tiers:
1) the university tier,
2) the faculty tier,
3) the department tier.
2. For the purpose of the implementation of the operations at the university tier, the rector shall appoint:
1) a rector's proxy responsible for the quality of education,
2) A University Committee for Didactics and the Management of Education Quality.

3. In order to implement the operations at the faculty tier, the dean, after consulting the faculty board, shall appoint the faculty board for the quality of education.
4. In order to implement the operations at the department tier, the dean, after consulting the faculty board, shall appoint programme councils for each department at the faculty.
5. The supervision over the ISEQM at the university level shall be held by the vice-rector for students' affairs and didactics.
6. The supervision over the ISEQM at the faculty and department level shall be held by the deans.

§5

1. The rector's proxy responsible for the quality of education shall be appointed by the rector from among academic teachers employed at the University, after consulting the vice-rector responsible for students' affairs and didactics, for the period of a University term.
2. The rector's proxy responsible for the quality of education coordinates the operations which lead to the implementation and improvement of the ISEQM at the University.

§6

1. The University Committee for Didactics and the Management of Education Quality shall be appointed by the rector for the period the University's two terms.
2. The rector's proxy responsible for the quality of education shall become the chairman of the University Committee for Didactics and the Management of Education Quality.
3. The University Committee for Didactics and the Management of Education Quality shall be composed of the

following:

1) Education Quality Review Team
2) Education Quality Implementation Team.

4. The Education Quality Implementation Team shall be composed of:
1) the rector's proxy for the quality of education, as a chairman;
2) the chairman of faculty committees for the quality of education;
3) the manager of the Studies Organization Department;
4) the manager of the Centre for Continual Learning
5) the manager of the Department of Practical Training
6) students' representative indicated by Academic Student Council of the Students' Union,
7) other persons indicated by the rector.

5. The Education Quality Review Team shall be composed of:
1) an academic teacher indicated by the rector with a positive opinion from the Senate, as a chairman,
2) one representative from each faculty board for the quality of education indicated by the chairmen of these boards,
3) the manager of the Department of Foreign Languages,
4) students' representative indicated by Academic Student Council of the Students' Union,
5) a representative of the PhD students indicated by the Council of PhD Students,
6) a representative of the University Centre of Information responsible for the handling system of the didactic process,
7) representative of the Student Career Office
8) other persons indicated by the rector.

§7

1. The tasks of the University Committee for Didactics and the Management of Education Quality shall include:
1) preparation of the policy and the procedures that make up the quality management structure within the ISEQM,
2) preparation of the ISEQM documentation templates,
3) submission of the proposals aiming at the improvement of the education process to the rector,
4) submission of the annual reports from the effects of the ISEQM operation to the Senate,
5) constant improvement of the ISEQM, including raising money from external sources for the implementation of these tasks,
6) support and monitoring of the faculty boards for education quality, which include the transfer of recommendations for the benefit of improving the quality of education.

2. The tasks of the Education Quality Implementation Team shall include:
1) the preparation of the procedures for periodic external audits which encompass students, teachers, administrative employees and external stakeholders in the scope of the education process implementation,
2) permanent monitoring and analysing of education quality at faculties, particularly: the analysis of the reports prepared by the faculty boards for education quality with regard to the implementation of the proposed changes for the benefit of education quality at faculties/departments, as well as the preparation of the institution-wide recommendations,
3) preparation of the education quality improvement programme,
4) undertaking actions which aim at the improvement of education quality, such as: trainings on the correct formation and improvement of educational programmes based on the education results described in the National Qualification Framework for high education, correct application of the ECTS credit accumulation and transfer system, creation and implementation of good practices in the scope of the institution-wide subjects and seminars, other solutions related to the improvement of the education process,
5) controlling the applications for the creation of new departments and specialisations submitted to the Senate,
6) transfer of recommendations regarding the improvement of education quality to faculty boards for education quality, as well as the assistance with education programmes that are being implemented, in accordance with applicable regulations, with regard to the mission and the strategy of the university,
7) recommending the changes in the functioning of the information student support system and the concern for its widespread application,
8) publication of the information about the European Higher Education Area and the new regulations by the Minister of Science and Higher Education about education and other information about the improvement of the didactic process.

3. The tasks of the Education Quality Review Team shall include:
1) preparation and coordination of periodic surveys among the students of full-time and part-time programmes, postgraduate students, Ph.D. students, academic teachers and the administration (survey concerns the education programme, including education results, studies organization, studying conditions, teachers' grades, etc.)
2) the survey analysis handed by the faculty boards for education quality and other units responsible for the

implementation of this research,
3) result analysis of the operations of faculty boards for the quality of education,
4) monitoring of the implementation of the guidelines contained in the procedures prepared by the University Committee for Didactics and the Management of Education Quality,
5) publication of the education quality evaluation results.

§8

1. Faculty board for education quality, appointed by the dean after consultation with the faculty board for the period of one University term, shall be composed of:

1) vice-dean as the chairman,
2) at least five academic teachers employed at the faculty,
3) students' representative from the faculty indicated by the Faculty Student Council of the Students' Union,
4) a representative of the PhD students who study at the faculty indicated by the PhD Students' Council

2. The tasks of the faculty board for education quality include:

1) ensuring the quality of education:

a) indicating methods for the improvement of education, including the organisation and the conditions for running courses, methods and forms of education, methods of verification of the anticipated education effects, correct implementation of ECTS credits, organisation of the didactic process at the faculty,
b) support for programme councils in modernising education programmes and preparing new education programmes in accordance with NQF for higher education,
c) preparation of improvement methods for the administrative handling of the didactic process,
d) preparation of the methods that help in raising the quality of the teaching staff, with particular attention to the improvement of their qualifications and the preparation of the system of incentives for academic teachers, PhD students and administrative workers involved in the didactic process,
e) annual planning of the operations that aim at the improvement of the quality of education.

2) reviewing the quality of education:

a) monitoring of implementing recommendations of the University Committee for Didactics and the Management of Education Quality at the faculty,
b) the analysis of the compliance of the anticipated educational results that were described in education programmes, with educational results of the indicated area or areas of education, as described in the NQF for higher education,
c) the analysis of the methods and forms of education and the methods of verification of education effects attained by the student,
d) the analysis of adaptation of the educational results attained in the process of education to the requirements of the labour market,
e) quality evaluation of the final theses,
f) coordination of the student surveys of the work of academic teachers who run courses,
g) the analysis of the results of education quality, in particular the results of the exams held and other forms of verification of education effects attained in the scope of knowledge, skills and social competence, the students' assessment of the employees and the conclusions from the monitoring of university graduates' careers,
h) the assessment of undergraduates and PhD students' social conditions, including the possibility to obtain a scholarship and allowances, as well as an access to dormitories,
i) annual submission to the dean, faculty board and the University Committee for Didactics and the Management of Education Quality, the results of the evaluation of the education quality at the faculty and the presentation of the guidelines regarding a reorganisation plan for the improvement of the quality of education,
j) publication of the annual education quality results on the faculty's website.

§9

1.The programme council of a department, appointed and dismissed by the dean after the consultation with the faculty board, shall be composed of:

1) a chairman appointed from among academic teachers employed at the faculty,
2) from 3 to 6 members who represent specialisations or major subjects run as part of a particular course of study; the members of the programme council may include employees from outside the faculty who run classes at a given faculty,
3) a representative of the students from a given department.

2. The tasks of the programme council shall include:

1) concern for the correct implementation and a high level of the process of education,
2) modelling of the profile of the graduate that is in compliance with the department, specialisation and the anticipated educational effects,
3) updating of the educational programmes for a given educational cycle in accordance with the acquired knowledge on

the requirements of the labour market,
4) a correct selection and sequence of modules, shape of the courses and their mutual proportions, including the recommendation of the essential number of laboratory classes required to attain the anticipated educational effects,
5) the analysis of the description of the individual modules with reference to the accomplishment of the effects anticipated in a given course, elimination of the recurring content and a correct assignment of the ECTS credits,
6) defining the rules and assessment criteria for final theses which are proper for the field of study in terms of methodology and content,
7) the implementation of the recommendation of the University Committee for Didactics and the Management of Education Quality.
3. The programme council shall watch over:
1) the choice of topics for the final thesis and its compliance with the field of study in particular,
2) a suitable preparation of the criteria for evaluating the students by the units, with reference to individual topics, with regard to the evaluation of the accomplishment of anticipated education effects in compliance with the education concept for a given department,
3) verification of the subject matter and the number of extra-curricular classes,
4) proper length and term of internship,
5) correct weekly and daily timetable together with the correct number of courses,
6) proper selection of the promotor for the thesis, especially with regard to their qualifications,
7) required proportion of independent scientific workers to the number of students,
8) the correct number and qualification of the teaching staff that run lectures and seminars,
9) the use of workers employed in other Faculties or from outside the University for running specialist or specialty courses,
10) practical experience of the doctors who constitute the faculty minimum at the vocational training studies,

11) proper conditions for studying, including the capacity of classrooms, equipment in classrooms and laboratories, their sanitary condition, etc.,
12) a constant replenishment of library resources in accordance with bibliographies required for the teaching of individual modules,
13) adaptation of student group sizes to the nature of the classes held.
4. The tasks of the chairman of the programme council shall include:
1) managing the ongoing operations of the council.
2) submission of the proposals of change and/or new education programmes to the dean,
3) consultations with the authors of education programmes and teachers as far as the content, form, number of hours, etc. are concerned,
4) submission of all difficulties and initiatives related to the proper implementation of education on a high level to the dean,
5) concern for the correct implementation of the rector's decrees on the rules of creation of education programmes,
6) cooperation with the faculty board for education quality.

§10

For the implementation of the provisions of this resolution, the rector has issued a decree to define the following:
1) procedures for the operation of the internal system of education quality management,
2) types of survey, the rules of survey preparation and carrying out, as well as the publication of its results.

§11

Resolution no 37/2008-2009 of the Senate of the Life Sciences University in Lublin of 24 April 2009 on the internal system of ensuring quality of education at the Life Sciences University in Lublin shall now become null and void.

§12

The resolution shall become effective on the date of its adoption.

**The Chairman of the Senate**
**Rector**
**Prof. Marian Wesołowski, PhD**

**Appendix 10-1**

**Year 2010**

| FACULTY OF VETERNARY MEDICINE | Number of faculty | Number of faculty involved in research | Number of research faculty involved in delivering the professional curriculum | Total research FE | Number of original peer-reviewed research publication | Number of original book chapters |
|---|---|---|---|---|---|---|
| **Inst. of Biological Bases of Animal Diseases** | | | **21** | **29** | **7** | |
| **Dept. of Animal Anatomy and Histology** | | | **13** | **18** | **5** | |
| Dept. of Pathological Anatomy | | | 5 | 7 | 3 | |
| **Dept. of Animal Biochemistry** | | | **4** | **6** | **7** | |
| **Dept. of Epizootiology and Clinic Infectious Diseases** | | | **11** | **17** | **34** | |
| **Dept. of Animal Physiology** | | | **11** | **15** | **6** | **2** |
| **Dept. of Food Hygiene of Animal Orygin** | | | **9** | **12** | **4** | |
| **Dept. and Clinic of Animal Surgery** | | | **13** | **19** | **15** | |
| Dept and Clinic of Animal Internal Diseases | | | 14 | 21 | 31 | |
| **Dept. and Clinic of Animal Reproduction** | | | **9** | **13** | **4** | **2** |
| **Dept. of Preclinical Veterinary Sciences** | | | **10** | **16** | **12** | |
| **College total** | | | **120** | **173** | **128** | **4** |

**Year 2011**

| FACULTY OF VETERNARY MEDICINE | Number of faculty | Number of faculty involved in research | Number of research faculty involved in delivering the professional curriculum | Total research FE | Number of original peer-reviewed research publication | Number of original book chapters |
|---|---|---|---|---|---|---|
| **Inst. Of Biological Bases of Animal Diseases** | | | **21** | **29** | **14** | **3** |
| **Dept. of Animal Anatomy and Histology** | | | **14** | **19** | **8** | |
| Dept. of Pathological Anatomy | | | 5 | 7 | 6 | |
| **Dept. of Animal Biochemistry** | | | **4** | **6** | **9** | |
| Dept. of Epizootiology and Clinic Infectious Diseases | | | 11 | 17 | 33 | |
| **Dept. of Animal Physiology** | | | **11** | **15** | **6** | |
| **Dept. of Food Hygiene of Animal Orygin** | | | **9** | **12** | **8** | |
| **Dept. and Clinic of Animal Surgery** | | | **13** | **17** | **21** | |
| Dept and Clinic of Animal Internal Diseases | | | 14 | 21 | 36 | 1 |
| **Dept. and Clinic of Animal Reproduction** | | | **9** | **13** | **8** | |
| **Dept. of Preclinical Veterinary Sciences** | | | **10** | **16** | **9** | |
| **College total** | | | **122** | **172** | **158** | **4** |

**Year 2012**

| FACULTY OF VETERNARY MEDICINE | Number of faculty | Number of faculty involved in research | Number of research faculty involved in delivering the professional curriculum | Total research FE | Number of original peer-reviewed research publication | Number of original book chapters |
|---|---|---|---|---|---|---|
| **Inst. of Biological Bases of Animal Diseases** | | | **21** | **29** | **11** | **2** |
| **Dept. of Animal Anatomy and Histology** | | | **14** | **19** | **12** | |
| Dept. of Pathological Anatomy | | | 5 | 7 | 4 | |
| **Dept. of Animal Biochemistry** | | | **4** | **6** | **3** | |
| **Dept. of Epizootiology and Clinic Infectious Diseases** | | | **11** | **17** | **22** | |
| **Dept. of Animal Physiology** | | | **11** | **15** | **13** | **2** |
| **Dept. of Food Hygiene of Animal Orygin** | | | **9** | **12** | **5** | |
| **Dept. and Clinic of Animal Surgery** | | | **13** | **19** | **14** | **2** |
| Dept and Clinic of Animal Internal Diseases | | | 14 | 21 | 20 | 9 |
| **Dept. and Clinic of Animal Reproduction** | | | **9** | **13** | **2** | |
| **Dept. of Preclinical Veterinary Sciences** | | | **10** | **16** | **11** | |
| **College total** | | | **122** | **174** | **117** | **15** |

**Year 2013**

| FACULTY OF VETERNARY MEDICINE | Number of faculty | Number of faculty involved in research | Number of research faculty involved in delivering the professional curriculum | Total research FE | Number of original peer-reviewed research publication | Number of original book chapters |
|---|---|---|---|---|---|---|
| **Inst. Of Biological Bases of Animal Diseases** | | | **21** | **29** | **10** | |
| **Dept. of Animal Anatomy and Histology** | | | **12** | **17** | **8** | |
| Dept. of Pathological Anatomy | | | 5 | 7 | 2 | |
| **Dept. of Animal Biochemistry** | | | **4** | **6** | **7** | |
| **Dept. of Epizootiology and Clinic Infectious Diseases** | | | **11** | **17** | **15** | **3** |
| **Dept. of Animal Physiology** | | | **10** | **15** | **8** | |
| **Dept. of Food Hygiene of Animal Orygin** | | | **9** | **12** | **4** | |
| **Dept. and Clinic of Animal Surgery** | | | **13** | **19** | **17** | |
| Dept and Clinic of Animal Internal Diseases | | | 14 | 21 | 8 | 3 |
| **Dept. and Clinic of Animal Reproduction** | | | **9** | **13** | **10** | **1** |
| **Dept. of Preclinical Veterinary Sciences** | | | **10** | **16** | **11** | **1** |
| **College total** | | | **119** | **172** | **100** | **8** |

**Year 2014**

| FACULTY OF VETERNARY MEDICINE | Number of faculty | Number of faculty involved in research | Number of research faculty involved in delivering the professional curriculum | Total research FE | Number of original peer-reviewed research publication | Number of original book chapters |
|---|---|---|---|---|---|---|
| **Inst. of Biological Bases of Animal Diseases** | | | **21** | **29** | **25** | |
| **Dept. of Animal Anatomy and Histology** | | | **14** | **19** | **18** | |
| Dept. of Pathological Anatomy | | | 5 | 7 | 0 | |
| **Dept. of Animal Biochemistry** | | | **4** | **6** | **8** | |
| **Dept. of Epizootiology and Clinic Infectious Diseases** | | | **11** | **17** | **10** | |
| **Dept. of Animal Physiology** | | | **10** | **15** | **9** | |
| **Dept. of Food Hygiene of Animal Orygin** | | | **9** | **12** | **7** | |
| **Dept. and Clinic of Animal Surgery** | | | **13** | **19** | **27** | |
| Dept and Clinic of Animal Internal Diseases | | | 14 | 21 | 9 | |
| **Dept. and Clinic of Animal Reproduction** | | | **9** | **13** | **20** | |
| **Dept. of Preclinical Veterinary Sciences** | | | **10** | **16** | **15** | |
| **College total** | | | **121** | **174** | **148** | |

**Year 2010**

| FACULTY OF VETERNARY MEDICINE | Extramurally-sponsored federal (national) grants | | Extramurally-sponsored private contracts | | Patents |
|---|---|---|---|---|---|
| | Number | Value (PLN) | Number | Value (PLN) | Number |
| Inst. of Biological Bases of Animal Diseases | – | – | – | – | – |
| Dept. of Animal Anatomy and Histology | N N308310437<br>3104/B/P01/2009/37 | 0 (23 000 [a]) | – | – | – |
| Dept. of Pathological Anatomy | – | – | – | – | – |
| Dept. of Animal Biochemistry | – | – | – | – | – |
| Dept. of Epizootiology and Clinic Infectious Diseases | N R12005806/2009<br>0543/R/P01/2009/06<br>N N308 599939<br><br>N N308 599539 | 65 000 (150 000 [a])<br><br>100 000 (350 000 [a])<br><br>28 600 (50 000 [a]) | – | – | – |
| Dept. of Animal Physiology | – | – | – | – | – |
| Dept. of Food Hygiene of Animal Orygin | – | – | – | – | – |
| Dept. and Clinic of Animal Surgery | N N308 295937<br>2959/B/P01/2009/47 | 82 076 (203 188 [a]) | WKC/U-13 | 15 000 | |
| Dept. and Clinic of Animal Internal Diseases | N30801632/1409<br>1409/P01/2007/32<br><br>N N308075334<br>0753/B/P01/2008/34 | 0 (150 000 [a])<br><br><br><br>0 (99 000 [a]) | – | – | – |
| Dept. and Clinic of Animal Reproduction | – | – | – | – | – |
| Dept. of Preclinical Veterinary Sciences | N N308 3169 33<br>3169/B/P01/2007/33<br><br>N N308 386137<br>3861/B/P01/2009/37<br><br>N N308 603438<br>2959/B/P01/2010/38<br><br>N N308 598439 | 22 800 (200 000 [a])<br><br>105 737 (220 000 [a])<br><br>80 000 (237 000 [a])<br><br>6 500 (290 000 [a]) | | | |
| **College total** | | **490 713** | | **15 000** | |

a) Total cost of grant

**Year 2011**

| FACULTY OF VETERNARY MEDICINE | Extramurally-sponsored federal (national) grants | | Extramurally-sponsored private contracts | | Patents |
|---|---|---|---|---|---|
| | Number | Value (PLN) | Number | Value (PLN) | Number |
| Inst. of Biological Bases of Animal Diseases | – | – | – | – | – |
| Dept. of Animal Anatomy and Histology | – | – | – | – | – |
| Dept. of Pathological Anatomy | – | – | – | – | – |
| Dept. of Animal Biochemistry | – | – | – | – | – |
| Dept. of Epizootiology and Clinic Infectious Diseases | N R12005806/2009<br>0543/R/P01/2009/06<br><br>N N308 599939<br><br>N N308 599539<br>IPBU.03.01.00-06-755/11-00 | 65 000 (150 000 [a])<br><br>150 000 (350 000 [a])<br><br>15 000 (50 000 [a])<br>1 500 000(5 921 836) | WZE/<br>U-29<br>(2009-11)<br><br>WZE/<br>U-31<br>(2009-11) | 20 000<br><br>20 000 | – |
| Dept. of Animal Physiology | – | – | – | – | – |
| Dept. of Food Hygiene of Animal Orygin | N N308574540<br>5824/B/P01/2011/40 | 60 000 (310 000 [a]) | – | – | – |
| Dept. and Clinic of Animal Surgery | N N308 295937<br>2959/B/P01/2009/47<br><br>N N308582440<br>5824/B/P01/2011/40 | 82 076 (203 188 [a])<br><br>117 000 (250 000 [a]) | WKC/MŚ<br>/17/2011 | 19 000 | – |
| Dept. and Clinic of Animal Internal Diseases | – | – | – | – | – |
| Dept. and Clinic of Animal Reproduction | – | – | – | – | – |
| Dept. of Preclinical Veterinary Sciences | N N308 386137<br>3861/B/P01/2009/37<br><br>N N308 603438<br>2959/B/P01/2010/38<br><br>N N308 598439 | 40 000 (220 000 [a])<br><br>90 000 (237 000 [a])<br><br>114 500 (290 000 [a]) | – | – | – |
| **College total** | | **2 216 500** | | **59 000** | |

[a] Total cost of grant

**Year 2012**

| FACULTY OF VETERNARY MEDICINE | Extramurally-sponsored federal (national) grants | | Extramurally-sponsored private contracts | | Patents |
|---|---|---|---|---|---|
| | Number | Value (PLN) | Number | Value (PLN) | Number |
| Inst. of Biological Bases of Animal Diseases | – | – | – | – | – |
| Dept. of Animal Anatomy and Histology | – | – | – | – | – |
| Dept. of Pathological Anatomy | – | – | – | – | – |
| Dept. of Animal Biochemistry | – | – | – | – | – |
| Dept. of Epizootiology and Clinic Infectious Diseases | N R12005806/2009<br>0543/R/P01/2009/06<br><br>N N308 599939<br><br>N N308 599539<br>IPBU.03.01.00-06-755/11-00 | 65 000 (150 000 [a])<br><br>100 000 (350 000 [a])<br><br>6 400 (50 000 [a])<br>1 500 000(5 921 836) | WZE/<br>U-22<br>(2011-12) | 20 000 | – |
| Dept. of Animal Physiology | – | – | – | – | – |
| Dept. of Food Hygiene of Animal Orygin | N N308574540<br>5824/B/P01/2011/40 | 145 000 | – | – | – |
| Dept. and Clinic of Animal Surgery | N N308 295937<br>2959/B/P01/2009/47 | 17 550 (203 188 [a]) | WKC/MŚ/17/2012 | 20 000 | |

| | | | | | |
|---|---|---|---|---|---|
| | N N308582440 5824/B/P01/2011/40 | 100 000 (250 000 [a]) | – | – | – |
| Dept. and Clinic of Animal Internal Diseases | – | – | – | – | – |
| Dept. and Clinic of Animal Reproduction | – | – | – | – | – |
| Dept. of Preclinical Veterinary Sciences | N N308 386137 3861/B/P01/2009/37<br>N N308 603438 2959/B/P01/2010/38<br>N N308 598439 | 20 000 (220 000 [a])<br>67 000 (237 000 [a])<br>124 800 (290 000 [a]) | – | – | – |
| **College total** | | **1564575** | | **40 000** | |

[a] Total cost of grant

**Year 2013**

| **FACULTY OF VETERNARY MEDICINE** | **Extramurally-sponsored federal (national) grants** | | **Extramurally-sponsored private contracts** | | **Patents** |
|---|---|---|---|---|---|
| | **Number** | **Value (PLN)** | **Number** | **Value (PLN)** | **Number** |
| Inst. of Biological Bases of Animal Diseases | – | – | – | – | – |
| Dept. of Animal Anatomy and Histology | – | – | – | – | – |
| Dept. of Pathological Anatomy | – | – | – | – | – |
| Dept. of Animal Biochemistry | – | – | – | – | – |
| Dept. of Epizootiology and Clinic Infectious Diseases | N N308 599939<br>N N308 599539 IPBU.03.01.00-06-755/11-00 | 0 (350 000 [a])<br>0 (50 000 [a])<br>1 500 000(5 921 836) | – | – | – |
| Dept. of Animal Physiology | – | – | – | – | – |
| Dept. of Food Hygiene of Animal Orygin | N N308574540 5824/B/P01/2011/40 | 102 500 (310 000 [a]) | – | – | – |
| Dept. and Clinic of Animal Surgery | N N308 295937 2959/B/P01/2009/47<br>N N308582440 5824/B/P01/2011/40 | 0 (203 188 [a])<br>33 000 (250 000 [a]) | WKC/OŚ /17/2013<br>WKC/OŚ /17/2013 | 20 000<br>20 000 | – |
| Dept. and Clinic of Animal Internal Diseases | – | – | – | – | – |
| Dept. and Clinic of Animal Reproduction | – | – | – | – | – |
| Dept. of Preclinical Veterinary Sciences | N N308 386137 3861/B/P01/2009/37<br>N N308 603438 2959/B/P01/2010/38<br>N N308 598439 | 0 (220 000 [a])<br>0 (237 000 [a])<br>44 200 (290 000 [a]) | WKD/U-57 (2006-2013) | 239 120 | – |
| **College total** | | **1506 500** | | **279 120** | |

[a] Total cost of grant

**Year 2014**

| **FACULTY OF VETERNARY MEDICINE** | **Extramurally-sponsored federal (national) grants** | | **Extramurally-sponsored private contracts** | | **Patents** |
|---|---|---|---|---|---|
| | **Number** | **Value (PLN)** | **Number** | **Value (PLN)** | **Number** |
| Inst. of Biological Bases of Animal Diseases | – | – | – | – | – |

| | | | | | |
|---|---|---|---|---|---|
| Dept. of Animal Anatomy and Histology | – | – | – | – | – |
| Dept. of Pathological Anatomy | – | – | – | – | – |
| Dept. of Animal Biochemistry | – | – | – | – | – |
| Dept. of Epizootiology and Clinic Infectious Diseases | N N308 599539<br>IPBU.03.01.00-06-755/11-00 | 0 (50 000 [a])<br>32 500 (149 500 [a])<br>1 421 836 (5 921 836) | | | |
| Dept. of Animal Physiology | – | – | – | – | – |
| Dept. of Food Hygiene of Animal Orygin | N N308574540<br>5824/B/P01/2011/40 | 2 500 (310 000 [a]) | – | – | – |
| Dept. and Clinic of Animal Surgery | N N308582440<br>5824/B/P01/2011/40 | 0 (250 000 [a]) | WKC/OŚ<br>WKC/MŚ<br>/17/2014 | 20 000 | _ |
| Dept. and Clinic of Animal Internal Diseases | – | – | – | – | – |
| Dept. and Clinic of Animal Reproduction | – | – | – | – | – |
| Dept. of Preclinical Veterinary Sciences | N N308 603438<br>2959/B/P01/2010/38 | 0 (237 000 [a]) | _ | _ | _ |
| **College total** | | **1 456 836** | | | |

[a] Total cost of grant

| **FACULTY OF VETERNARY MEDICINE** | **Number of students in funded & unfunded research projects** | **Number of peer reviewed publications in which DVM students are autors/ co-autors** | **Number of veterinary medical students in a joint DVM/graduate academic program** | |
|---|---|---|---|---|
| | | | **PhD (or equivalent)** | **Master' s (or equivalent)** |
| 2010 | 2 | 1 | 14 | 157 |
| 2011 | 19 | 1 | 8 | 139 |
| 2012 | 22 | 3 | 8 | 176 |
| 2013 | 14 | 4 | 15 | 143 |
| 2014 | 33 | 1 | 18 | 145 |

## Appendix 11-1: School score report data, passage rates and students attrition rates

Table A (modified)

| Year | Numer of students starting studies | Numer of students obtaining diploma | Mean grade in diploma (scale 2-5) |
|---|---|---|---|
| 2014 | 189 | 129 | 3,26 |
| 2013 | 179 | 126 | 3,30 |
| 2012 | 170 | 140 | 3,26 |
| 2011 | 195 | 125 | 3,59 |
| 2010 | 169 | 120 | 3,51 |

Table B

| Entering Class | Attrition | Reason for relative attrition | | Absolute attrition | |
|---|---|---|---|---|---|
| | | Academic | Personal | Number | Percentage |
| 2014 | 60 | 5 | 8 | 47 | 24,86 |
| 2013 | 53 | 12 | 5 | 36 | 20,11 |
| 2012 | 30 | 6 | 5 | 19 | 11,17 |
| 2011 | 70 | 12 | 8 | 50 | 25,64 |
| 2010 | 49 | 7 | 4 | 38 | 22,48 |

**CURRICULUM ADDENDUM**

*12.9.6.8 a. Brief catalog-style course description.*
**Syllabuses of obligatory subjects taught at Faculty of Veterinary Medicine in Lublin**

**CURRICULUM OBLIGATORY MODULES**
**First semester modules**

| **Name of the programme module** | **Chemistry** |
|---|---|
| Programme module type | obligatory |
| Year of studies for a given field | I |
| Term for a given field | 1 |
| ECTS credits together with contact/no contact hours division | 4 (2/2) |
| A unit providing the course | Department of Biochemistry |
| Module objective | Enhancement of secondary school knowledge of chemistry with selected issues from the field of inorganic, general and organic chemistry, which are indispensable for understanding biochemical issues discussed in the following semesters. Acquiring basic knowledge for the correct performance of chemical analyses, which are applied in laboratories of different profiles, including clinical chemistry, as well as food inspection. The aim of teaching chemistry is to acquaint students with biochemical transformations which take place in cells and tissues, and which are indispensable for the proper functioning of the entire organism, as well as with some laboratory techniques used in a biochemical laboratory. The acquaintance with these transformations is necessary for an understanding of pathological processes at the cellular level and the interpretation of laboratory test results, which are all acquired during clinical classes. |
| Educational results | Knowledge: Knowledge to define basic concepts and phenomena in the field of inorganic, general and organic chemistry. Ability to integrate the knowledge of inorganic, general and organic chemistry by demonstrating selected functions of a live organism. Ability to describe selected analytical methods. |
| | Skills: The ability to conduct routine chemical experiments. The ability to analyse the results of conducted tests and formulate conclusions, which follow from conducted analyses. The ability to use different sources of knowledge. |
| | Social competence: Awareness of the need for further education and self-improvement. Students develop their ability to work in a group. |
| Content of the programme module | Basic chemical terms, atomistic theory. Biological significance of selected elements. Stoichiometry of chemical formulas and chemical equations. Solutions and manners of expressing concentration. Electrolytic dissociation and the ionic product of water, pH, hydrolysis, buffers. Oxidation-reduction processes. Basics of analytical chemistry. Organic chemistry – nomenclature, representatives of the main groups of organic compounds, the identification of function groups of these connections Carbohydrates, Fats, Amino acids. Identification of selected cations and anions as well as function groups of compounds, buffer properties, acid-base titration, redox titration, precipitation titration, dialysis, identification of sugars and lipid components. |
| Planned didactic forms/actions/methods | Laboratory classes, lectures, self-study materials on the unit's website, online materials available upon entering a password (VikiWet, Casus) |

| **Name of the programme module** | **Cell biology** |
|---|---|
| Programme module type | obligatory |
| Year of studies for a given field | I |
| Term for a given field | I |
| ECTS credits together with contact/no contact hours division | 2 (1/1) |
| A unit providing the course | Institute of Fish Diseases and Biology |
| Module objective | Acquisition of knowledge and skills of cell biology |
| Educational results | Knowledge: Knowledge and the ability to describe the molecular structure and functional components of the cell membrane. Knowledge and ability to describe the structures and functions of organelles. The ability to describe and explain molecular mechanisms of signal transduction and basic cellular signalling pathways. Knowledge and ability to describe the movement of organelles, follicles and the flow of proteins in cells. Knowledge of the mechanisms that control: the cellular cycle, ageing process and the death of cells, apoptosis and necrosis. |
| | Skills: Ability to accurately analyse the principles of the correct function of the cell and the description of electronograms showing structures of animal cells. The ability to make a selection of cellular function and structure examinations. |
| | Social competence: The ability to cooperate and work in a group assuming various roles. Understanding the importance of lifelong permanent learning. |

| | |
|---|---|
| Content of the programme module | Cellular biology – Structural and functional organisation of an animal cell. Description of individual cellular components in different cell types. Bio-membranes and their role in cellular transport. The flow of follicles and proteins in cells. Principles of intercellular signalling. Biology and therapeutic applications of stem cells. Control of the cellular cycle and cell death. Morphological characteristics of apoptosis and necrosis. Methods of cellular function and structure examinations. |
| Planned didactic forms/actions/methods | Group work/ lectures, presentation of knowledge, demonstrations of electrograms. |

| **Name of the programme module** | **Information Technology** |
|---|---|
| Programme module type | Obligatory |
| Year of studies for a given field | I |
| Term for a given field | 1 |
| ECTS credits together with contact/no contact hours division | 2 (1/1) |
| A unit providing the course | Department of Applied Mathematics and Computer Science |
| Module objective | Mastering the skill of using a word processor and a spreadsheet application, as well as the ability to create multimedia presentations. Acquiring basic information on the Python programming language and preparation for further self-study. Improving student knowledge and skills in the field of information technology to ensure conscious participation in the development of the informatics society. |
| Educational results | Knowledge: Understanding the essence and the concepts of a word processor, spreadsheet, multimedia presentation and programming language. Knowledge of the principles of correct text creation and formatting in the word processor with the serial correspondence tool. Knowledge of the processing tools and data analysis on a spreadsheet. Knowledge of programming basics in the Python programming language. |
| | Skills: The ability to draw up a long text, depending on the imposed format, with a particular emphasis on the rules of scientific papers. The ability to prepare a multimedia presentation related to the field of study. The ability to use the right tools to automatically draw up letters and create labels. The ability to use a spreadsheet for complex mathematical calculations, with particular emphasis on mathematical formulas, graphs and the use of tools for data analysis. The ability to independently write a simple programme in the Python language. |
| | Social competence: The ability to estimate the task difficulty and consciously choose the right tools for its implementation. Awareness of the technological progress and acknowledgement of the need for constant education in informatics technology. |
| Content of the programme module | The lecture covers: text processing with a particular consideration of the principles of automated formatting of a so-called long document, and the serial correspondence tool with a database. In addition, a spreadsheet as a tool for problem analysis, with reference to the acquired knowledge of physics; the creation of formulas and data analysis in a spreadsheet. Preparation of an oral performance supported by a multimedia presentation. Programming basics in the Python programming language. The tutorials cover a practical implementation of the lecture content in a computer laboratory. Working with a long document, serial correspondence, spreadsheet as an advanced calculator and a device for data analysis. Multimedia presentation – principles of creation. Programming basics. |
| Planned didactic forms/actions/methods | Practical assignments – working with a computer and respective applications, completion of the tasks assigned in the computer laboratory, discussion, lecture, conversation. |

| **Name of the programme module** | **Work safety regulations** |
|---|---|
| Programme module type | Obligatory |
| Year of studies for a given field | I |
| Term for a given field | I |
| ECTS credits together with contact/no contact hours division | 1 (0.72, 028) |
| Academic unit offering the module | **OHS and Fire Protection Section** |
| Module objective | To inform students about:<br>legal work protection regulations, OHS regulations, work environment factors which may pose a risk for health and life safety, general rules and methods of elimination or reduction of the impact of hazardous and detrimental factors in the work environment, procedures in emergency and dangerous situations, and in the event of an accident at work; providing first aid, general knowledge of ergonomics in regard to the adaptation of devices and equipment of a work place to individual psycho-physical features and abilities. |
| Educational results | Knowledge: Knowledge about legal protection of work, obligations arising from the rules and regulations regarding occupational safety and health, general knowledge about ergonomics /rules of the employee-work environment system. Knowledge about hazards for health and life that occurring in the work environment, methods of assessing a scale of risk / occupational risk / and selecting and applying one of the methods of eliminating or limiting the risk depending on its type, and selecting means of collective and individual protection. Knowledge of procedures used in case of accidents, the risk of failure and the provision of first aid. |

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| | Skills: To acquire knowledge about safety at work and available technical solutions in the work environment to ensure the required level of occupational safety and health. Applying technical preventive means limiting or eliminating hazardous and detrimental factors at work, at the same time applying the knowledge about ergonomics in the work processes. Knowing how to provide first aid and properly assess and take efficient measures in emergency or hazardous situations occurring at work. |
| | Social competence: To demonstrate independence in taking actions, formulate opinions, accept responsibility for one's own decisions, awareness of their effects, particularly those affecting safety conditions at work. |
| Contents of the education module | Polish and EU legal basis for occupational health and safety – sources of the labour law /regulations, principles, standards/ Employer's and employee's OHS responsibilities and rights. Characteristics of onerous, detrimental and hazardous factors at work. The method of limiting and eliminating impact of hazardous and detrimental factors on employees' health and life. Occupational risk – definition, assessment, occupational risk estimation in a selected profession /veterinarian/. Accidents, criteria – accidents at work, post-accident procedures. First aid – basic rescue procedures concerning vital functions of the human body. Ergonomics – the concept of ergonomics, analysis of the profession in terms of ergonomics. Fire protection in the work place. |
| Planned didactic forms/activities/methods | Lectures + discussions with audio-visual aids, training materials.<br>Preparation for the credit test. |

| **Name of the programme module** | **Philosophy** |
|---|---|
| Programme module type | Obligatory |
| Year of studies for a given field | I |
| Term for a given field | I |
| ECTS credits together with contact/no contact hours division | 2 (1/1) |
| A unit providing the course | Department of Modern Philosophy History UMCS |
| Module objective | Acquainting students with issues and philosophical standpoints together with developing rational and socially desirable skills and attitudes |
| Educational results | Knowledge: Orderly general knowledge of theories and methodology of the history of philosophy. Elementary knowledge of interconnections between philosophy and other fields of culture. Knowledge of main directions of development and the most important and most recent achievements in the field of philosophy. |
| | Skills: The ability to formulate and analyse a philosophical issue (also other than philosophical) precisely. The ability to select methods and research tools, prepare and present results. The ability to argue rationally with the use of opinions of other authors, as well as to formulate conclusions. |
| | Social competence: The ability to show creativity in search of possible solutions of philosophical problems (and other problems). The need for constant education and improvement of one's skills. |
| Content of the programme module | The course demonstrates main issues and their model solutions formulated in European philosophy, which relate to the understanding of philosophy, its relationship with other fields of culture and issues from main sections of philosophy: philosophy versus other fields of culture (outlook, empirical sciences, ideology, religion, art); sections of philosophy and an outline of their issues – ontology, epistemology, ethics, aesthetics, axiology, anthropology, history of philosophy, logics; specific problems and viewpoints in ontology – monism, dualism, pluralism, materialism, idealism, determinism, indeterminism, causalism, teleologism; specific problems and viewpoints of epistemology – rationalism, irrationalism, empiricism, realism, epistemological idealism, falsificationism, concepts of truth; specific problems and viewpoints in ethics – absolutism, relativism, kinds and hierarchy of values, ethical intellectualism, moralism, hedonism, utilitarianism). |
| Planned didactic forms/actions/methods | Lectures, discussions, written compositions |

| **Name of the programme module** | **Latin** |
|---|---|
| Programme module type | obligatory |
| Year of studies for a given field | I |
| Term for a given field | I and II |
| ECTS credits together with contact/no contact hours division | 1 (0.6/0.4), 1 (0.7/0.3) |
| A unit providing the course | Department of Foreign Languages |
| Module objective | The aim of the class is to acquaint students with basic issues of inflection and syntax in Latin, basic Latin terminology, and general rules of formulating diagnoses in Latin together with practising the skill of translating Latin text. |
| Effects of education | Knowledge: Basic knowledge of Latin grammar. Knowledge of medical vocabulary |
| | Skills: Students are able to read Latin text with the use of correct pronunciation, vowel length and accent. The ability to use medical nomenclature in Latin both passively and actively. The ability to translate Latin text; the ability to recognise basic grammatical forms |
| | Social competence: Understanding the importance of lifelong learning |
| Content of the programme module | The class covers the basics of Latin grammar and specialist vocabulary within medical nomenclature (names of animals, anatomy, names of diseases, forms for prescriptions and their component parts) |
| Planned didactic | expository method; translation exercises with texts; individual work; group work |

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| forms/actions/methods | |

| **Name of the programme module** | **Histology and embryology 1** |
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| Programme module type | Obligatory |
| Year of studies for a given field | I |
| Term for a given field | I |
| ECTS credits together with contact/no contact hours division | 5 (3/ 2) |
| A unit providing the course | Department of Anatomy and Histology of Animals |
| Module objective | Acquainting students with general histology: classification of animal tissues, their microscopic structure and ultrastructure, place of occurrence and functions. Acquainting students with embryology: stages of ontogenetic development and mechanisms that regulate respective stages of avian and mammalian development |
| Educational results | Knowledge: Knowledge of tissue classification, microscopic structure, place of occurrence in the animal body, stages and mechanisms of embryonic avian and mammalian development. Knowledge of how the tissue structure and its function are linked together, stages of embryonic development, mechanisms that navigate embryonic development. Understanding processes that take place in respective tissues |
| | Skills: The ability to independently recognise the microscopic structure of tissues. The ability to analyse tissue structure and stages of embryonic avian and mammalian development. The ability to find a link between the structure and function of tissues |
| | Social competence: The ability to share the knowledge of general histology and embryology in an academic milieu and outside it (among other social groups). The ability to cooperate in a group and assume different roles; understanding the importance of lifelong learning and self-improvement |
| Content of the programme module | Acquaintance with histological structure of animal tissues: epithelial, connective, muscle, nervous and glial, which will enable the acquisition of basic knowledge of general animal histology. Connection of tissue structure with function. Acquaintance with the course and regulation of the development processes: gametogenesis, fertilization, cleavage, gastrulation, formation of primary and final organs, implantation, which will act as an introduction to the implementation of further stages of studies. The content of the module is indispensable and is connected with several theoretical and clinical subjects in veterinary medicine. |
| Planned didactic forms/actions/methods | Lectures, multimedia presentations, laboratory, microscopic analysis of histological preparations, discussions, cases with slides, the department's website, oral review, test. |

| **Name of the programme module** | **Physical education** |
|---|---|
| Programme module type | Obligatory |
| Year of studies for a given field | I |
| Term for a given field | I |
| ECTS credits together with contact/no contact hours division | 1 contact point |
| A unit providing the course | Physical Education and Sports Study |
| Module objective | The objective of the module is to acquaint students with methods, means and forms of organisation used in the classes of physical education with the purpose of developing efficiency and physical fitness, as well as health-improving habits |
| Educational results. | Knowledge: Basic knowledge of the health-improving significance of physical activity, hygiene and health-improving lifestyle. Knowledge of basic general physical exercises and the rules of team sports. Awareness of the cause and effect links between systematic physical activity, health and physical fitness |
| | Skills: Recreational motor skills which make various life situations easier. The ability to design and organise health–improving activities that also develop physical fitness (selection of organizational forms, exercises, methods and means). The ability to evaluate one's own physical fitness |
| | Social competence: Awareness of the responsibility for one's own health and keeping fit. The ability to cooperate and work in a group assuming various roles. Understanding the importance of lifelong learning, the ability to inspire and organise learning processes for others in terms of motor skills |
| Content of the programme module | The exercises involve: improving technical and tactical elements of selected team games both formally and recreationally: basketball – passes and catches, dribbling, shots from a spot and lay-ups, man-to-man marking, perfecting the abovementioned elements in small games and a simplified game. volleyball – hitting and bumping, underhand and overhand serve, setting and hitting from a basic stance, setting for the middle hitter and hitting, perfecting the abovementioned elements in small games and a simplified game. Exercises that strengthen respective muscle groups in the gym, rules and methods of practice. Exercises with accompanying music that improve motor coordination, rhythmicity of movements and strengthen muscles that keep body posture, with the use of balls, steppers, dumbbells and body weights – teaching basic steps for aerobics classes. Exercises that shape the physical performance of the body with the use of aerobic equipment (stationary bicycles, treadmills, rowing machines) – methods of keeping fit through aerobic and anaerobic exercises |
| Planned didactic forms/actions/methods | – practical classes in the form of exercises<br>– conversations that promote physical activity and the principles of a healthy lifestyle |

| **Name of the programme** | **Animal Anatomy 1** |
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| Programme module type | Obligatory |
| Year of studies for a given field | I |
| Term for a given field | I |
| ECTS credits together with contact/no contact hours division | 6 (3.7/2.3) |
| A unit providing the course | Department of Anatomy and Histology of Animals |
| Module objective | Acquisition of abilities and knowledge of the anatomy of domestic animals (horses, cows, sheep, pigs, dogs, cats, birds) as well as functional interrelations between respective organs and systems in an animal body. |
| Educational results | Knowledge: Detailed knowledge of body structures in domestic animals. Knowledge of the position, structure and basic functions of respective organs in domestic animals. Knowledge of and ability to describe the differences in the structure of organs and systems in different species of domestic animals |
| | Skills: The ability to seek, comprehend, analyse and implement necessary information from various literature sources. The ability of accurate verbal communication with different entities. The ability to put into practice the knowledge of anatomy of domestic animals |
| | Social competence: Understanding the importance of lifelong learning. The ability to cooperate and work in a group assuming various roles. The ability to popularise basic knowledge of animal anatomy among friends and acquaintances. Awareness of the need for targeted further self-improvement |
| Content of the programme module | Acquisition of detailed knowledge of animal anatomy: acquisition of macroscopic anatomy of respective systems in domestic animals (skeletal, muscular, nervous, circulatory). Identification of animal species based on characteristic anatomy of organs and structures: the ability to use anatomical veterinary terminology in Polish, Latin, Greek, in regards to clinical needs. |
| Planned didactic forms/actions/methods | Lectures, multimedia presentations, slides, transparencies, information boards, museum exhibits. Dissection classes - the structure of the skeletal system, preparation of muscles |

| **Name of the programme module** | **Biophysics** |
|---|---|
| Programme module type | Obligatory |
| Year of studies for a given field | I |
| Term for a given field | I |
| ECTS credits together with contact/no contact hours division | 2 (1.18 /0.82) |
| A unit providing the course | Department of Physics, Division of Engineering and Manufacturing |
| Module objective | The aim of the course is to acquaint students with basic laws that govern the macro- and micro-world, as well as the testing methods in biophysics, with a particular consideration of the role of experiment and theory in its development; to facilitate the understanding of biophysical processes and phenomena and relating them to live organisms. |
| Educational results | Knowledge: A general knowledge of biophysics which covers the information theory, thermodynamics, mechanics and the elements of biomechanics, transport phenomena (matter, energy, charge and momentum) basics of acoustics, optics, elements of nuclear physics and radiation, as well as modelling of physical and biophysical phenomena. Students gain sufficient knowledge to identify and comprehend biophysical phenomena applied in the function of selected testing equipment |
| | Skills: Students gain the ability to define basic physical quantities and interpret the measurements taken. Students acquire the ability to use basic measuring equipment. Students acquire the ability to obtain information from literature, databases and other sources |
| | Social competence: Students gain the ability to cooperate and work in a group |
| Content of the programme module | An application of physical and physicochemical laws for living systems. Issues connected with basic phenomena and biological processes, which take place in nature with a particular consideration of the processes, that takes place in live organisms together with their description in the language of physics. Interconnection of biophysics with other sciences, such as biochemistry or physiology. Phenomena which cover the following selected areas of biophysics: elements of mechanics and biomechanics, phenomenological thermodynamics, transport phenomena (matter, energy, charge and momentum), elements of acoustics, elements of wave and geometrical optics, elements of nuclear physics and radiation. |
| Planned didactic forms/actions/methods | Lectures; Laboratory classes and tutorials; Reports from performed experiments |

| **Name of the programme module** | **Foreign Language – French B2, English B2, German B2, Russian B2** |
|---|---|
| Language of instruction | French, English, German, Russian |
| Programme module type | Obligatory |
| Year of studies for a given field | I and II |
| Term for a given field | I, II, III, and IV |
| ECTS credits together with contact/no contact hours division | 2 (1.3/0.7), 2 (1.3/0.7), 2 (1.3/0.7), 2 (1.3/0.7) |
| A unit providing the course | Department of Foreign Languages |
| Module objective | Increasing linguistic competence in terms of general and specialist vocabulary. |

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| | Developing skills for effective communication in a professional milieu.<br>Transferring knowledge that is indispensable for using advanced grammar structures and techniques of working with a source text in a foreign language. |
| Effects of education | Knowledge: Advanced command of general vocabulary and basic command of specialist vocabulary related to the field of study. Knowledge of making compositions in writing, formal and informal, as well as forming oral responses |
| | Skills: The ability to use effective communication in a professional milieu and everyday situations. The ability to discuss, report and interpret events from everyday life. The ability to read with comprehension and analyse simple specialist text representing a given scientific field. The ability to formulate written compositions of texts regarding private and business matters. |
| | Social competence: Understanding the importance of lifelong learning |
| Content of the programme module | The classes run within the module framework include the extension or the introduction of general vocabulary on self-presentation, inter-personal relationship, ways of spending free time, pastimes, travelling, health and healthy lifestyle, environment, living in a community, modern technologies and work. The module also includes the introduction of advanced grammatical and lexical structures in order for the student to acquire the skill of proper communication. During the tutorials students are acquainted with specialist vocabulary from a given field of science and are also prepared for selective specialist reading and self-studying of source texts. The module is also aimed at acquainting students with the culture of a given language area. |
| Planned didactic forms/actions/methods | The eclectic method: lectures, discussions, presentations, conversations, grammar-translation methods (specialist text), communicative and direct methods with particular consideration of communication. |

**Second semester modules**

| **Name of the programme module** | **Environmental Protection** |
|---|---|
| Programme module type | Obligatory |
| Year of the study programme | I |
| Term for a given field | II |
| ECTS credits together with contact/no contact hours division | 2 (1/1) |
| Academic unit offering the module | Department of Toxicology and Environmental Protection |
| Module objective | To make students acquire knowledge and skills related to the issue of environmental protection |
| Educational results | Knowledge: extended knowledge of ecology and environment protection. Knowledge and description of biological effects of environmental pollution on the health of people and animals. Extended knowledge of processes occurring in ecosystems, factors disturbing their functions and methods of limiting the negative impact of chemicals on the environment, health of people and animals |
| | Skills: defining negative environmental and biological effects of the application of natural and synthetic chemicals in agriculture, industry and municipal service management and methods used to minimise the negative effects of environmental pollution. Description and assessment of factors related to the environmental anthropogenisation affecting production of animals, the quality of animal products and impact of animal production on public health and the natural environment U3. Research, analyses and use of necessary information derived from various sources to prepare and present a research paper. |
| | Social skills: the awareness of social, professional and ethical responsibility for the production of safe foodstuffs as well as shaping and condition of the environment. |
| Contents of the education module | Terminology related to ecology, environmental protection and nature conservation. International environmental protection and nature conservation conventions and organisations. Legal regulations related to nature conservation in Poland. The environmental protection programme, natural environment monitoring, veterinary monitoring. Processes occurring in ecosystems and factors disturbing their functions. Environmental protection – pollution and protection of air. Pollution and protection of water. Waste water treatment methods. Causes of soil degradation, their protection and reclamation. Protection of the environment against waste. Environmental noise and vibrations. Transport and communication as a source of hazardous substances in the air. Natural disasters and their influence on environmental degradation. The hazard of radiation. The role of the veterinarian in environmental protection. Environment pollution and the health of people and animals – food safety. |
| Planned didactic forms/activities/methods | Lectures; Auditory and laboratory classes (multimedia presentations, quality tests); Achievement tests; Discussions |

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| Name of the programme module | Histology and embryology 2 |
| Programme module type | Obligatory |
| Year of studies for a given field | I |
| Term for a given field | II |
| ECTS credits together with contact/no contact hours division | 4 (2.5/ 1.5) |
| A unit providing the course | Department of Anatomy and Histology of Animals |
| Module objective | Acquainting students with detailed histology: the microscopic structure and ultrastructure of organs in respective systems, their functions and differences across species. Acquainting students with |

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| | veterinary embryology: structure and classification od mammalian placentas. |
| Educational results | Knowledge: Knowledge of the microscopic structure of organs in respective animal systems; knowledge of the structure of mammalian placentas. Knowledge of how the tissue structure and its function are linked together; knowledge of the structure and functions of placentas. Understanding processes that take place in respective tissues, organs and placentas |
| | Skills: The ability to independently recognise the microscopic structure of organs. The ability to analyse the structure of mammalian placentas. The ability to find a link between the structure and function of tissues, organs and placentas |
| | Social competence: the ability to share the knowledge of detailed histology and veterinary embryology in an academic milieu and outside it (among other social groups). The ability to cooperate in a group and assume different roles; understanding the importance of lifelong learning and self-improvement |
| Content of the programme module | Histological structure of the integumentary system, organs in the circulatory, lymphatic, digestive, respiratory, excretory, reproductive systems, endocrine glands, which will enable acquisition of basic knowledge of detailed animal histology. Connection of tissue and organ structure with their functions. Acquaintance with the course of development of mammalian placentas and their functions will act as an introduction to the implementation of further stages of studies. The content of the module is indispensable and is connected with several theoretical and clinical subjects in veterinary medicine. |
| Planned didactic forms/actions/methods | Lectures, multimedia presentations, laboratory, microscopic analysis of histological preparations, discussions, cases with slides, the department's website, oral reviews, tests. |

| **Name of the programme module** | **General and Veterinary Genetics** |
|---|---|
| Programme module type | Obligatory |
| Year of the study programme | I |
| Semester of the study programme | II |
| ECTS credits together with contact/no contact hours division | 2 (1.44 / 0.56) |
| A unit providing the course | The Department of Biological Bases for Livestock Production |
| Module objective | The aim of the module is to familiarise students with the basics of general and molecular genetics from material and molecular basics of heredity to elements of genetic engineering |
| Educational results | Knowledge: knowledge of basic concept categories and genetic terminology<br>Knowledge and understanding of basic mechanisms and genetic processes of inheriting the structure of chromosomes and genes, processes of replication, transcription and translation, principles of encoding genetic information, regulation of gene expression, gene and chromosome mutation. |
| | Skills: the ability to think logically, understand literature on genetics in Polish and interpret genetic data |
| | Social competence: Students accurately identify and solves genetic problems, have the ability to self-educate and the awareness of the developments in genetic disciplines |
| Content of the programme module – a concise description (about 100 words) | Knowledge: written test.<br>Skills: solving tasks independently<br>Social competence: participation in a discussion |
| Contents of the education module | Introduction to genetics. Chronology of important events., Material basics for heredity. Cytogenetics, cell division, gametogenesis. Basics of molecular genetics. The genome structure of prokaryotic and eukaryotic organisms. Mutagenesis, molecular mechanisms of mutation.<br>Point mutation, chromosomal aberration, genomic mutation. Diseases and inherited abnormalities, basics of cancerogenesis. Genetic basics of immunity and resistance.<br>Genetics of development. Non-nuclear genetics, parental influence. Gene expression and regulation. Inheriting qualitative and quantitative traits. Human genetics – basics. The importance of genetics in medicine, agriculture, breeding, basics of transgenics. |
| Planned didactic forms/activities/methods | Lectures, laboratory classes, recitation classes, solving tasks, discussions |

| **Name of the programme module** | **Agronomy** |
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| Programme module type | Obligatory |
| Year of studies for a given field | I |
| Term for a given field | II |
| ECTS credits together with contact/no contact hours division | 1 (0.8/0.2) |
| A unit providing the course | Department of Herbology and Plant Cultivation Techniques |
| Module objective | Acquisition of knowledge of natural and agrotechnical factors that shape plant yielding, agricultural systems, characteristics and significance of arable crop groups, collected crops and their use. |
| Educational results | Knowledge: Knowledge of natural and agrotechnical requirements of arable crops. Knowledge of basic plant production systems and principles of modern agricultural production. Knowledge of respective arable crop groups, yielded harvest and the ways of developing it. |
| | Skills: Ability to plan the cultivation of the most important crops. |
| | Social competence: Awareness of how agrotechnical factors influence the quality of crops and the condition of the environment. |

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| Content of the programme module | It encompasses the knowledge of plant cultivation, the role of natural (soil, climate, terrain relief, biocoenose) and agrotechnical factors (sowing, variety, fertilization, protection, harvest) in shaping the harvest, agricultural systems (conventional, ecological, sustainable) profile, usefulness and development of produce. |
| Planned didactic forms/actions/methods | Lectures, multimedia presentations, discussions. |

| **Name of the programme module** | **Biostatistics and methods of documentation** |
|---|---|
| Programme module type | Obligatory |
| Year of studies for a given field | I |
| Term for a given field | II |
| ECTS credits together with contact/no contact hours division | 2 (1/1) |
| A unit providing the course | Department of Applied Mathematics and Computer Science |
| Module objective | Acquainting students with basic concepts of the theory of probability and mathematical statistics; the ability to use descriptive statistics for elementary analysis of experimental data; knowledge of statistical inference – estimation, hypothesis testing; knowledge of and the ability to use computer software for statistical data analysis (e.g. Excel). |
| Educational results | Knowledge: Knowledge of basic concepts of the theory of probability and mathematical statistics (probability, random variable, distribution, distribution function, density, population and sample, estimator, confidence interval, test). Knowledge of basic distribution and estimator types used in mathematical statistics and the ability to describe their characteristics. The ability to demonstrate model confidence intervals and tests |
| | Skills: The ability to apply a preliminary (descriptive) experimental data analysis. The ability to adapt model examples of statistical inference in given situations. The ability to use computer software (e.g. Excel) in statistical analysis and inference |
| | Social competence: The need for improvement of one's knowledge and skills in the time of rapid technological growth. Awareness of the need for mathematical modelling of phenomena for the purpose of scientific cognition. |
| Content of the programme module | Descriptive statistics (construction of stem-and-leaf displays, determining basic characteristics: measures of position, dispersion, asymmetry and concentration). Elements of the theory of probability (probability, random variable, distribution function, density, discrete and continuous probability distributions – examples: binominal distribution, Poisson distribution, normal distribution, Student's t-distribution, Chi-square). Point and interval estimation (construction of confidence intervals for a mean, mean difference, variance, variance ratio). Parametric tests (mean and variance hypothesis testing). Non-parametric tests (testing the characteristics independence and distribution conformity hypotheses) |
| Planned didactic forms/actions/methods | Lectures, computer laboratory, tutorials, consultations |

| **Name of the programme module** | **Protection of Intellectual Property** |
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| Programme module type | Obligatory |
| Year of studies for a given field | I |
| Term for a given field | II |
| ECTS credits together with contact/no contact hours division | 1 (0.5/0.5) |
| A unit providing the course | Division of Veterinary Microbiology |
| Module objective | Acquainting students with the knowledge of legal protection of different forms of industrial and intellectual property, in particular knowledge as an intellectual property, copyright, protection of inventions, trademarks, industrial and utility designs, geographical indications, acquisition of patents, as well as with the act on fighting unfair competition and the act on database protection. |
| Educational results | Knowledge: General knowledge of the principles of legal protection of various forms of intellectual and industrial property. The ability to embrace legal provisions and the knowledge of applicable law with the use of standards. The ability to obtain, interpret and use the principles of intellectual property protection and the right to industrial property protection. |
| | Skills: The ability to properly prepare documents and opinions so that they meet the needs of courts in regards to the patent law and inventions. The ability of fluent application of PIP legal acts on communication with appropriate bodies of government administration. The ability to use the information gathered in information systems without breaching the law. |
| | Social competence: The ability to cooperate and work in a group. Awareness of the significance of intellectual property protection in a given social order. Awareness of the need to permanently broaden knowledge about intellectual protection, ideas and the acquisition of new patents. |
| Content of the programme module | Protection of Intellectual Property: 1. Introduction to the Protection of Intellectual Property Legal bases: international and domestic. Historical overview of the PIP development in the world. 2. The concept of individual property, its formation and development. 3. Legal protection of works: copyright and other. 4. The object of copyright. Joint authorship and other forms of authorship. Moral rights and property rights. 5. The industrial property right. Idea, invention, innovation, trademarks. Utility and industrial design. 6. The role of intellectual property in the activities of a higher education institution. 7. The role of the patent attorney in legal protection of inventions and trademarks. 8. Patent protection in |

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| | territorial terms. The domestic, European and international procedure of granting patents. Consequences of patent law breach. 9. Other applicable legal acts, inter alia, the act on fighting unfair competition and the act on database protection. |
| Planned didactic forms/actions/methods | Lectures, multimedia, discussions |

| **Name of the programme module** | **History of veterinary medicine and deontology** |
|---|---|
| Programme module type | Obligatory |
| Year of the study programme | I |
| Semester of the study programme | II |
| ECTS credits together with contact/no contact hours division | 1.0 (0 .7/0.3) |
| A unit providing the course | Department and Clinic of Internal Diseases of Animals, Sub-Department of Internal Diseases of Farm Animals and Horses |
| Module objective | The aim of the module is to provide students with the grounds for: understanding professional ethics, linking historical facts that are related to the profession of a veterinary doctor, learning about the relation between the doctor, the patient, and the patient's owner, acquiring the skills of ethical medical thinking, using real terms correctly, terminology and the appropriate interpretation of basic legal documents that are related to the profession. |
| Educational results | Knowledge: Students show knowledge of the history, terminology and basic legal documents regarding the profession; Understand the principles of deontology and are familiar with the principles of professional ethics |
| | Skills: Knowledge of the basic laws and mechanisms underpinning history and the ability to notice causal links between phenomena and combining them together into good veterinary practice |
| | Social competencies: Observation of the principles of professional ethic; Developing the habit of lifelong knowledge and skill building; Posses the skill of effective interpersonal communication and is able to take action under uncertain and stressful conditions; is able to easily establish the working relationship with the animal's owner and colleagues from the medical team; the capability of effective and efficient management and reasonable task-planning |
| Content of the programme module | The lecture programme of the module includes: Ancient veterinary medicine. The history of veterinary medicine in the Polish territory. The history of the control of infectious animal diseases. Veterinary procedures and instruments. Scientific research and veterinary literature. The history of veterinary education. Research institutes and veterinary medicines across centuries. Organisation of veterinary health care in Poland. Professional and scientific veterinary organisations. Military veterinary medicine. Veterinary and sanitary supervision of slaughter, marketing and the hygiene of animal products. Veterinary ethics and deontology. Veterinary self-government and corporate organisations. Veterinary signs and symbols |
| Planned didactic forms/activities/methods | Multimedia-based interactive lectures, field classes, self-learning. The assessment made by the lecturer and listeners is a measure of the critical approach of the author of the presentation to the literature regarding the subject. Consultations |

| **Name of the programme module** | **Bioethics** |
|---|---|
| Programme module type | Obligatory |
| Year of studies for a given field | I |
| Term of studies for a given field | II |
| ECTS credits together with contact/no contact hours division | 2 (1.32 / 0.28 ) |
| A unit providing the course/ Module objective | The objective of the module: Acquisition of basic philosophical, ethical and bioethical concepts Familiarising students with basic bioethical trends. Demonstrating the relationship between ethical and moral, legal and administrative spheres. Studies of the human conscience as an individual interpretation of natural law. Shaping responsibility for oneself and another human being, as well as any other living specimen both in individual and collective lives. |
| Educational results | Knowledge: After the completion of the course the student:<br>Knows how to describe individual eras that went down in the history of the development of philosophical, ethical and bioethical trends that became a foundation of relevant relations with the surrounding reality,<br>Knows the most important ethical and moral schools, as well as a new bioethical perception of the reality of the world of fauna |
| | Skills: The student knows how to interpret different moral and ethical proposals that the modern world has to offer. Knows how to communicate with other entities using the conceptual framework that is typical for ethical and moral sciences, as a complementation of their professional language. |

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| | Social competence: The student is able to hold a conversation on topics that may appear hard or controversial, which concern proper interpersonal relations between the human being and the world of animals, as well as the rights and obligations that arise from it. Is able to discern the element of medical compassion in these relations. It concerns both the lifestyle and a proper way of going through the university period.<br>Is effective with the creation of the professional community on the foundation of respect for human dignity and freedom,<br>Is effectively involved not only in the completion of the academic programme at the University of Life Sciences in Lublin, but also in social activities. |
| Content of the programme module – a concise description (about 100 words). | Lectures: The content relates to philosophical and ethical sciences, the law, consciences and lifestyle, basics of the profession and possibly medical vocation. For this reason the issues covered include definitions and terminology used by given, contemporary, ethical trends. The course offers an in-depth analysis of ethical personalism which draws attention to the development of the following attitudes: responsibility for another person, responsibility both for the type and effects of human work, i.e. for the effects of human activity in relation to the society and exerting influence on others by setting an example of one's own good life. |
| Planned didactic forms/activities/methods | Lectures, discussion, short papers prepared by student groups |

| **Name of the programme module** | **Physical education** |
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| Programme module type | Obligatory |
| Year of studies for a given field | I |
| Term of studies for a given field | II |
| ECTS credits together with contact/no contact hours division | 1 contact point |
| A unit providing the course | Physical Education and Sports Study |
| Module objective | The objective of the module is to acquaint students with methods, means and forms of organisation used in the classes of physical education with the purpose of developing efficiency and physical fitness, as well as health-improving habits |
| Educational results | Knowledge: Basic knowledge of the health-improving significance of physical activity, hygiene and health-improving lifestyle. Knowledge of basic general physical exercises and rules of team sports. Awareness of cause and effect links between systematic physical activity, health and physical fitness. |
| | Skills: Recreational motor skills which make various life situations easier. The ability to design and organise health–improving activities that also develop physical fitness (selection of organizational forms, exercises, methods and means). The ability to evaluate one's own physical fitness. |
| | Social competence: Awareness of the responsibility for one's own health and fitness. The ability to cooperate and work in a group assuming various roles. Understanding the importance of lifelong learning, the ability to inspire and organise learning processes for others in terms of motor skills. |
| Content of the programme module | The exercises involve: improving technical and tactical elements of selected team games both formally and recreationally: basketball – improving passing, catching, dribbling and shooting on target in game elements and the proper game, practising man-to-man marking and zone marking; recreational school game and proper volleyball game – improvement of passing, digging, serving, setting and hitting, as well as blocking and spotting. Strengthening exercises in the gym, methods of selecting the load – personal training, circular training. Exercises with accompanying music that improve motor coordination and strengthen muscles, with the use of balls, steppers, dumbbells and body weights in choreographies. Exercises that shape the physical performance of the body with the use of aerobic equipment (stationary bicycles, treadmills, rowing machines) – methods of keeping fit through aerobic and anaerobic exercises |
| Planned didactic forms/actions/methods | practical classes in the form of exercises; conversations that promote physical activity and the principles of a healthy lifestyle |

| Name of the programme module | Animal anatomy 2 |
|---|---|
| Programme module type | Obligatory |
| Year of studies for a given field | I |
| Term for a given field | II |
| ECTS credits together with contact/no contact hours division | 6 (3.7/2.3) |
| A unit providing the course | Department of Anatomy and Histology of Animals |
| Module objective | Acquisition of abilities and knowledge of the anatomy of domestic animals (horses, cows, sheep, pigs, dogs, cats, birds) as well as functional interrelations between respective organs and systems in animal bodies. |
| Educational results | Knowledge: Detailed knowledge of body structures in domestic animals. Knowledge of the position, structure and basic functions of respective organs in domestic animals. Knowledge of and ability to describe differences in the structure of organs and systems in different species of domestic animals |
| | Skills: The ability to seek, comprehend, analyse and implement necessary information from various literature sources. The ability of accurate verbal communication with different entities. The ability to put into practice the knowledge of anatomy of domestic animals. |

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| | Social competence: Understanding the importance of lifelong learning. The ability to cooperate and work in a group assuming various roles. The ability to popularise basic knowledge of animal anatomy among friends and acquaintances. Awareness of the need for targeted further self-improvement |
| Content of the programme module | Acquisition of detailed knowledge of animal anatomy: acquisition of macroscopic anatomy of respective systems in domestic animals (muscular, nervous, circulatory). The identification of animal species based on the characteristic anatomy of organs and structures: the ability to use anatomical veterinary terminology in Polish, Latin, Greek, in regards to clinical needs. |
| Planned didactic forms/actions/methods | Lectures, multimedia presentations, slides, transparencies, information board, museum exhibits. Dissection classes - preparation of animal limb and head muscles |

| **Name of the programme module** | **Biochemistry** |
|---|---|
| Programme module type | Obligatory |
| Year of studies for a given field | I and II |
| Term for a given field | II and III |
| ECTS credits together with contact/no contact hours division | 5.0 (3.0/2.0), 6.0 (3.2/2.8) |
| A unit providing the course | Department of Biochemistry |
| Module objective | The aim of teaching biochemistry is to acquaint students with biochemical transformations along with their regulation, which take place in cells and tissues, and are indispensable for the proper functioning of the entire organism, as well as some laboratory techniques used in a biochemical laboratory. The acquaintance with these transformations is necessary for an integration of theoretical and practical knowledge and the understanding of pathological processes at the cellular level and the interpretation of laboratory test results, which are all acquired during clinical classes.2 |
| Educational results | Knowledge: The ability to present metabolic transformation of macromolecules and their regulation at a cellular level. The ability to describe the tissue specificity of metabolism. The ability to apply the knowledge of analytical methods |
| | Skills: The ability to recognise interrelations between biochemical transformations and clinical symptoms of metabolic diseases. The ability to determine selected biochemical parameters |
| | Social competence: Awareness of the need for further education and self-improvement. Openness to active participation in a group |
| Content of the programme module | Lectures: Amino acids, peptides, proteins – structure, properties, biological significance. Enzymes – structure, divisions, specificity, functioning mechanism, enzyme kinetics, types of inhibition. Enzymes in laboratory diagnostics. Co-enzymes and prosthetic groups – structure, functions, biological significance. Nucleic acids – structure, properties, biological significance. Biochemical mechanisms of transcription and translation. Amino acids metabolism, neutralisation of ammonium ions. Metabolism of carbohydrates and lipids – significance, energy, regulation. Metabolism integration, selected issues referring to detoxification as well as tissue and body fluid specificity. Tutorials: qualitative and quantitative determination of amino acids, proteins, sugars and other components of body fluids. Kinetics of enzymatic reactions, chromatography, electrophoresis, testing the activity of indicative enzymes and hydrolase in the gastrointestinal tract, evaluation of the biochemical parameters of blood, urine, milk and bile. |
| Planned didactic forms/actions/methods | Laboratory classes, lectures, self-study materials on the unit's website, online materials available upon entering a password (VikiWet, Casus) |

**Third semester modules**

| **Name of the programme module** | **Animal Anatomy 3** |
|---|---|
| Programme module type | Obligatory |
| Year of studies for a given field | II |
| Term for a given field | III |
| ECTS credits together with contact/no contact hours division | 5 (2.8/2.2) |
| A unit providing the course | Department of Anatomy and Histology of Animals |
| Module objective | Acquisition of abilities and knowledge of the anatomy of domestic animals (horses, cows, sheep, pigs, dogs, cats, birds) as well as functional interrelations between respective organs and systems in animal bodies. |
| Educational results | Knowledge: Detailed knowledge of body structures in domestic animals. Knowledge of the position, structure and basic functions of respective organs in domestic animals. Knowledge of and ability to describe differences in the structure of organs and systems in different species of domestic animals |
| | Skills: The ability to seek, comprehend, analyse and implement necessary information from various literature sources. The ability of accurate verbal communication with different entities. The ability to put into practice the knowledge of anatomy of domestic animals |
| | Social competence: Understanding the importance of lifelong learning. The ability to cooperate and work in a group assuming various roles. The ability to popularise basic knowledge of animal anatomy among friends and acquaintances. Awareness of the need for targeted further self-improvement |

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| Content of the programme module | Acquisition of detailed knowledge of animal anatomy: acquisition of macroscopic anatomy of respective systems in domestic animals (nervous, circulatory, respiratory, digestive, excretory, reproductive, endocrine and sensory). Identification of animal species based on characteristic anatomy of organs and structures: the ability to use anatomical veterinary terminology in Polish, Latin, Greek, in regards to clinical needs. The content of the module is indispensable and is connected with several theoretical and clinical subjects in veterinary medicine. |
| Planned didactic forms/actions/methods | Lectures, multimedia presentations, slides, transparencies, information board, museum exhibits. Dissecting exercises, animal preparations. Exenteration of different domestic animal species (dog, pig, sheep, horse). |

| **Name of the programme module** | **Animal Breeding and Husbandry** |
|---|---|
| Programme module type | Obligatory |
| Year of studies for a given field | II |
| Term for a given field | III |
| ECTS credits together with contact/no contact hours division together with contact/no contact hours division | 3 (2/1) |
| A unit providing the course | Department of Breeding and Production Technology of Pigs |
| Module objective | Acquainting students with biological principles of animal production, conditions of husbandry and breeding of basic farm animals (cattle, pigs, horses, sheep, goats, poultry) as well as companion animals |
| Educational results | Knowledge: Extended knowledge of the biology of farm animals and companion animals. Knowledge of the husbandry of livestock together with their species and races, genetic bases for their breeding and improvement. |
| | Skills: The ability to apply basic acquired knowledge when solving problems in the course of future education. The ability to explain the principles of animal husbandry and breeding, selecting animals for matching, reproduction and selection, evaluating the conditions that ensure animal health and welfare. |
| | Social competence: The ability to act autonomously and formulate opinions, the ability to take responsibility for decisions and awareness of their effects, with particular attention to decisions which affect animal and human health. |
| Content of the programme module | The subject pertains to the issues connected with husbandry and breeding of farm animals and companion animals. Introduction of issues that regard reproduction, animal care from birth all throughout their growth and development. Description of races and genetic and environmental factors that form the practical value of animals. Underlining the importance of native breeds in contemporary husbandry and breeding. Discussing the lines of possible use of particular farm animal species. Discussion of basic issues regarding: keeping breeding records, duties connected with husbandry, evaluation of practical and breeding value, animal selection for matching and crossbreeding. Discussion of the systems of animal maintenance and feeding with a particular reference to the welfare of animals and zootechnical prophylaxis. |
| Planned didactic forms/actions/methods | Lectures, laboratory classes, tutorials, discussions, group work, demonstrations, conversations, project methods |

| **Name of the programme module** | **Technology of Animal Production** |
|---|---|
| Programme module type | Obligatory |
| Year of studies for a given field | II |
| Term for a given field | 3 |
| ECTS credits together with contact/no contact hours division | 2 (1.3/0.7) |
| A unit providing the course | Department of Breeding and Production Technology of Pigs |
| Module objective | Acquainting students with the organisation and functioning of farms that specialize in animal production. |
| Educational results | Knowledge: Extended knowledge of farm animal biology that is suited for direct application in animal production. Knowledge of welfare, natural environment protection, principles of by-product utilisation and animal production waste. |
| | Skills: The ability to apply acquired basic knowledge when solving problems in the processes of animal production. The ability to describe and evaluate factors that influence animal production, animal behaviour and the quality of food of animal origin and the influence of animal production on public health and the natural environment. |
| | Social competence: Awareness of the social and professional responsibility for the welfare of animals. |
| Content of the programme module | The course covers issues related to the organization of animal production on a farm. The course encompasses technologies of milk production, livestock, eggs, wool, feathers as well as fur and coat materials. It describes the principles of how specialist livestock farms function and appropriate legal provisions. It describes livestock buildings, rooms and installations used by respective animal species as well as work organization, prophylactic and tending procedures performed in livestock farms. It |

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| | also encompasses the planning of production in a commercial farm together with all the necessary production means. |
| Planned didactic forms/actions/methods | Lectures, laboratory classes, tutorials, discussions, group work, demonstrations, project methods |

| **Name of the programme module** | **Veterinary economics** |
|---|---|
| Programme module type | Obligatory |
| Year of studies for a given field | 2 |
| Term for a given field | 3 |
| ECTS credits together with contact/no contact hours division | 1 (0.7/0.3) |
| A unit providing the course | Department of Economics and Management |
| Module objective | The aim of the module is to acquaint students with the basic knowledge of how the economy and economic operators function, with a particular consideration of the organizations that provide veterinary services. |
| Educational results | Knowledge: Basic knowledge of how the economy and its sectors function; knowledge of market economy and its characteristic features. Knowledge of the basic principles of economic calculation. Understanding the consequences of the chosen solution in given economic and production circumstances |
| | Skills: The ability to determine the criteria and define the growth factors of economy. The ability to describe the results of the performed economic calculation and draw conclusions from its evaluation. The ability to calculate basic economic categories present in the economic activity, |
| | Social competence: The ability to communicate with the external environment as to economic conditions related to professional activities. The ability to think and act in an entrepreneurial fashion. Awareness of the need for further education and self-improvement in regard to professional activities, |
| Content of the programme module | Basic concepts: microeconomics, macroeconomics, economic categories and laws. The market and the factors that shape it, the law of demand, the law of supply, price elasticity of demand, income elasticity of demand. Consumer: the concept of consumption, need, budgetary constraints, income effect and substitution effects. Factors that condition the growth of service businesses. Decision processes in entities that provide veterinary services. The entity – resources and assets, the structure and sources of financing. Income and costs of veterinary services. Decision making accounting of costs. Basic methods of economic analysis: unit and total cost calculations. Expenses in veterinary services. Economics versus protection of animal health. Disease in economic terms: the impact of diseases on the economic results of a farm, prevention of diseases from an economic point of view. |
| Summary of ECTS credits | Lectures; Consulting; Recommended reading, preparation for course completion. |

| **Name of the programme module** | **Animal nutrition and feeding stuffs** |
|---|---|
| Programme module type | Obligatory |
| Year of studies for a given field | II |
| Term for a given field | III |
| ECTS credits together with contact/no contact hours division | 4 (2.7/1.3) |
| A unit providing the course | Institute of Animal Nutrition and Bromatology |
| Module objective | Acquainting students with nutrition physiology, the role of nutrients in animal nutrition, nutritional norms and recommendations, as well as nutritional value of animal nutrition, along with doses and mixtures; learning the ability to make decisions in regards to proper nutrition, as well as a critical evaluation of animal nutrition. |
| Educational results | Knowledge: Knowledge of the digestion physiology and metabolism in animals, as well as their impact on animal systems. Knowledge of the metabolism and energy transformations in the animal's body, as well as the nutritional value of animal nutrition, the role of feed additives and adverse effects of anti-nutritional factors – ANF. Understanding norm recommendations in regards to respective animal species with the consideration of nutrients. |
| | Skills: The ability to make calculations and evaluate the nutritional value of feed mixtures or a feed ration. The ability to evaluate the manner of nutrition in regards to nutritional norms and recommendations, as well as determine the cause of metabolic diseases. |
| | Social competence: Awareness of the influence of nutrition on production effects and animal health, as well as the ability to share knowledge outside the academia (on farms, among veterinary doctors and animal producers). Awareness of the need to permanently broaden the knowledge of how different nutritional factors interact with the function of the animal organism. |
| Content of the programme module | Composition and transformations of basic nutrients. Usability in animal feeding. Vitamins, mineral components; division, role in metabolism, physiological and nutritional needs.<br>Digestibility of feed nutrients. Objectives of defining digestibility, methods. Metabolism and energy transformation. The evaluation of feed systems intended for monogastric animals and ruminants. The influence of feed components on the quality of food of animal origin. Concentrated feeds, anti-nutritious substances in feeds. Feed additives, legal framework of the prohibition on the use of some additives. Components of a normalized dose, systems and technologies of animal nutrition. Nutrition |

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| | models of farm animals and companion animals. Nutrition models during reproduction, pregnancy anabolism. Nutrition patterns during fattening. Nutrition principles for ruminants (cattle, sheep, goats), horses, pigs, poultry, dogs and cats. |
| Planned didactic forms/actions/methods | Lectures, multimedia presentations, films, virtual laboratory, performance of in vivo circulatory and spirometric tests, biochemical determinations and haematological analyses, discussions, laboratory class reports. |

| **Name of the programme module** | **Animal physiology** |
|---|---|
| Year of studies for a given field | II |
| Programme module type | Obligatory |
| Term for a given field | III and IV |
| ECTS credits together with contact/no contact hours division | 5 (3.6/1.4), 6 (3.1/2.9) |
| A unit providing the course | Department of Animal Physiology |
| Module objective | Acquainting students with physiological mechanisms of the function of animal bodies and the regulation of these mechanisms, with a particular reference to the processes responsible for maintaining homeostasis of the body. |
| Educational results | Knowledge: The ability to describe life processes taking place in an animal's body at the cellular, organ and systemic level. The ability to describe the activities, functions and interaction of systems, organs and tissues. Understanding basic mechanisms of physiological regulation of cellular, tissue and organ activity and their mutual integration on the level of the organism |
| | Skills: The ability to take measurements, evaluate and interpret basic physiological parameters of the body as health indicators. The ability to define the physiological state as an adaptation of ever-changing environmental factors. The ability to use basic principles of physiology in specialist learning. |
| | Social competence: Awareness of the importance of the body's physiological state for its health, animal production and the quality of food of animal origin. Awareness of the need to permanently broaden the knowledge of how different factors interact with the functions of an animal organism. |
| Content of the programme module | Electrophysiological principles of excitability. Functional organisation of the nervous system. Physiology of skeletal and smooth muscles. Physiology of blood – homeostasis, haematopoiesis, defence mechanisms, haemostasis, blood groups. Basic hematologic parameters. Physiology of the gastrointestinal tract – regulation of food intake, digestive processes, absorption, motor activity. Specificity of the gastrointestinal tract activity in ruminants. Physiology of bone tissue.<br>Functional characteristics of the cardiac muscle. Hemodynamics of circulation. Neural and hormonal regulation of the circulatory system. Basic parameters of the functional status of the circulatory system. Respiratory mechanics. Spirometry. Central and peripheral respiratory regulation. Physiology of sensory organs. Biological rhythms. Instincts, drives, motivational behaviour, learning. Physiology of the reproductive system and the mammary gland. Physiology of the excretory system. Regulation of the water-mineral balance. Autonomous and behavioural thermoregulation mechanisms. Mechanisms that regulate metabolism and energy transformation. Physiological significance of hormones. |
| Planned didactic forms/actions/methods | Lectures, multimedia presentations, films, virtual laboratory, performance of in vivo circulatory and spirometric tests, biochemical determinations and hematologic analyses, discussions, laboratory class reports. |

**Fourth semester**

| **Name of the programme module** | **Topographical Anatomy** |
|---|---|
| Programme module type | Obligatory |
| Year of studies for a given field | II |
| Term for a given field | IV |
| ECTS credits together with contact/no contact hours division | 3 (2/1) |
| A unit providing the course | Department of Anatomy and Histology of Animals |
| Module objective | The aim of the module is to acquaint students with the knowledge that will enable them to aptly identify access (puncture) points to respective organs or nerves; competently identify the position of organs in relation to the skeleton or identify surface projections of an organ; carefully plan surgical access to body structures. After the course in topographical anatomy students are able to recognize organ images obtained with different imaging techniques. |
| Educational results | Knowledge: Students are acquainted with the topography of domestic animals; know the location of topographic points, location of internal organs and the clinical significance of respective body areas and animal organs |
| | Skills: The ability to identify access (puncture) points to respective organs or nerves, position of organs in relation to the skeleton, surface projection of an organ; the ability to carefully plan surgical access to body structures. Knowledge of basic principles of clinical examination and the ability to recognize organ images obtained with different imaging techniques. |
| | Social competence: Awareness of how important it is for a veterinarian doctor to be acquainted with the issues of topographic anatomy, as well as for further clinical studies. The ability to bear responsibility for the decisions made in regard to both people and animals |

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| Content of the programme module | Topography of internal body areas in large and small animals. Topography of head and neck organs, withers, the identification of nerve positions, blood vessels, lymph nodes, salivary glands. Defining boundaries of respective body areas. Topography of the chest cavity and its organs in small and large animals. Exercises on live animals, presentation of the areas and organs that have been discussed. Topography and division of the abdominal cavity in domestic animals. The pelvic cavity and its topography and division. The position of internal organs in dead animals and a demonstration. Exercises on live animals, which cover the topography of the abdominal and pelvic cavities. Topography of pectoral and pelvic limbs in large and small animals. Topography of the nervous system, hooves, pads and mammary gland in large and small animals. Exercises on live animals with a particular consideration of small animals (dog, cat). |
| Planned didactic forms/actions/methods | Lectures, multimedia presentations, dissection classes, demonstrations on dead animals, exercises on live animals, discussions. |

| **Name of the programme module** | **Immunology** |
|---|---|
| Programme module type | Obligatory |
| Year of studies for a given field | II |
| Term for a given field | IV |
| ECTS credits together with contact/no contact hours division | 3 (2/1) |
| A unit providing the course | Institute of Biological Bases of Animal Diseases, Department of Veterinary Prevention and Avian Diseases |
| Module objective | Acquainting students with the structure of the immune system and the mechanisms of immunological reactions, the possibilities of increasing immunity, (vaccinations, serotherapy, non-specific immunotherapy, hyposensitization) as well as laboratory methods used in immunological research. |
| Educational results | Knowledge: Comprehension of basic immunological phenomena and processes. Broad knowledge of basic concept categories and terminology used in immunology, as well as concepts directly referencing to the practical implementation of knowledge of immunology. Understanding the relationship between the achievements of immunology, and the possibility of their implementation in treating human and animal diseases |
| | Skills: The ability to seek, comprehend, analyse and implement necessary information on immunology from various sources. The ability to isolate leukocytes from peripheral blood of animals, counting cells and marking their lifespan, as well as the ability to perform basic immunodiagnostic tests. The ability to draw conclusions from performed tests |
| | Social competence: The ability to cooperate and work in a group assuming various roles. The need for a constant updating of the knowledge of veterinary immunology |
| Content of the programme module | Structure and function of the immune system; antigens – kinds, processing, presentation, main tissue compliance system and its significance; kinds and functions of cells that participate in the immune response; maturing and circulation of lymphocytes; lymphoid tissue connected with mucous membranes; cytokines and the regulation of the immune response; immunological tolerance; immunological relations between the mother and the foetus; preventive vaccinations as a way of modulating immunity; kinds and functions of cells that participate in the immune response; mechanisms of specific and non-specific immunity; anti-infectious immunity, isolation of cells that are immunologically competent from peripheral blood, counting and marking their lifespan, measuring phagocyte activity; flow cytometry in immunological tests; diagnostic tests based on the antigen/antibody reaction; reactions of hypersensitivity; the autoimmunity phenomena. |
| Planned didactic forms/actions/methods | Lectures, laboratory tests including measuring the performance, laboratory class reports, demonstrations, discussions, brainstorming |

| **Name of the programme module** | **Ethology, welfare and animal protection.** |
|---|---|
| Programme module type | Obligatory |
| Year of studies for a given field | II |
| Term for a given field | IV |
| ECTS credits together with contact/no contact hours division | 2 (1/1) |
| A unit providing the course | Institute of Biological Basis of Animal Diseases Division of Veterinary Prevention |
| Module objective | The aim of the module is to acquire knowledge of correct and incorrect behaviour of farm animals that accompany people, and free-living animals, which may result from insufficient welfare. Acquisition of the ability to evaluate basic welfare parameters and methods of controlling welfare pursuant to applicable domestic and EU legislation. |
| Educational results | Knowledge: General knowledge of how the environment affects animal behaviour, how animals function in their natural habitat and husbandry environment, adverse effects of the husbandry environment on reactions induced in animal systems, as well as their health and productivity. Basic knowledge of applicable domestic and EU legislation in regards to the welfare and protection of animals. |

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| | Skills: The ability to search and understand legal acts on the protection and welfare of animals in respective technological groups. The ability to perform simple practical tasks in regards to recognition and interpretation of basic behavioural practices of animals as supervised by an instructor. The ability to identify and make standard analyses of welfare in breeding facilities based on the interpretation of currently applicable legal provisions. The ability to keep records and make use of the information gathered in regards to health, welfare and productivity of the herd. Knowledge of advantages and disadvantages of the actions taken to evaluate welfare criteria versus social conditions. |
| | Social competence: Awareness of the social, professional and ethical responsibility for animal production, welfare of animals together with the shaping and state of the natural environment in regards to welfare. Awareness of the need for targeted further education and self-improvement in regard to the occupation exercised, which is directly linked to the changes in legislation, systems of animal maintenance and social changes. |
| Content of the programme module | Description of correct and incorrect behavioural practices of farm animals that accompany people, and free-living animals. Basic parameters that characterise welfare, as well as domestic and EU legal acts pertaining to animal protection and welfare. Evaluation of basic parameters of animal welfare and methods of its control with the application of physiological, behavioural, productive, health and complementary parameters pursuant to domestic and EU legislation. Improving knowledge of negative consequences of decline in welfare; acquaintance with abnormal behaviour and diseases, which result from in decline of welfare. |
| Planned didactic forms/actions/methods | Students have an opportunity to participate in lectures as part of the course. Some of the tasks are completed by students in teams (e.g. evaluation of welfare in different kinds of environments); they may also, in collaboration with the lecturer, develop their own project that covers selected issues connected with welfare, which they will later demonstrate in the form of a presentation. |

| **Name of the programme module** | **Microbiology 1** |
|---|---|
| Programme module type | Obligatory |
| Year of studies for a given field | II |
| Term for a given field | IV |
| ECTS credits together with contact/no contact hours division | 6 (3.1/2.9) |
| A unit providing the course | Division of Veterinary Microbiology |
| Module objective | Acquainting students with the specific knowledge of morphology, physiology, biological properties, features of pathogenicity in microbes that cause diseases in animals (bacteria, fungi, viruses) in regards to their identification |
| Educational results | Knowledge: General knowledge of morphology and physiology of microbes that are potentially pathogenic to animals. 2. General knowledge of techniques used to isolate and identify microbes. General knowledge of how microbes interact with macroorganisms (animals). |
| | Skills: The ability to seek, comprehend, analyse and creatively implement the information on microbiology from various literature sources. The ability to accurately verbalise knowledge in an oral or written form. The ability to single-handedly carry out, analyse and evaluate a given diagnostic procedure and interpret the results obtained. |
| | Social competence: The ability to cooperate and work in a group. Awareness of the social, professional and ethical responsibility for the health of animals. Knowledge of procedures necessary to restrict the microbial influence on animal health. Awareness of the need to permanently broaden the knowledge of how microbes interact on the animal organism. |
| Content of the programme module | Microbiology - general section: morphology, physiology, methods of culturing and storing bacteria, fungi, viruses; sensitivity to environmental factors (temperature, oxygen, water, nutrients); factors inhibiting microbial growth, a method of evaluation; genetics of bacteria – factors that condition variability and formation mechanisms; methods used for microbial identification |
| Planned didactic forms/actions/methods | Lectures, performing diagnostic analyses in bacteriology, virology and mycology, multimedia presentations, discussions |

| **Name of the programme module** | **Veterinary epidemiology** |
|---|---|
| Programme module type | Obligatory |
| Year of the study programme | II |
| Semester of the study programme | IV |
| ECTS credits together with contact/no contact hours division | 3.0 ( 2.0 /1.0) |
| A unit providing the course | Department of Epizootiology and Clinic of Infectious Diseases |
| Module objective | To familiarise students with basic terms used in epidemiology, including terms referring to the formation, course and prevalence of diseases in a population, theoretical background for interpretation of diagnostic test results, the principles of carrying out cross-population and observational studies, the principles of evidence-based medicine, the principles of carrying out surveys and clinical studies, IT systems used in animal health care, and the principles of animal disease control. |
| Educational results | Knowledge: The Student is familiarized with and understands basic epidemiological terms and definitions; Is able to name the basic types of epidemiological studies |

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| | Skills: Is able to plan the course of epidemiological studies; Is able to interpret results of epidemiological studies; Is able to use the available software to plan and interpret epidemiological study results |
| | Social competences: Is able to work in a team; Shows responsibility for decisions made regarding people and animals; Develops the habit of lifelong knowledge and skill development |
| Contents of the education module | Basic terms in epidemiology; diseases and their classification; epidemiology and its classification; population and its characteristics; formation and course of diseases in a population; causes of diseases; frequency of diseases; epidemic; prevalence of diseases in a population; indicators of disease prevalence in a population; diagnostic tests; sensitivity and specificity of diagnostic tests; predictive values; diagnostic tests; threshold value and methods for determining a threshold value; ROC curve and its interpretation; evaluation of the compliance of test results; multiple studies; cross-population studies; principles for carrying out cross-population studies; sampling methods; cross-population studies; determining a sample size; observational studies; cohort, case/control and cross-sectional observational studies; calculating the relative risk and attributable risk; interpretation of results; observational studies; cohort, case/control and cross-sectional observational studies; calculating the relative risk and attributable risk; interpretation of results; evidence-based medicine; systematic review and meta-analysis; reliability of study results; clinical studies; surveys; clinical study protocol; the sponsor, the monitor and the investigator; survey structure and development; methods for carrying out surveys; principles for disease control; data and methods of their collection; monitoring; supervision of the health of a population; IT systems in animal health care; IT systems used in Poland; IT systems used in other EU member states; principles for animal disease control; disease control programmes; contingency plans |
| Planned didactic forms/activities/methods | Lectures, individual task-solving, case studies, discussions |

**Fifth semestr modules**

| **Name of the programme module** | **Microbiology 2** |
|---|---|
| Programme module type | obligatory |
| Year of studies for a given field | III |
| Term for a given field | V |
| ECTS credits together with contact/no contact hours division | 7 (3.1/3.9) |
| A unit providing the course | Division of Veterinary Microbiology |
| Module objective | Acquainting students with the specific knowledge of morphology, physiology, biological properties, features of pathogenicity in microbes that cause diseases in animals (bacteria, fungi, viruses) and its theoretical and practical implementation in microbial diagnostics |
| Educational results | Knowledge: Detailed knowledge of morphology and physiology of microbes that are potentially pathogenic to animals. Knowledge of the relationship between the environment and the microbes that inhabit it. Detailed knowledge of techniques to isolate and identify microbial groups. Detailed knowledge of how microbes interact with macroorganisms (animals). |
| | Skills: The ability to seek, comprehend, analyse and creatively implement the information on microbiology from various literature sources. The ability to accurately verbalise knowledge in an oral and written form. The ability to single-handedly carry out, analyse and evaluate a given diagnostic procedure and interpret the results obtained. The ability to suitably select proper laboratory techniques for microbial identification and breeding, and the ability to identify microbes that are adverse to animal health |
| | Social competence: The ability to cooperate and work in a group. Awareness of the social, professional and ethical responsibility for the health of animals. Knowledge of procedures necessary to restrict microbial influence on animal health. Awareness of the need to permanently broaden the knowledge of how microbes interact with the animal organism. |
| Content of the programme module | Detailed microbiology – microbes that are adverse to animal health: Bacteria: *E.coli, Salmonella, Yersinia, Pasteurella, Bacillus, Clostridium, Erysipelotrix, Listeria, Mycobacterium, Mycoplasma, Streptococcus, Staphylococcus, Brucella.* Fungi: *Trichophyton, Microsporum, Candida, Malassezia, Cryptococcus, Aspergillus, Mucor, Fusarium.* Viruses: *Parvoviridae, Herpesviridae, Picornaviridae, Paramyxoviridae, Rhabdoviridae* family. Phenotypic traits of microbes (species, representatives) including the agents responsible for virulence and pathogenicity of the infection – detailed procedures used in detailed microbial diagnostics |
| Planned didactic forms/actions/methods | Lectures, performing diagnostic analyses in bacteriology, virology and mycology, multimedia presentations, discussions |

| **Name of the programme module** | **Veterinary Pharmacy** |
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| Programme module type | Obligatory |
| Year of studies for a given field | III |
| Term for a given field | 5 |
| ECTS credits together with contact/no contact hours division | 2 (1/1) |

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| A unit providing the course | Institute of Pharmacology, Department of Veterinary Preclinical Sciences, Faculty of Veterinary Medicine, University of Life Sciences in Lublin |
| Module objective | Acquisition of knowledge and skills in the field of Veterinary pharmacy |
| Educational results | Knowledge: Knowledge of possible drug interactions inside and outside an organism. Knowledge of different drug formulations and modern forms of veterinary medicine. The ability to name the advantages and disadvantages of respective drug formulations. The ability to name the advantages of the application of probiotics and feed enzymes. |
| | Skills: The ability to prepare basic drug formulations. Exercises in correct prescription issuance. The ability to evaluate the possibilities of adverse effects and interactions when combined therapy is implemented. The ability to seek, comprehend, analyse and creatively implement the necessary information from various literature sources. |
| | Social competence: Understanding the importance of lifelong learning, the ability to inspire and organize learning processes for others. Awareness of the social, professional and ethical responsibility for the welfare of animals and the shaping of their environment. The ability to predict the effects of a doctor's activity within the protection of public health, as well as the ability to take actions to minimize risks. The ability to cooperate and work in a group assuming various roles. |
| Content of the programme module | Lectures: 1. Modern forms of veterinary medicine; 2. Interactions of veterinary medicine; 3. Interactions of medicines with food; 4. Pharmacokinetics of medicines at different stages of pathology;<br>Tutorials 1. Pharmacokinetic and pharmacodynamic interactions of medicine; 2. Disinfection and disinfectants; 3. Polish Pharmacopoeia; 4. Non-conventional treatment – homeopathy, herbal treatment; 5. Veterinary medicine formulations – pills, ointments, solutions; 6. Practical preparation of respective drug formulations; 7. Analytical methods of veterinary medicine testing; 8. Probiotics and feed enzymes. |
| Planned didactic forms/actions/methods | Lectures, multimedia presentations, laboratory class reports, discussions, experiments, project execution, |

| **Name of the programme module** | **Public Health Care in Emergencies** |
|---|---|
| Programme module type | Obligatory |
| Year of studies for a given field | III |
| Term for a given field | V |
| ECTS credits together with contact/no contact hours division | 2 (1/1) |
| A unit providing the course | Department of Food Hygiene of Animal Origin |
| Module objective | Acquainting students with hazards, methods of their prevention and minimalizing their effects, as well as the methods of appropriate responding in critical situations related to the veterinary supervision of public health |
| Educational results | Knowledge: Knowledge of the legal bases and basic definitions concerning the protection of public health. Knowledge of the principles of functioning and the tasks of the Veterinary Institute in regards to public health. Knowledge of the most important biological, chemical and radiation hazards for public health and the methods of addressing these hazards. |
| | Skills: The ability to reasonably interpret social responsibility of veterinary doctors in regards to the veterinary care of public health. The ability to implement contingency plans as standard procedures in the occurrence of a crisis situation. The ability to take measures in the occurrence of crisis situations for which procedures have not been drawn up yet. |
| | Social competence: Understanding the need for continuing education in connection with the progress of science and technological advancement. Awareness of the responsibility for the safety of public health and the ability to cooperate with the representatives of other professions when implementing tasks connected with public health. |
| Content of the programme module | 1. The role and tasks of the state in the implementation of public health protection – legal acts. 2. Factors of biological weapons and methods of minimizing the effects of bioterrorist attacks. 3. The tasks of Veterinary Inspection under Public Health Care Emergencies. 4 Biological and chemical hazards for public health care. 5. Quality and safety of food schemes (including water). 6. Basic principles of radiation and radioactivity, effects of radiological emergencies and protection against radioactivity of people, animals and food. |
| Planned didactic forms/actions/methods | lectures, laboratory classes |

| **Name of the programme module** | **Pathophysiology** |
|---|---|
| Programme module type | Obligatory |
| Year of studies for a given field | III |
| Term for a given field | V and VI |
| ECTS credits together with contact/no contact hours division | 6 (3.78/2.22), 5 (3/2) |
| A unit providing the course | Department of Veterinary Preclinical Sciences, Department of Pathophysiology |
| Module objective | Acquainting students with etiology and pathomechanisms of diseases. Students acquire the necessary knowledge and practical skills in regards to the systemic response of the organism (e.g. disease, |

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| | inflammation, stress, atherosclerosis, acid/base imbalance, repair, ageing), pathological effect of physical, chemical and biological factors in respective animal species and the pathogenesis of animal diseases at the molecular, cellular, organ and systemic level with the consideration of cause-related therapy. Emphasising the need for modelling diseases with the purpose of capturing etiology and changes that give rise to lesions, in such a way as to control and prevent diseases. |
| Educational results | Knowledge: The ability to characterize and explain basic pathological processes, e.g. inflammation, neoplasm, acid-base imbalance; the ability to determine their significance for the course of a disease. Knowledge of, understanding and the ability to interpret the role of signalling molecules and receptor proteins in the pathomechanisms of neoplastic and genetic diseases. The ability to describe, explain and interpret the principles and mechanisms that underlie the occurrence of free radical and deficiency diseases at the molecular, cellular, organ and systemic level with the consideration of biological mechanisms that ensure recovery. |
| | Skills: The ability to analyse, evaluate and apply pathogenesis for selecting appropriate cause-related treatment in animal diseases. The ability to perform, analyse and individually interpret the results of laboratory experiments in regards to the etiology and pathogenesis of animal diseases. The ability to individually apply selected molecular and cellular laboratory techniques and the use of results for the analysis of the etiology, pathomechanism and cause-related therapy of diseases. |
| | Social competence: Awareness of the need for lifelong self-improvement and education in connection with constant progress in biomedical sciences. Awareness of the need for targeted education and self-improvement in the field of etiology and pathogenesis of diseases at the molecular level. |
| Content of the programme module | Endogenous and exogenous aetiological agents which condition the pathogenesis of diseases; the molecular foundation for inflammatory reactions, processes of repair and regeneration, mechanisms of ageing and longevity, genetic susceptibility and diseases immunity. Molecular and signalling conditions of neoplasia, the pathomechanism of angiogenesis and metastases. The neurohormonal mechanism of a stress reaction, cellular response to stress, adaptation and consequences of stress. Value deviations in the anion gap, differences and the strong anion gap in acid-base and water-electrolyte imbalance. Application of changeable values of cationic-anionic difference in animal feed for prophylaxis and therapies of animal diseases. The pathomechanism of arteriosclerosis with the consideration of deviations in the metabolism of respective lipoprotein fractions, as well as proteins that influence lipoprotein transformation.<br>The pathomechanism of cardiomyocyte damage in heart failure. Phosphorylation disorders in transmitter and regulating proteins and the changes in the amount of activity of adrenoreceptors in the pathomechanism of dilated cardiomyopathy in dogs. The correlation of neutrophilia, the coagulation system and mediators of inflammation in bovine respiratory diseases (BRD) and chronic obstructive pulmonary disease in horses (COPD). The significance of the activity of cyclic nucleotides and gastrointestinal hormones in the receptor, neuronal and neuroinflammatory mechanisms of secretory diarrhoeas. The participation of trophoallergens in digestive intolerance. Infectious anorexia. The equine and bovine mechanism of autointoxication. Pathomechanisms of pancreatitis and intestinal proliferation. Activation of stellate cells and Kupffer cells in the course of liver fibrosis and cirrhosis. Molecular mechanisms of endocrine disorders. Hormonal and receptor conditions of ovarian cyst development. Genetic and immunological origin, as well as receptor immunity in the etiopathogenesis of different types of diabetes in cats and dogs. Kidney failure, nephrotic and nephritic syndrome. |
| Planned didactic forms/actions/methods | Lectures, seminars, laboratory classes, practical exercises, demonstrations, multimedia presentations, boards of education (students with outstanding results may work for the Student Scientific Group – Pathophysiology Section – experimental work under the supervision of a researcher and lecturer and the presentation of the work at the International Congresses of Student Scientific Groups, e-learning. |

| **Name of the programme module** | **Clinical and Laboratory Diagnostics I** |
|---|---|
| Programme module type | Obligatory |
| Year of the study programme | III |
| Semester of the study programme | V |
| ECTS credits together with contact/no contact hours division | 6 (3.0/3.0) |
| A unit providing the course | Sub-Department of Clinical Diagnostics and Veterinary Dermatology, Faculty of Veterinary Medicine, University of Life Sciences in Lublin, Poland |
| Module objective | The aim of the module is to familiarise students with the methods of safely handling animals and the methods of carrying out a general and detailed clinical examination of particular animal species. Students learn about basic clinical concepts and master clinical examination techniques in accordance with the examination plan. |
| Educational results | Knowledge: Knowledge of the methods and the rationale for interview data collection and learn the proper handling of animals during a clinical examination; learn how to correct describe an animal and how to carry out a general physical examination, and a detailed examination of particular systems |
| | Skills: The student is able to ask targeted questions regarding an interview, obtain information from the animal's owner and produce the description of an animal; is able to carry out a general clinical examination and the clinical examination of the integumentary, respiratory and circulatory system in particular animal species |

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| | Social competencies: The student is able to adjust questions to the intellectual level and the emotional state of the animal's owner during an interview; is familiar with the principles of ethical handling of animals during examination; is able to cooperate with other veterinary doctors when carrying out professional duties. |
| Content of the programme module | Animal handling during a clinical examination; methods for restraining animals;<br>collecting interview data from animal owners; the current state of an animal; carrying out a general physical examination; habitus assessment; examination of the internal body temperature; breath testing; examination of external integuments; examination of the airways; examination of the chest: visual examination, assessment of dyspnoea, palpation, percussion, auscultation; examination of the circulatory system, examination of the heart, peripheral vascular examination, pulse examination |
| Planned didactic forms/activities/methods | The module includes the following didactic methods: lectures, demonstrations of testing methods and diagnostic techniques, practical classes with multimedia presentations, practical classes involving the presence of companion and farm animals at the Clinic of Internal Diseases |

| **Name of the programme module** | **Veterinary Pharmacology** |
|---|---|
| Programme module type | Obligatory |
| Year of studies for a given field | III |
| Term for a given field | V and VI |
| ECTS credits together with contact/no contact hours division | 5(2.5/2.5), 5(2.5/2.5) |
| A unit providing the course | Division of Pharmacology |
| Module objective | Acquainting students with veterinary pharmacology, its mechanism, as well as the pharmacokinetics and pharmacodynamics of drugs. |
| Educational results | Knowledge: Comprehension of basic concepts from the field of general pharmacology, applying the knowledge of the properties of pharmacokinetic and pharmacodynamic active substances which belong to a class of drugs commonly used in various animal species. Recognition of indications and contraindications for the use of medicine in animals. Understanding of basic concepts from a scope of; Pharmacology of the peripheral and central nervous system; medication used in the treatment of diseases of the digestive, respiratory, cardiovascular and urinary systems; drugs acting on the uterus and mastitis; drugs used in bacterial, fungal and protozoan infections. Comprehension of pharmacodynamic and pharmacokinetic drug interactions, factors modifying the pharmacokinetics of drugs. |
| | Skills: The ability to make an accurate selection of a drug in a given disease entity. The ability to rationally dose medication. The ability to seek, comprehend, analyse and creatively implement the necessary information from various literature sources. The ability to evaluate the advantages and disadvantages of measures taken to tackle therapeutic problems. |
| | Social competence: Understanding the importance of lifelong learning, the ability to inspire and organize learning processes for others. Awareness of the social, professional and ethical responsibility for the well being of animals and the shaping of their environment. The ability to predict the effects of a doctor's activity within the protection of public health, as well as the ability to take actions to minimise the risk of using medicine. The ability to cooperate and work in a group assuming various roles |
| Content of the programme module | Veterinary pharmacology - Pharmacopoeia + ABN list, test prescriptions, medicinal prescriptions, narcotic prescriptions, Latin names of medicines, therapeutic doses, pharmacokinetic parameters. The effect of drugs in the system, the mechanism of drugs (indications, contraindications, adverse effects) Drugs: anti-parasitic, anti-neoplastic, antihistamine, applied in the diseases of the urinary and reproductive system.<br>Veterinary Pharmacology – Pharmacotherapy in mastitis, antibiotics and chemotherapeutic agents, test preparations. Medicine for the central nervous system. Medicine for the parasympathetic and sympathetic, respiratory and digestive systems, painkillers. Antihistamines and anti-viral medicine |
| Planned didactic forms/actions/methods | Lectures, multimedia presentations, films, virtual laboratory, group work/lectures, discussions, demonstrations, conversations, project methods, laboratory class reports. |

**Sixth semester modules**

| **Name of the programme module** | **Clinical and Laboratory Diagnostics II** |
|---|---|
| Programme module type | Obligatory |
| Year of the study programme | III |
| Semester of the study programme | VI |
| ECTS credits together with contact/no contact hours division | 5 (3.0/2.0) |
| A unit providing the course | Sub-Department of Clinical Diagnostics and Veterinary Dermatology |
| Module objective | The purpose of the module is to familiarize students with methods for clinical examination of particular animal species and the principles and methods of carrying out laboratory tests and interpreting their results. |
| Educational results | Knowledge: Students are familiarized with the diagnostic possibilities of clinical examination of the digestive, locomotor, nervous, urinary and reproductive system in particular animal species. Student are familiarized with the principles for the collection, storage and transport of biological samples. Student are familiarized with the methods of testing biological samples and learn their diagnostic |

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| | significance |
| | Skills: Students are able to carry out the clinical examination of the digestive, locomotor, nervous, urinary and reproductive system in particular animal species; are able to collect, evaluate and store samples for laboratory tests and carry out basic laboratory tests in accordance with the principles regarding human and animal safety; are able to use reference values of diagnostic parameters in particular animal species; are able to perform injections and punctures. |
| | Social competencies: Student are familiarized with the principles of the ethical management of animals during examination and when collecting samples for tests; are able to cooperate with other veterinary doctors and experts from various fields when carrying out professional duties; are aware of the results of their actions within the scope of future professional duties; are aware of their limitations and understand that continuing education and self-improvement in the subject are essential. |
| Content of the programme module | Animal handling during clinical examination; examination of the digestive system; examination of the genitourinary system; catheterization of the urinary bladder; examination of the locomotor and nervous system; examination of the locomotor system (evaluation of animal behaviour and of the disorders of consciousness); evaluation of mobility; injections and punctures into body cavities; laboratory test techniques used in the clinical practice; organization of a veterinary laboratory; collection of samples for laboratory tests;<br>urine and faecal analysis; biochemical tests for the evaluation of hepatic and renal function; reference values for laboratory test results in particular animal species; |
| Planned didactic forms/activities/methods | The module includes the following didactic methods: lectures, practical classes with multimedia presentations, demonstrations of laboratory techniques and laboratory diagnostic methods, practical classes involving the presence of companion and farm animals at the Clinic of Internal Diseases |

| **Name of the programme module** | **Diseases of Beneficial Insects** |
|---|---|
| Programme module type | Obligatory |
| Year of the study programme | III |
| Semester of the study programme | VI |
| ECTS credits together with contact/no contact hours division | 1.0 ( 1.0/0) |
| A unit providing the course | Department of Epizootiology and Clinic of Infectious Diseases |
| Module objective | The aim of the module is to familiarise students with: current information on threats to the animals (beneficial insects: honeybees, bumblebees, solitary bees, silkworms, food insects) and methods of elimination of the threats; major infectious diseases of bees and other beneficial insects mentioned above, and their etiology, pathogenesis, clinical course; methods for the diagnosis and management of particular disease entities. The module also aims to teach students how to carry out a differential diagnosis, and how to prevent and treat infectious diseases, and to familiarise students with compulsory notifiable diseases that have been identified in beneficial insects and with the administrative procedure to eliminate and reduce the spread of such diseases in Poland and other EU member states. |
| Educational results | Knowledge: a student who has completed the module:<br>has knowledge regarding the anatomy, physiology and use of insects.<br>Knows major diseases of worms and bees, as well as bumblebees, solitary bees, silkworms and food insects, including compulsory notifiable diseases that have been identified in the above species.<br>Has knowledge regarding the etiology, spreading routes, diagnosis and differential diagnosis of major infectious disease entities in beneficial insects.<br>Demonstrates the knowledge of clinical symptoms, causes, anatomo-pathological changes, methods for diagnosis, prevention and treatment of non-infectious and infectious diseases of beneficial insects.<br>Has the knowledge required to diagnose and treat particular infectious disease entities affecting beneficial insects. |
| | Skills: a student who has completed the module: Is able to carry out a veterinary medical interview and a clinical examination of bee colonies and nests of other insects suspected of a particular disease. Is able to collect samples suitable for laboratory tests. Knows methods for the management of sick bee colonies and other beneficial insects, as well as methods for the management of bee colonies and other beneficial insects suspected of an infectious disease. Knows procedures for the management of compulsory notifiable diseases. Is able to implement treatment that is effective against a given disease entity. Knows the principles of prevention of infectious diseases and methods for the interruption of the epizootic chain. Is able to carry out appropriate analysis of clinical symptoms and results of laboratory and additional tests, and to formulate a diagnosis and take appropriate course of treatment of beneficial insect diseases. |
| | Social competencies: a student who has completed the module: Is aware of his or her own responsibility for the decisions regarding an animal and its owner. Observes the principles of ethics. Is aware of his or her own limitations and is able to use the advice and help of specialised units or experienced veterinary doctors. Believes that building knowledge and skills in the scope of diagnosis, treatment and control of diseases of beneficial insects is a lifelong necessity. |
| Contents of the education module | Diseases of beneficial insects: pathogenesis of selected non-infectious disease entities and anomalies |

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| | in the development of insects; how infectious diseases are spread and what their etiological factors are; methods for the prevention and control of infectious and invasive diseases of beneficial insects; methods for the management of compulsory identifiable diseases; methods for the appropriate collection of samples for laboratory tests; interpretation of laboratory tests.<br>Contents of the lectures: the lectures contain information on the history of Polish and international beekeeping, bee species, the biology of a bee colony, silkworm and bumblebee breeding, general hive management and bee products. The main contents of the lectures comprise diseases of worms and adult bees, intoxications and bee pests.<br>Contents of the practical classes: morphology of bees, bumble bees, solitary bees, silkworms, food insects; beekeeping equipment, hive equipment, types of bee products and diseases, particularly methods for the diagnosis and control of diseases. The classes allow students to familiarise themselves with current cases of pathological changes observed in apiaries. Students attending the classes learn about the basics of controlling compulsory notifiable diseases (elimination of outbreaks of infectious diseases of bees). Practical classes take place in an apiary. |
| Planned didactic forms/activities/methods | Lectures, laboratory classes, practical classes in an apiary, discussions. |

| **Name of the programme module** | **Anaesthesiology and fundamentals of surgery** |
|---|---|
| Programme module type | obligatory |
| Year of studies for a given | III |
| Term for a given field | VI |
| ECTS credits together with contact/no contact hours division | 3 (1.6/1.4) |
| A unit providing the course | Department and Clinic of Animal Surgery, Faculty of Veterinary Medicine, University of Life Sciences in Lublin, Poland |
| Module objective | To learn about the methods for anaesthesia in animals, and about surgical instruments and anaesthetic apparatus, tissue sealing, bleeding control, applying dressing, the principles of surgical asepsis and antisepsis, the methods for instrument sterilisation, the principles for the management of surgical emergency cases |
| Educational results | Knowledge: The student has the knowledge of drugs used for premedication and general anaesthesia, methods for local and general anaesthesia and the management of surgical emergency cases; Is familiar with the diagnostics and therapy of wounds, closed injuries, haematomas, abscesses, lymphomas; Is familiar with surgical instruments and anaesthetic apparatus, and the methods for tissue cutting and sealing, bleeding control and dressing application |
| | Skills: Is able to apply appropriate sedation and carry out general and local anaesthesia, manage pain and provide first aid to patients with bleeding, wounds, multi-organ injury and anaesthetic complications; Posses the skill of applying and using surgical instruments and anaesthetic apparatus; Is able to apply surgical aseptic and antiseptic techniques and sterilize instruments |
| | Social competencies: Acts in accordance with the principles of veterinary deontology that pertain to aspects of management of emergency cases and pain relief; Understands pain in animals, aims to improve animal welfare and increase the awareness of the subject among animal owners, and cooperates with animal owners as part of the therapy provided. |
| Content of the programme module | Contents of the lectures: phenothiazine derivatives, benzodiazepine derivatives, α2 agonists, butyrophenone derivatives, muscle relaxants, painkillers, ketamine, barbiturates, fundamentals of general anaesthesia, inhalation anaesthesia, patients with multi-organ injury, management of emergency cases, closed injuries, abscesses, haematomas, lymphomas, wound healing |
| Planned didactic forms/activities/methods | Multimedia presentations. Restraining animals in practice. Practical demonstration of premedication, infusion and inhalation anaesthesia. Monitoring an anaesthetic patient in practice. Demonstration of surgical instruments and anaesthetic apparatus and their application in practice. Practical teaching of methods for applying surgical sutures. Applying wound dressing. Discussion of the action of particular drugs by students |

| **Name of the programme module** | **Animal feed hygiene** |
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| Programme module type | Obligatory |
| Year of studies for a given field | III |
| Term for a given field | VI |
| ECTS credits together with contact/no contact hours division | 2 (1.36/0.64) |
| A unit providing the course | Institute of Biological Bases of Animal Diseases Division of Veterinary Prevention and Avian Diseases |
| Module objective | Acquainting students with basic legal acts, applicable domestically and in the European Union, in regards to the health and trade quality of materials and feed additives used in animal feeding, as well as duties and competence of the Veterinary Inspection in regards to feed hygiene and official control. |
| Educational results | Knowledge: Understanding the correlation between the health quality of animal feed and the safety of food of animal origin. Knowledge of the role and duties of veterinary services in supervision over feed production |

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| | Skills: The ability to exercise veterinary and sanitary supervision over the production, distribution and application of animal feed. The ability to identify and evaluate the factors that influence the quality of animal feed on the basis of applicable regulations. The ability to undertake standard procedures using suitable provisions that solve problems in terms of medicated feed, genetically modified feed and feed materials that contain animal protein |
| | Social competence: Awareness of the social, professional and ethical responsibility for the health quality of animal feed, the necessity of permanent self-education and self-improvement in regards to the duties of Veterinary Inspection in terms of the official control of animal feed |
| Content of the programme module | A description of basic legal acts in Poland and the EU concerning animal feed. The duties of the Veterinary Inspection in regards to the official control of feed; establishments that produce feed additives, premixtures and compound feed, as well as control of the products that are placed on the market. Regulations that pertain to feed sampling for tests as well as handling samples in regards to official control. Feed evaluation on the basis of applicable provisions: microbiological testing, testing for growth promoters, coccidiostats and other feed additives. Regulations pertaining to the production, distribution and animal application of medicated feed and feed that contains genetically modified organisms. Description of the substances, which have an adverse effect on animal health, the quality of foodstuffs of animal origin and the environment. Provisions pertaining to the possibility of applying animal tissue in animal feeding. The role and tasks of Border Veterinary Inspectors in the official feed control and the structure and function of the Domestic Early Warning System. Sanitary and hygienic evaluation of water. |
| Planned didactic forms/actions/methods | Lectures, laboratory classes, tutorials, multimedia presentations, discussions. |

| **Name of the programme module** | **Veterinary parasitology and invasiology 1** |
|---|---|
| Programme module type | Obligatory |
| Year of studies for a given field | III |
| Term for a given field | VI |
| ECTS credits together with contact/no contact hours division | 4 (1.7 / 2.3 ) |
| A unit providing the course | Department of Parasitology and Invasive Diseases, Institute of Biological Bases of Animal Disease |
| Module objective | Discussion of human and animal parasites (protozoans, flat worms – trematodes and tapeworms) both in Poland and in the world, as well as parasitic diseases, which are significant from the economic, sanitary and invasive point of view. Awareness of the significance of parasitic zoonosis (protozoan and flat helminths). Acquisition of knowledge and skills in the field of general parasitology. Presentation of the principles of modern diagnostics, as well as therapies and prophylaxis of invasive diseases caused by protozoans and flat worms. |
| Educational results | Knowledge: Knowledge of concepts from the field of parasitology and general invasiology, e.g. the parasitic spreading route. Knowledge of the most common parasitic invasions in people and animals (protozoans, trematodes, tapeworms). Knowledge of parasitical diagnostic methods, anthelmintic and basic principles of therapy and prophylaxis of parasitic diseases (protozoans, trematodes, tapeworms) |
| | Skills: The ability to conduct a parasitical examination and recognize a given invasion. The ability to apply appropriate treatment of basic disease entities and suggest a suitable prophylaxis (protozoans, trematodes, tapeworms) |
| | Social competence: Awareness of animal parasitic disease hazards (protozoans, trematodes, tapeworms) |
| Content of the programme module | Basic issues of parasitology and invasiology. Methods of recognising parasitic invasions. General description of protozoans, trematodes and tapeworms. Detailed parasitology demonstrated in a systematic arrangement. Parasitic infestations in the host system, protoparasitosis in particular, in carnivores, horses, ruminants, pigs, birds and humans. Antiprotozoal drugs. Fascioliasis and other trematodoses in ruminants. Trematodes and tapeworms in birds. Human trematodoses, medicine administered for diseases induced by trematodes. Taeniasis in carnivores. Moniesiosis and anoplocefalosis. Taeniasis in humans. Infestations of larval tapeworms; medicine administered to combat tapeworm infestations. Parasitic zoonosis from the scope of protozoans, trematodes and tapeworms. |
| Planned didactic forms/actions/methods | Lectures, tutorials, multimedia presentations, live demonstrations, practical classes (including microscopy, macroscopic preparations (fixed), laboratory tests, parasitic preparation, post-mortem examinations. |

**Seventh semester modules**

| **Name of the programme module** | **Veterinary parasitology and invasiology 2** |
|---|---|
| Programme module type | Obligatory |
| Year of studies for a given field | IV |
| Term for a given field | VII |
| ECTS credits together with contact/no contact hours division | 3 (1.5/1.5) |
| A unit providing the module | Department of Parasitology and Invasive Diseases |

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| Module objective | Discussion of the parasitic nematodes and ectoparasites in humans and animals both in Poland and in the world, as well as parasitic diseases caused by these groups of parasites, which are significant from the economic, sanitary and invasive point of view. Awareness of the significance of parasitic zoonosis (group of nematodes and ectoparasites. Presentation of the principles of modern diagnostics, as well as therapies and prophylaxis of invasive diseases caused by nematodes and ectoparasites. Coexistence of parasites and clinical correlations. |
| Educational results | Knowledge: Knowledge of concepts from the field of parasitology and general invasiology, e.g. the parasitic spreading route. Knowledge of the most common parasitic invasions in people and animals (protozoans, trematodes, tapeworms). Knowledge of parasitical diagnostic methods, anthelminthics and basic principles of therapy and prophylaxis of parasitic diseases (protozoans, trematodes, tapeworms) |
| | Skills: The ability to conduct a parasitical examination and recognize a given invasion. The ability to apply appropriate treatment of basic disease entities and suggest a suitable prophylaxis (protozoans, trematodes, tapeworms) |
| | Social competence: Awareness of animal parasitic disease hazard (protozoans, trematodes, tapeworms) |
| Content of the programme module | A review of nematode invasion in carnivores, horses, ruminants, pigs, birds and humans. Strategies of fighting off nematode invasions as well as available medicine used in the therapy of nematode induced diseases. Ectoparasites of carnivores, humans, pigs, horses, sheep and methods of fighting them. Available preparations for combating ectoparasites. Environmental conditioning of invasions (protozoans, helminths, ectoparasites) and environmental contamination with parasitic forms in the context of human and animal health. Parasitosis of game animals (hares, roes, deer, boars). Parasitic zoonosis. |
| Planned didactic forms/actions/methods | Lectures, tutorials, multimedia presentations, live demonstrations, practical classes (including microscopy, macroscopic preparations (fixed), laboratory tests, parasitic preparation, post-mortem examinations |

| **Name of the programme module** | **Internship –parasitology** |
|---|---|
| Programme module type | Obligatory |
| Year of studies for a given field | III or IV |
| Term for a given field | VI or VII |
| ECTS credits together with contact/no contact hours division | 1 (0.5/0.5) |
| A unit providing the course | Department of Parasitology and Invasive Diseases, Institute of Biological Bases of Animal Diseases |
| Module objective | The aim of the classes is to improve the practical skills, which are useful in diagnostics and treatment of parasitic diseases through practical participation of students in diagnostic work in a parasitological laboratory. |
| Educational results | Knowledge: The knowledge of basic health and safety regulations for work at a parasitological laboratory. The knowledge of basic diagnostic methods required in parasitical diagnostics. |
| | Skills: The ability to conduct a basic parasitical examination. |
| | Social competence: Awareness of the parasitic zoonosis threat. |
| Content of the programme module | Discussion of health and safety regulations during work in diagnostic laboratories. Students learn how to use basic equipment in a parasitical laboratory.<br>Faecal examination – macroscopic, microscopic (thin layer smear, stained smear, flotation, decantation, a flotation and decantation method, MC Master quantitative method) Larvascopy methods, nematode larvae culture, serological methods. Scrape test, Examining soil in search for parasitic forms. Parasitic dissection. |
| Planned didactic forms/actions/methods | Tutorials, practical classes / including laboratory classes, dissections, |

| **Name of the programme module** | **Milk hygiene** |
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| Programme module type | Obligatory |
| Year of studies for a given field | IV |
| Term for a given field | VII |
| ECTS credits together with contact/no contact hours division | 3 (2/1) |
| A unit providing the course | Department of Food Hygiene of Animal Origin |
| Module objective | Acquainting students with sanitary, veterinary and technological aspects of obtaining and processing milk in order to prepare them for duties connected with the official supervision of processing milk |
| Educational results | Knowledge: Knowledge of legal acts that regulate the principles of sanitary and veterinary supervision over the acquisition and processing of milk. Knowledge of hygienic requirements, technological processes and HACCP procedures in milk processing. Knowledge of laboratory milk and dairy product testing methods necessary to properly perform the duties of sanitary and veterinary supervision. |

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| | Skills: The ability to interpret and apply suitable regulations of the food law while performing the duties of sanitary and veterinary supervision over milk processing. The ability to select appropriate methods and techniques of milk and dairy product testing. The ability to describe and evaluate sanitary conditions on every level of acquiring and processing milk correctly. |
| | Social competence: Awareness of the responsibility for the consumer's safety in regards to food control, as well as an ability to formulate opinions in regards to this occupation. Understanding of the need for continuing education in connection with the progress of science and technological advancement. |
| Content of the programme module | The essence of the 'Milk hygiene' programme module is acquainting students with: a) the principles of sanitary and veterinary supervision, acquiring and processing o milk in accordance with the existing legal regulations, b) competence of the official veterinary doctor while fulfilling the duty of a supervisor, c) technological processes in milk processing, d) the HACCP system in dairy production, e) methods of testing milk and dairy products. |
| Planned didactic forms/actions/methods | Lectures, laboratory classes, field classes in a creamery |

| **Name of the programme module** | **Diagnostic imaging** |
|---|---|
| Programme module type | Obligatory |
| Year of the study programme | IV |
| Semester of the study programme | VII |
| ECTS credits together with contact/no contact hours division | 4 (2.4/1.6) |
| A unit providing the course | Laboratory of Radiology and Ultrasonography |
| Module objective | To learn about diagnostic imaging techniques, the basics of the analysis of x-ray, ultrasound and computed tomography images and endoscopy, and the principles of radiation protection within the set hour limit.<br>To acquire the skills of choosing the appropriate method of diagnostic imaging and interpreting the achieved results in different disease conditions and different species of animals. |
| Educational results | Knowledge: Students acquire the knowledge necessary to evaluate the results of x-ray and ultrasound tests, and to formulate a diagnosis (including differential diagnosis) |
| | Skills: Students have the skill of interpreting imaging results correctly and are able to formulate a diagnosis (including a differential diagnosis)**;** show the skill of using diagnostic apparatus, including radiographic and ultrasound apparatus**;** are able to produce a clear case narrative and maintain documentation in accordance with applicable rules and regulations and in a form that is comprehensible both to the owner of an animal and to other doctors |
| | Social competencies: Students are capable of independent action, formulating opinions, assuming responsibility for decisions made and are aware of their influence on human and animal health within the scope of diagnostic imaging; are able to set priorities to implement tasks, correctly identify and resolve dilemmas related to the profession, observe the principles of ethics and veterinary deontology; are aware of their limitations, understand that continuing professional education and self-improvement are essential |
| Content of the programme module | Advantages and limitations, indications and contraindications for the use of particular diagnostic imaging techniques;<br>radiation protection, design and types of x-ray devices, principles for carrying out an x-ray examination, interpretation of thoracic and abdominal lesions; methods of contrast examinations, radiological image of bones during osteogenesis and after reaching skeletal maturity, bone fracture and healing, bone inflammation and bone neoplasia, degenerative bone and joint diseases; preparation of a patient for a CT scan, basics of interpretation of a computed tomography image; documentation of the conducted examinations; apparatus, image formation, artefacts in ultrasound imaging; basic principles of abdominal ultrasound imaging and diagnosis of abdominal lesions; endoscopy: endoscopic instruments, preparation of a patient for the examination; basic principles of endoscopy |
| Planned didactic forms/activities/methods | Lectures, multimedia presentations, practical classes, discussions, oral examination |

| **Name of the programme module** | **Veterinary Toxicology** |
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| Programme module type | Obligatory |
| Year of studies for a given field | IV |
| Term for a given field | VIII |
| ECTS credits together with contact/no contact hours division | 4 (3.04/0.96) |
| A unit providing the course | The Institute of Toxicology and Environmental Protection |
| Module objective | Acquisition of knowledge and skills of animal poisoning |

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| Educational results | Knowledge: Knowledge of the mechanisms of pathophysiological changes formation on the sub-cellular, cellular, tissue, organ and systemic level in the course of animal poisoning. Knowledge of the basic concept and toxicological terms, poisoning-inducing agents in animals, knowledge and ability to describe the principles of poisoning diagnostics and treatment, the knowledge and ability to provide a detailed description of the causes, symptoms and treatment in selected poisoning cases. Knowledge for conducting a clinical examination of animals according to the examination plan, a thorough analysis of clinical symptoms, recognition of anatomo-pathological changes, an assessment of laboratory and additional results, the ability to diagnose in reference to differential diagnostics, the ability to take therapeutic or/and prophylactic measures in regards to animal poisoning |
| | Skills: The ability to describe systemic and environmental conditions, etiological agents and development mechanisms of animal poisoning, and apply the knowledge to make appropriate diagnostic, therapeutic and prophylactic measures. The ability to explain and interpret disorders on a molecular level, as well as on a cellular, tissue, organ, systemic and the entire organism level in the course of animal poisoning. The ability to conduct an inquiry, conduct a clinical examination according to the examination plan, a thorough analysis and proper interpretation of clinical symptoms, anatomo-pathological changes, laboratory and additional results, the ability to diagnose in reference to differential diagnostics, the ability to take therapeutic and prophylactic measures in the case of animal poisoning |
| | Social competence: The ability to act autonomously and formulate own opinions, the ability to take responsibility for decisions and the awareness of their effects, with particular attention to those which affect animal and human health |
| Content of the programme module | Basic concepts and terms in toxicology. Poison-inducing agents. Toxicokinetics and toxicodynamics. The role of biotransformation on the effects of poison. Toxicometrics.<br>The description of the most common animal poisoning in medical practice (the circumstances and causes of poisoning, the effects of poison on the organism, the mechanism of action, symptoms, treatment and procedures in case of pronounced fatal poisoning.<br>Diagnostics of acute and chronic poisoning - history (when and where the symptoms occurred, the course of poisoning, number of animals and the species, method of feeding, general zoohygienic conditions), clinical symptoms (from the nervous system, circulatory system, respiratory system, digestive system, excretory system, reproductive system, eyes and skin), typical anatomo-pathological changes, laboratory examination. |
| Planned didactic forms/actions/methods | Lectures, Laboratory classes, Tutorials (films that demonstrate the course of clinical poisoning in animals and medical procedures) Partial credit tests (written) |

| **Name of the programme module** | **Zoonosis** |
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| Programme module type | Obligatory |
| Year of the study programme | IV |
| Semester of the study programme | VII |
| ECTS credits together with contact/no contact hours division | 1 (0.6/0.4) |
| A unit providing the course | Department of Epizootiology and Clinic of Infectious Diseases |
| Module objective | Conveying knowledge that is required to perform the occupation of a veterinary doctor, including the knowledge of infectious and parasitic diseases that are naturally transmitted from vertebrates to humans, the transmission routes of zoonotic agents from an animal to a human, the methods for the prevention of zoonosis, basic information on epidemiology, etiologic agents, symptoms in animals and in humans, sources of infection and the reservoir of an infectious agent, the prevention and control of zoonotic diseases, the methods of protection, the possible use of zoonotic diseases as a biological weapon by terrorists, veterinary and medical legislation in force. |
| Educational results | Knowledge: Specifies, describing and interpreting risk factors, the causes of prevalence, clinical symptoms, and anatomo-pathological changes in specific zoonotic diseases of infectious and parasitic etiology. The student understands the pathogenesis of specific disease entities and is familiar with the principles for their diagnosis and therapy. Is familiar with basic diagnostic tests that are currently used to diagnose zoonoses. Knows the principles of general prevention and the prevention of specific disease entities, particularly including disease entities with the greatest zoonotic potential.Is familiar with legislation in force that regulates the control of zoonotic diseases. |
| | Skills: The student is able to carry out epizootic and epidemiological investigation, including an interview and clinical and additional tests in order to diagnose an infectious or parasitic zoonotic disease in individuals, and in increased risk groups. Is able to carry out suitable anti-epidemic procedures in zoonosis. Takes an appropriate course of action in the case of the identification of a zoonotic disease. Is familiar with issues in the scope of public health protection, particularly including food infections and xenozoonosis |
| | Social competencies: The student observes the principles of professional ethics, develops the habit of lifelong knowledge and skill building, and is able to evaluate the risk to public health |

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| Content of the programme module | The programme of practical classes in zoonosis comprises the etiology and pathogenesis, the sources of infection and reservoir of an infectious agent, entry points and routes of the spread of a disease, human and animal symptoms of a zoonotic disease, diagnosis, management, differential diagnosis, prevention, treatment and control of the following disease entities: General characteristics of zoonotic diseases (classification of zoonosis, zoonosis as a health and a social problem, zoonosis of the 21st century, xenozoonoses, legislation on zoonotic disease control, basic diagnostic tests that are used today to diagnose a zoonosis). Classification of particular zoonosis: Prion diseases (bovine spongiform encephalopathy, variant Creutzfeldt–Jakob disease). Viral diseases (rabies, West Nile virus infection, haemorrhagic fevers caused by arenaviruses and viruses of the Bunyaviridae family, avian flu, foot-an–mouth disease, infection with the Hendra and Nipah viruses, arboviral infection and tick-borne encephalitis). Bacterial diseases (Q fever, Lyme disease, brucellosis, botulism, cat scratch disease, tuberculosis, salmonellosis, staphylococcal poisoning, tularemia, anthrax, leptospirosis). Parasitic diseases (toxoplasmosis, giardiasis, sarcocystosis, scabies, toxocariasis, trichinosis, human taeniasis caused by taenia saginata or taenia solium, echinococcosis, ascariasis). Fungal diseases (microsporosis, trichophytosis, systemic fungal infections: histoplasmosis, aspergillosis, cryptococcosis, sporotrichosis) Currently emerging zoonosis. The possibility of using zoonotic diseases as a biological weapon by terrorists. |
| Planned didactic forms/activities/methods | Didactic methods: lectures, auditory classes, clinical training, consultations, reading the recommended literature, preparation for classes, assessment |

| **Name of the programme module** | **Pathomorphology** |
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| Programme module type | Obligatory |
| Year of studies for a given | IV |
| Term for a given field | VII |
| ECTS credits together with contact/no contact hours division | 4 (2.5/1.5) |
| A unit providing the course | Department of Pathological Anatomy |
| Module objective | The aim of education in the second semester is familiarising students with methods of performing an autopsy in different companion species and the skill of macroscopic and microscopic identification of morphological changes occurring in the body of an animal in the course of a disease. |
| Educational results<br>Content of the programme module – a concise description (about 100 words).<br>Planned didactic forms/activities/methods | Knowledge: A student who has completed the module:<br>Knows the types of macroscopic pathological changes and their images, types of autopsy techniques and diagnosis used in pathomorphology.<br>Knows the causes and cause and effect relationship between microscopic and macroscopic image of pathomorphological changes, as well as the cause and effect relationship between pathomorphological changes and their factors.<br>Knows the indications for performing additional tests in the process of selecting pets. |
| | Skills: A student who has completed the module:<br>Is able to carry out the autopsy of companion animals and to collect and preserve samples for additional (microbiological, histopathological, toxicological, etc.) tests.<br>Identifies, describes and names anatomo-pathological changes in accordance with Polish and Latin terminology and interprets anatomo-pathological changes in regard to medical history data, clinical and laboratory test results; formulates a pathomorphological diagnosis and takes the elements of differential diagnosis into account in the case of infectious diseases.<br>Is able to specify the pathomechanism and the cause of death and prepares an autopsy report. |
| | Social competencies: a student who has completed the module:<br>Shows responsibility for the decisions taken in relation to the statements on the causes of disease and death in animals.<br>Is aware of the dangers resulting from contact with the body of a dead animal and biological samples. |
| Contents of the education module | System pathology in regard to malformations, regressive changes, inflammation, circulatory disorders, progressive changes and neoplasia occurring in the following systems: Pathology of the gastrointestinal tract – oral cavity and the oesophagus, forestomachs and proper stomach, small and large intestines, liver, pancreas.<br>Pathology of the respiratory system – upper respiratory tract: nasal cavity, paranasal sinuses, throat, larynx, trachea, and pulmonary pathology. Pathology of the circulatory system: cardiac pathology, vascular pathology. Pathology of the genitourinary system – the consequences of damaged kidneys, nephritis, pathology of the urine transportation system, pathology of the ovaries and the uterus, pathology of male genitals. |
| Planned didactic forms/activities/methods | Lectures, demonstration, discussion, practical classes, exercises with the use of the microscope, performing an autopsy in different animal species, individual consultations |

| **Name of the programme module** | **Hygiene of food-animals and meat 1** |
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| Programme module type | Obligatory |
| Year of studies for a given field | IV |
| Term for a given field | VII |
| ECTS credits together with contact/no contact hours division | 4 (2.1/1.9) |
| A unit providing the course | Department of Food Hygiene of Animal Origin |
| Module objective | Students acquire the knowledge and skills in the field of: a) official supervision over the slaughter of food animals and the processing of carcase from these animals, b) ante-mortem examination of food |

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| | animals, as well as the sanitary and veterinary macroscopic examination of meat |
| Educational results | Knowledge: The knowledge of the principles of supervision over the slaughter of food animals, as well as the techniques of ante-mortem examination of food animals, the macroscopic examination of meat pursuant to the applicable legal regulations, to the extent necessary to fulfil the duties of sanitary and veterinary supervision. Understanding of the functioning principles of meat safety, and quality assurance systems on every stage of the food chain. Knowledge of the organs and muscle tissue properties, as well as their post-mortem changes |
| | Skills: The ability to interpret and apply suitable regulations of the food law while fulfilling the duties of sanitary and veterinary supervision over the slaughter of food animal. The ability to conduct an ante and post-mortem examination of food animals and their meat. The ability to properly describe and verify the procedures of the HACCP system at the stage of food animal slaughter. |
| | Social competence: The ability to identify and resolve dilemmas connected with the performance of supervision and the ability to formulate opinions regarding the activity performed correctly. Awareness of the responsibility for consumer safety in regards to the supervision, as well as the need for targeted further education and self-improvement. |
| Content of the programme module | The essence of the 'Hygiene of food animals and meat' programme module is to acquaint students with: a) the principles of official supervision over the process of food animal slaughter, and the competence of the official doctor performing the supervision pursuant to the applicable legal provisions, b) practical aspects of the ante- and post-mortem examination of food animals with a special reference to the macroscopic examination c) the technology of food animal slaughter, d) the HACCP system in the processing line of the slaughter, e) safety criteria, appropriate nutritional value and the organoleptic quality of meat. |
| Planned didactic forms/actions/methods | Lectures, laboratory classes, field classes in a slaughterhouse |

| **Name of the programme module** | **Equine diseases. Block I** |
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| Programme module type | obligatory |
| Year of studies for a given | IV |
| Term for a given field | VII |
| ECTS credits together with contact/no contact hours division | 6.0 (3.0/3.0) |
| A unit providing the course | Department of Epizootiology and Clinic of Infectious Diseases, Faculty of Veterinary Medicine, University of Life Sciences in Lublin, Poland Department and Clinic of Internal Diseases of Animals, Sub-Department of Internal Diseases of Farm Animals and Horses, Faculty of Veterinary Medicine, University of Life Sciences in Lublin, Poland |
| Module objective | Conveying knowledge that is required to perform the occupation of a veterinary doctor, including the knowledge of etiology, epidemiology, pathogenesis, diagnosis, treatment and prevention of equine infectious and non-infectious diseases, and principles of administrative procedure in the case the of suspicion or identification of compulsory notifiable diseases |
| Educational results | Knowledge: Specifies, describes and interprets clinical symptoms, causes and anatomo-pathological changes in specific, infectious and non-infectious disease entities. Understands the pathogenesis of infectious and non-infectious diseases and is familiar with principles for their diagnosis, therapy and prevention |
| | Skills: The student is able to carry out epizootic investigation, and clinical and additional tests for the diagnosis of infectious and non-infectious equine diseases in single animals and in a group of animals. Is able to carry out veterinary medical procedures that are suitable for the management of infectious and non-infectious equine diseases in single animals and in a group of animals. Takes appropriate course of action in the case of the identification of a compulsory notifiable disease |
| | Social competencies: The student observes the principles of professional ethics, develops the habit of lifelong knowledge and skill building and shows the skills of effective interpersonal communication and the skill of taking action under uncertain and stressful conditions. |
| Content of the programme module | The programme of lectures and practical classes in equine diseases Block I comprises of the etiology, epidemiology, pathogenesis, clinical symptoms, pathological changes, diagnosis, differential diagnosis, treatment, prevention and control of infectious diseases, including: African horse sickness, equine infectious anaemia, equine viral arteritis, contagious equine metritis, salmonellosis, herpes infection (EHV1, EHV4, EHV3), influenza, influenza-like illness, infectious lymphangitis, glanders, strangles, West Nile fever, infectious encephalitis and myelitis, tetanus, infectious lung disease of foals, neonatal diarrhoea, sepsis, Rhodococcus equi infection and etiopathogenesis, symptomatology, diagnosis, differential diagnosis, prevention and treatment of non-infectious cutaneous diseases and diseases related to non-infectious cutaneous diseases, respiratory, circulatory and excretory diseases, diseases of the nervous system, laminitis, deficiency diseases, diseases of foals, myopathy, water-electrolyte balance and its disorders, non-surgical management of gripes, procedures for the intensive therapy of equine internal diseases, metabolic disorders, selected issues regarding equine endocrinology (diabetes, thyroid diseases, diabetes insipidus, pituitary dwarfism, metabolic syndrome), laboratory diagnostics of disorders of organs and systems |
| Planned didactic forms/activities/methods | Didactic methods: lectures, auditory classes, laboratory and field classes, demonstrations, clinical training, consultations |

**Eighth semester modules**

| **Name of the programme module** | **Pathomorphology** |
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| Programme module type | Obligatory |
| Year of the study programme | IV |
| Semester of the study programme | VIII |
| ECTS credits together with contact/no contact hours division | 3 (2/1) |
| A unit providing the course | Department of Pathological Anatomy |
| Module objective | To master the knowledge of the formation of pathological changes and the skills of the macroscopic and microscopic identification of morphological changes that occur in the body of an animal during the course of a disease. To teach students the skills of: performing an autopsy, collecting samples from a dead animal for laboratory tests, collecting samples from a living animal for the purposes of pathomorphological evaluation, carrying out the microscopic evaluation of histopathological preparations. |
| Educational results | Knowledge: a student who has completed the module:<br>Knows the types of macro- and microscopic pathological changes occurring in particular organs and systems of an animal's body. Knows the causes and cause and effect relationship between pathomorphological changes and their factors.<br>Knows indications for additional tests that can supplement an autopsy diagnosis. |
| | Skills: a student who has completed the module: Is able to carry out the autopsy of companion animals, and to collect and preserve samples for additional (microbiological, histopathological, toxicological, etc.) tests. Identifies, describes and names anatomo-pathological changes in accordance with Polish and Latin terminology and interprets anatomo-pathological changes in regard to interview data, clinical and laboratory test results; formulates a pathomorphological diagnosis and takes the elements of differential diagnosis into account in the case of infectious diseases. Is able to specify the pathomechanism and the cause of death and develops an autopsy report. |
| | Social competencies: a student who has completed the module:<br>Shows responsibility for decisions made regarding statements on the cause of diseases and death in animals.<br>Is aware of the dangers resulting from contact with the body of a dead animal and biological samples. |
| Content of the programme module | System pathology in regard to malformations, regressive changes, inflammation, circulatory disorders, progressive changes and neoplasms occurring in the following systems: pathology of the nervous system: brain and cerebellum, peripheral nervous system; pathology of the endocrine and immune system: pituitary gland, thyroid, adrenal glands, thymus, lymph nodes; pathology of the locomotor system: muscles, bones and joints; pathology of the integumentary system. |
| Planned didactic forms/activities/methods | Lectures, demonstration, discussion, practical classes, exercises with the use of a microscope, performing an autopsy in different animal species, individual consultations |

| **Name of the programme module** | **Hygiene of food-animals and meat 2** |
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| Programme module type | Obligatory |
| Year of studies for a given field | IV |
| Term for a given field | VIII |
| ECTS credits together with contact/no contact hours division | 4 (2.88/1.12) |
| A unit providing the course | Department of Food Hygiene of Animal Origin |
| Module objective | Acquainting students with the knowledge and skills of:<br>a) additional sanitary and veterinary inspection of meat, b) sanitary and veterinary labelling of meat, c) handling meat that is unfit for consumption and meat that comes from areas that are subject to limitations |
| Educational results | Knowledge: The knowledge of the principles of supervision over the slaughter of food animals and methods of laboratory inspection, to the extent necessary to fulfil the duties of sanitary and veterinary supervision. Understanding the functioning principles of meat safety, and quality assurance systems at every stage of the food chain. Knowledge of organ and muscle tissue properties, as well as their post-mortem changes. |
| | Skills: The ability to interpret and apply suitable regulations of the food law while fulfilling the duties of sanitary and veterinary supervision over the slaughter of food animals. The ability to conduct suitable laboratory tests of meat obtained from food animals and to issue a sanitary and veterinary certificate for meat. The ability to properly describe and verify the procedures of the HACCP system at the stage of post-mortem processing and cooling of meat obtained from food animals. |
| | Social competence: The ability to identify and resolve the dilemmas connected with supervision correctly, and the ability to formulate opinions regarding the activities performed. Awareness of the responsibility for consumer safety in regards to supervision, as well as the need for targeted further education and self-improvement. |
| Content of the programme module | The essence of the 'Hygiene of food animals and meat' programme module is to acquaint students with: a) the principles of official supervision over the process of food animal slaughter and the competence of the official doctor performing the supervision pursuant to applicable legal provisions, b) practical aspects of additional tests and physical and chemical tests that enable issuance of a correct |

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| | meat evaluation, c) cooling and storing technology for meat from food animals d) the HACCP system in meat storage, e) safety criteria, appropriate nutritional value and the organoleptic quality of meat. |
| Planned didactic forms/actions/methods | Lectures, laboratory classes, field classes in a slaughterhouse |

| **Name of the programme module** | **Fish diseases** |
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| Programme module type | Obligatory |
| Year of studies for a given | IV |
| Term for a given field | VIII |
| ECTS credits together with contact/no contact hours | 3 (2/1) |
| A unit providing the course | Institute of Fish Diseases and Biology, Institute of Biological Bases of Animal Diseases |
| Module objective | Brief discussion of the basic farming principles for common Polish species of farmed fish: carp and rainbow trout. Knowledge of fish immunology and the impact of the farming environmental and handling stress on defence mechanisms. Discussion of diseases typical of these species that are significant from the economic and sanitary point of view. Presentation of the principles of modern diagnostics, as well as therapies and prophylaxis of environmental, parasitic, bacterial, fungal and viral diseases. Instilling awareness of sanitary and veterinary procedures in regards to routine disease control. |
| Educational results | Knowledge: Acquaintance with basic principles of carp and trout farming in Poland and the threats to fish health arising from mass production. Knowledge of basic principles of sanitary and veterinary supervision over a fish farm. Knowledge of the most common disease-causing environmental factors of carp and trout farming. Knowledge of the etiology and pathogenesis of bacteria, fungi and viruses that cause diseases in fish. Knowledge of the principles of conduct in the course of obtaining the status of being free from virus diseases. Knowledge of the most common parasitic invasions in fish. Knowledge of parasites that are harmful to human health. Knowledge of diagnostic methods, basic principles of therapy and prophylaxis of fish diseases. Knowledge of how long the effects of drugs used in fish last in the aquatic environment. |
| | Skills: The ability to carry out an examination and asses the health of fish in order to, issue a health certificate required for fish sale among others. The ability to monitor the status of fish health in a fish farm and take the required actions in the case of a disease that needs to be reported to the veterinary administration. The ability to diagnose a given disease entity with reference to differential diagnostics. The ability to use appropriate treatment and advise a fish farm to take appropriate prophylactic measures. |
| | Social competence: The ability to act autonomously and take responsibility for decisions and their effects, with particular attention to those which affect fish and human health. The ability to develop teamwork skills; awareness of the need for targeted further education and self-improvement . |
| Content of the programme module | Principles of sanitary and veterinary care provision for a fish farm. Sanitary and veterinary requirements connected to farming and handling fish. Etiology, pathogenesis, clinical symptoms anatomo-pathological lesions in the diseases of carp and trout. Diagnosis, treatment and prophylaxis of fish diseases. Immunoprophylaxis in fish farming. Diseases subject to compulsory treatment – legal provisions on the treatment of communicable diseases. |
| Planned didactic forms/actions/methods | Laboratory classes, lectures, self-study materials on the unit's website. |

| **Name of the programme module** | **Equine diseases. Block II** |
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| Programme module type | Obligatory |
| Year of studies for a given | IV |
| Term for a given field | VIII |
| ECTS credits together with contact/no contact hours division | 10 ( 5.6/4.4) |
| A unit providing the course | Sub-Department of Andrology and Biotechnology, Department and Clinic of Animal Reproduction, Department and Clinic of Animal Surgery, Department and Clinic of Internal Diseases of Animals, Sub-Department of Internal Diseases of Farm Animals and Horses, Faculty of Veterinary Medicine, University of Life Sciences in Lublin, Poland |
| Module objective | The aim of the module is to familiarise students with the specificity of equine reproduction, diagnosis and treatment of reproductive disorders and equine diseases with regard to surgery, orthopaedics, ophthalmology, dentistry and dermatology |

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| Educational results | Knowledge:<br>Is familiar with the regulation of the reproductive cycle of a mare and the specificity of a mare's labour; Has the knowledge regarding the diagnosis and treatment of reproductive disorders in horses; Has the knowledge of the most common surgical, orthopaedic, ophthalmic and dental diseases of horses in Poland; Knows the principles of diagnosis and treatment in the fields of surgery, orthopaedics, ophthalmology and dentistry. Has knowledge of infectious and non-infectious factors for cutaneous lesions.<br>Knows methods for the diagnosis of cutaneous diseases. |
| | Skills: the student is able to carry out an interview, a clinical examination for fertility, and the procedure of artificial insemination; Is able to make a diagnosis of reproductive disorders in horses and implement an appropriate treatment course<br>Is able to perform basic obstetric and gynaecological procedures, provide a mare with non-surgical and surgical assistance during labour.Is able to carry out a clinical examination in the cases of diseases requiring surgical procedures and specify what additional tests should be performed.Is able to assist in surgical procedures and monitor the patient during surgery. Is able to implement effective methods for the treatment of skin conditions. |
| | Social competencies: the student is able to manage equine reproduction and is aware of the effects of particular decisions. Is aware of the professional responsibility for the maintenance and health of the equine population in Poland in regards to recreation and sports, is able to cooperate and work in a group, and has aspirations for lifelong learning. |
| Content of the programme module | Contents of lectures and classes in "Equine diseases. Block II" relate to: the neurohormonal regulation of the oestrous cycle, pregnancy and lactation, and related disorders (ovarian pathology and inflammatory conditions of the uterus); development and identification of pregnancy in a mare in regard to the physiology and pathology of pregnancy, and disorders of the postpartum period; neonatal care and the evaluation of the health status in the neonatal and postnatal period; application of selected biotechnical methods in equine reproduction; clinical examination of the reproductive system of a mare, diagnosis of conditions, management of difficult labour with the use of correction, fetotomy, a Caesarean section, operative treatment of postpartum perineal trauma; hormonal management of cyclical sexual activity; preparation of semen, carrying out artificial insemination, pregnancy diagnosis, management of a twin pregnancy; procedures for dental and periodontal diseases, ophthalmic diseases, paranasal sinus diseases, laryngeal and tracheal diseases, surgical diseases of air sacs, surgical treatment of gastrointestinal obstruction, surgical treatment of hernias, castration of stallions (cryptorchidism), cystolithiasis and urethrolithiasis, rectal prolapse, treatment of congenital and acquired hernias, endoscopy of the upper airways, treatment of t diseases of the back and withers, treatment of injuries of the integumentary system, diagnosis and treatment of various types of lameness, principles of orthopaedic shoeing.<br>The contents also includes the following topic areas of dermatology: infectious and non-infectious cutaneous diseases, principles of clinical and laboratory diagnostics, principles of general and local therapy. |
| Planned didactic forms/activities/methods | The module comprises of the following didactic methods: lectures, auditory classes, laboratory and field classes and practical demonstrations. |

| **Name of the programme module** | **Diseases of fur animals** |
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| Programme module type | Obligatory |
| Year of studies for a given | IV |
| Term for a given field | VIII |
| ECTS credits together with contact/no contact hours division | 2.0 (1.2/0.8) |
| A unit providing the course | Department of Epizootiology and Clinic of Infectious Diseases, Faculty of Veterinary Medicine, University of Life Sciences in Lublin, Poland |
| Module objective | Conveying knowledge that is required to perform the occupation of a veterinary doctor that allows students to understand: the principles of breeding and feeding fur animals, the general biological characteristics of fur animals species, with elements of population genetics and molecular biology, basics of physiology, surgical procedures, obstetrics and diseases of the perinatal period, artificial insemination of fur animals, etiology, epidemiology, pathogenesis, diagnosis, prevention and therapy of infectious, non-infectious and parasitic diseases, and procedures implemented in case a compulsory notifiable disease is identified, immunoprophylaxis and immunotherapy of infectious diseases, and veterinary medical procedures in fur animal farms |
| Educational results | Knowledge: Specifying, describing and interpreting clinical symptoms, causes and anatomo-pathological changes in specific infectious disease entities, of, non-infectious and parasitic etiology. Understanding the pathogenesis of specific disease entities and familiarisation with principles for diagnosis and therapy. Knowledge of the principles of general prevention and the prevention of specific disease entities causing the greatest economic losses in highly productive fur animal farms (including the breeding of both carnivorous and herbivirous fur animals). Knowledge of the methods of modern fur animal farming with particular respect to the welfare of fur animals and production requirements |

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| | Skills: the student is able to carry out epizootic investigation, including an interview and clinical and additional tests, in order to diagnose an infectious or parasitic disease in individuals and farming conditions, specifically including the farming of foxes, minks and rabbits, and to choose suitable treatment procedures; Is able to carry out antiepizootic procedures that are suitable for the management of infectious diseases in single fur animals and in a fur animal farm; Takes an appropriate course of action a compulsory notifiable disease is identified; Knows the general principles of feeding fur animals, particularly the food ration balance and its supplementation, and issues related to non-infectious diseases; Knows issues regarding the perinatal period, obstetrics and reproduction of fur animals. |
| | Social competencies: Observes the principles of professional ethics; Developed the habit of lifelong knowledge and skill building; Shows the skill of effective interpersonal communication and action under uncertain and stressful conditions |
| Content of the programme module | The programme of lectures and practical classes in diseases of fur animals comprise the etiology, epidemiology, pathogenesis, clinical symptoms, anatomo-pathological changes, collection of samples for laboratory testing, diagnosis, differential diagnosis, prevention, treatment and control of the following disease entities: 1. Carnivorous fur animals (foxes, minks, ferrets). Basics of genetics and breeding. General and specific prevention in fox and mink breeding. Veterinary medical procedures for fox and mink farms (management of compulsory notifiable diseases, protection of farm animals, vaccination schedules, veterinary medical procedures for the identification of diseases and their spreading roots). Basic surgical procedures, and obstetrics and artificial insemination of foxes. Non-infectious diseases and intoxication. Invasive diseases. Mycoses and mycotoxicoses. Prevention of zoonosis transmitted by minks and foxes<br>II. Herbivorous fur animals (rabbits, chinchillas, coypus). An outline of the anatomy of rabbits and chinchillas. Physiology of rabbits and chinchillas with elements of pathophysiology.<br>The principles of breeding rabbits and chinchillas. Infectious and invasive diseases of rabbits<br>Infectious and invasive diseases of chinchillas. Non-infectious diseases and intoxications |
| Planned didactic forms/activities/methods | Didactic methods: lectures, auditory classes, laboratory and field classes, clinical training, consultations, reading recommended literature, preparation for classes, assessment |

| **Name of the programme module** | **Diseases of farm animals. Block I** |
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| Programme module type | obligatory |
| Year of studies for a given | IV |
| Term for a given field | VIII |
| ECTS credits together with contact/no contact hours division | 7.0 (4.0/3.0) |
| A unit providing the course | Department and Clinic of Internal Diseases of Animals, Sub-Department of Internal Diseases of Farm Animals and Horses. |
| Module objective | Conveying knowledge that is required to perform the occupation of a veterinary doctor, familiarising students with the clinical picture of diseases, principles for therapeutic and preventive management, mechanisms of formation and development of diseases, allowing students to acquire the abilities of diagnosis, differentiation, prevention and treatment of farm animals, familiarising students with the specificity of reproduction of farm animals in the scope of gynecology and obstetrics, neonatal care, and diagnosis, treatment and prevention of mammary gland diseases |
| Educational results | Knowledge: Specifying, describing and interpreting clinical symptoms, causes and anatomo-pathological changes in specific, infectious and non-infectious disease entities. Understanding the pathogenesis of infectious and non-infectious diseases and the familiarisation with principles of diagnosis, therapy and prevention. |
| | Skills: the student is able to perform an interview and clinical examination, and interpret results of laboratory and additional tests, carry out the examination of a neonate and milk; is able to carry out a gynaecological and obstetric examination, and the examination of a neonate and the mammary gland of farm animals; is able to evaluate the health status of an animal and apply suitable preventive and therapeutic procedures in an individual patient and in herds. Is able to take an appropriate course of action to resolve problems related to reproduction, neonates and the mammary gland of farm animals. Shows the skill of monitoring the reproduction and health status of a large herd and taking appropriate action when a compulsory notifiable disease is identified. |
| | Social competencies: The student observes the principles of professional ethics; Developed the habit of lifelong knowledge and skill building; Shows the skills of effective interpersonal communication and action under uncertain and stressful conditions |
| Content of the programme module | The programme of lectures and practical classes in diseases of farm animals. Block I contains the etiology, epidemiology, pathogenesis, clinical symptoms, pathological changes, diagnosis, differential diagnosis, treatment, prevention and control of non-infectious diseases, including: non-infectious cutaneous diseases and related conditions, respiratory, circulatory and excretory diseases, diseases of the nervous system, laminitis, deficiency diseases, metabolic diseases and myopathy, water-electrolyte balance and its disorders, selected issues regarding endocrinology, laboratory diagnostics of organ and system disorders ; diagnosis of the oestrous cycle phase and pregnancy; diagnosis, differentiation, prevention and treatment of ovarian, uterine and vaginal diseases; reproduction disorders; the principles and mistakes of herd management, disorders of animals due to the influence of technology adopted incorrectly, principles for the development and use of metabolic profiles |
| Planned didactic | Didactic methods: lectures, auditory classes, laboratory and field classes, demonstrations, clinical |

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| forms/activities/methods | training, consultations |

| **Name of the programme module** | **Clinical training 1 (after the VIII term)** |
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| Programme module type | obligatory |
| Programme module level | Integrated graduate studies (MA, MS) |
| Year of studies for a given field | IV |
| Term for a given field | after the VIII term |
| ECTS credits together with contact/no contact hours division | 4 (3/1) |
| A unit providing the course | Department of Veterinary Medicine, University of Life Sciences of Lublin |
| Module objective | The aim of the practice is to acquaint students with the tasks, organisation, and functions of a veterinary clinic and broaden practical knowledge of clinical and laboratory diagnostics, veterinary surgery, as well as internal diseases of farm animals. Should the doctor overseeing the students' training deem it appropriate, radiology. |
| Educational results | Knowledge: The necessary knowledge for: conducting clinical examinations of animals according to the examination plan, an analysis of clinical symptoms, diagnosing and taking therapeutic or prophylactic measures. Knowledge of principles and practical aspects of veterinary procedures in animal clinics |
| | Skills: The ability to complete a medical history, conduct a clinical examination, analyse clinical symptoms and laboratory results, diagnose, and take therapeutic and prophylactic measures. The ability to apply anaesthesia, the rules of asepsis and antisepsis and to assist in basic surgical procedures performed on animals. The ability to select and apply laboratory techniques, take samples for examination and analyse and interpret the results of the examination. The ability to prepare unambiguous case descriptions and keep records pursuant to the applicable law, in a form that is clear to both the owner and other doctors. |
| | Social competence: The ability to form independent opinions, especially in regards to diagnostics and therapy of animal diseases. The ability to cooperate and work in groups; a sense of responsibility for other team members and patients. Awareness of the need for targeted further education and self-improvement in regard to their occupation. |
| Content of the programme module | Medical records: Acquainting with medical forms used at the clinic (case history, admission record, electronic registry of admissions and treatment). Organisation and administration: Acquainting with the principles of work organisation in the place of training. Acquainting with the patient registration and the registry system (admission record, electronic registry of admissions and treatment). Acquainting with the methods of supplying and general rules of maintaining medicine and material storage (collection, distribution, storage and registry of medicine and materials). Internal diseases: Conducting basic diagnostic activities. The ability to perform simple procedures (hypodermic intramuscular and intravenous injections, pleural cavity and peritoneum puncture, bladder catheterization, prostate infusions). Acquainting with medication most frequently administered in clinical practice. Results of additional examinations and their interpretation (morphological tests of blood and urine, biochemical tests of blood, gasometry, EKG), Acquainting with methods of treatment for most frequently occurring internal conditions. Veterinarian surgery: general and regional anaesthesia, applying wound dressing, performing simple surgical procedures, assisting in small surgical procedures (in general surgery, ophthalmology, orthopaedics and stomatology). Radiology: principles of preparing a patient for radiological or ultrasonographic examination, interpretation of x-ray and ultrasonographic images |
| Planned didactic forms/actions/methods | Completing medical histories and conducting clinical examinations, discussions, reports of medical cases in the Practice Journal |

| **Name of the programme module** | **Practice in Veterinary Inspection** |
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| Programme module type | Obligatory |
| Year of studies for a given field | IV |
| Term for a given field | after the VIII term |
| ECTS credits together with contact/no contact hours division | 2 (1.5/0.5) |
| A unit providing the course | Department of Veterinary Medicine, University of Life Sciences Lublin |
| Module objective | The aim of the training is for students to acquire knowledge and skills in the field of: a) official supervision over the slaughter of food animals and the processing of carcase from these animals, b) performance of an official sanitary and veterinary inspection of food animals and their meat. |

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| Educational results | Knowledge: Students learn the principles of supervision over the slaughter of food animals, as well as ante-mortem and post-mortem examination techniques of food animals, together with laboratory testing methods pursuant to the applicable legal regulations, in order to issue a sanitary and veterinary assessment that is correct. Students learn slaughter technologies and post-mortem processing of food animals; they understand the function of the systems that ensure safety and quality of meat. |
| | Skills: The ability to implement the procedures of official control over animal slaughter. The ability to perform an ante- and post-mortem inspection (together with an additional suitable inspection) of food animals and their meat and issue a proper sanitary and veterinary evaluation. Knowledge of record keeping in regards to inspection of food animals and meat. |
| | Social competence: Awareness of the responsibility for the consumer's safety in regards to the supervision conducted. The ability to work in a team. Understanding the need for continuing education in connection with the progress of science and technological advancement. |
| Content of the programme module | The essence of the 'Practice in Veterinary Inspection' programme module is to acquaint students with: a) technology of food animal slaughter and the competence of the official doctor performing the supervision pursuant to the applicable legal provisions, b) practical aspects of the ante- and post-mortem examination of food animals with a special reference to the macroscopic inspection and additional inspections, c) the HACCP system in the processing line of slaughter with control over the system, d) principles of record keeping |
| Planned didactic forms/actions/methods | On going and periodic inspections (with the supervision of the official veterinary doctor) in slaughterhouses, discussions, keeping records of all activities in the Practice Journal |

**Ninth semester modules**

| **Name of the programme module** | **Diseases of farm animals. Block II** |
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| Programme module type | obligatory |
| Year of the study programme | V |
| Semester of the study programme | IX |
| ECTS credits together with contact/no contact hours division | 10 (6.0/4.0) |
| A unit providing the course | Department and Clinic of Animal Reproduction, Department and Clinic of Animal Surgery, Department of Epizootiology and Clinic of Infectious Diseases, Faculty of Veterinary Medicine, University of Life Sciences in Lublin, Poland |
| Module objective | The aim of the module is to familiarise students with the specificity of the reproduction of farm animals, diagnosis and treatment of fertility disorders and diseases of farm animals with the consideration of surgery, orthopaedics, ophthalmology, dentistry and dermatology. |
| Educational results | Knowledge: the student is familiarized with the regulation of the reproductive cycle of farm animals. Has knowledge regarding the diagnosis and treatment of fertility disorders in farm animals. Has knowledge of the most common surgical, orthopaedic, ophthalmic and dental infectious diseases of farm animals in Poland.<br>Knows the principles of diagnosis and treatment in the field of surgery, orthopaedics, ophthalmology, dentistry and infectious diseases of farm animals. Has the knowledge of infectious and non-infectious factors for cutaneous lesions. Knows methods for the diagnosis of cutaneous diseases. Understands the pathogenesis of infectious diseases and is familiar with principles for their diagnosis, therapy and prevention. |
| | Skills: Is able to carry out an interview, clinical examination for fertility, and the procedure of artificial insemination. Is able to make a diagnosis for reproductive disorders in farm animals and implement an appropriate course of treatment. Is able to perform basic obstetric and gynaecological procedures, provide farm animals with non-surgical and surgical assistance during labour.<br>Is able to carry out a clinical examination in the case of diseases requiring surgical procedures and specify additional tests that should be performed. Is able to assist in surgical procedures and monitor the patient during surgery. Is able to implement effective methods for the treatment of skin conditions. Is able to carry out epizootic investigation, and clinical and additional tests for the diagnosis of infectious diseases in individuals and in a group of animals. |
| | Social competencies: Is able to manage the reproduction of farm animals and is aware of the effects of particular decisions. Is aware of the professional responsibility for the maintenance and health of animals under veterinary care, is able to cooperate and work in a group, and has aspirations for lifelong learning. |

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| Content of the programme module | Contents of lectures and classes in "Diseases of farm animals. Block II" relate to: the neurohormonal regulation of the oestrus cycle, pregnancy and lactation and related disorders (ovarian pathology and inflammatory conditions of the uterus); development and identification of pregnancy in regard to the physiology and pathology of pregnancy, and disorders of the postpartum period; neonatal care and the evaluation of the health status in the neonatal and postnatal period; application of selected biotechnical methods in reproduction;<br>clinical examination of the reproductive system of farm animals, diagnosis of conditions, management of difficult labour, treatment of postpartum perineal trauma; hormonal management of cyclical sexual activity; preparation of semen, carrying out artificial insemination, pregnancy diagnosis, management of twin pregnancy;<br>procedures for dental and periodontal diseases, ophthalmic diseases, laryngeal and tracheal diseases, surgical treatment of the gastrointestinal tract, surgical treatment of hernias, castration (cryptorchidism), cystolithiasis, endoscopy of the upper airways, treatment of injuries of the integumentary system, diagnosis and treatment of various types of lameness. The contents also include: etiology, epidemiology, pathogenesis, clinical symptoms, pathological changes, diagnosis, differential diagnosis, treatment, prevention and control of infectious diseases of farm animals. |
| Planned didactic forms/activities/methods | The module comprises the following didactic methods: lectures, auditory classes, laboratory and field classes and practical demonstrations. |

| **Name of the programme module** | **Veterinary dietetics** |
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| Programme module type | Obligatory |
| Year of the study programme | V |
| Semester of the study programme | IX |
| ECTS credits together with contact/no contact hours division | 1 (1.0/0) |
| A unit providing the course | Department and Clinic of Internal Diseases of Animals |
| Module objective | The aim of the module is to teach students the general knowledge and principles of dietary management of sick animals and the selection of appropriate food to support their pharmacological treatment |
| Educational results | Knowledge: The student has basic knowledge regarding the general nutrition of sick animals; shows the knowledge of basic principles of enteral and parenteral assisted feeding; is able to adjust the diet in farm animal diseases; has in-depth knowledge of nutrition of elderly and neonatal animals |
| | Skills: The student possesses the skill of analysing and using particular nutrients in dietary food for animals; is able to analyse information contained on food labels and select food that is appropriate in the treatment of a particular disease; is able to analyse and modify an animal's diet regardless of the animal's disease, and during the recovery period; is able to compose feed that is appropriate to a particular animal disease without the help of others |
| | Social competencies: the student is aware that lifelong learning and self-improvement is essential to the profession; is able to work in a group; can correctly identify and resolve dilemmas related to the profession; is aware of the significance of social, professional and ethical responsibility for high-quality food production, animal welfare, environmental development and environmental status |
| Content of the programme module | Lectures include: the general principles for the nutrition of sick animals; selection of suitable nutrients to create a diet that supports pharmacological treatment; nutrition principles in particular system diseases; the general principles for the selection of dietary food for the recovery period; compulsory and artificial nutrition of sick animals.<br>Classes include: composing feed rations in the most common diseases (such as diseases of the digestive, respiratory, circulatory, urinary and nervous systems); selection of therapeutic diets for the most common diseases in dogs, cats, horses and farm animals; application of dietary food in an animal's recovery period. |
| Planned didactic forms/activities/methods | Lectures, discussion with students, practical classes, consultations, examination |

| **Name of the programme module** | **Diseases of birds 1** |
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| Programme module type | Obligatory |
| Year of studies for a given field | V |
| Term for a given field | IX |
| ECTS credits together with contact/no contact hours division | 4 (2.8/1.2) |
| A unit providing the course | Department of Veterinary Prevention and Diseases of Birds |
| Module objective | To teach students the etiology, pathogenesis of communicable, invasive, poisoning and deficiency diseases in birds, procedures for treatment of bird diseases subject to official control in the EU countries. To teach students the specific and non-specific prophylaxis of poultry diseases. |
| Educational results | Knowledge: to knows bird diseases entities and their etiological factors, course, clinical symptoms and anatomo-pathological changes. Characterise laboratory methods, techniques and materials used in disease diagnostics. Understand instructions concerning bird disease prevention programme drafting, and the application of medicinal products in the treatment of bird diseases. |

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| | Skills: Can collect information on a case, perform a clinical and anatomo-pathological examination of a bird. Can interpret results of additional (laboratory) tests and use regulations concerning the control of poultry contagious diseases. |
| | Social skills: Awareness of the risk for human health resulting from contact with a diseased animal (bird) and can share knowledge with academic researchers. Awareness of the social, professional and ethical responsibility for diagnostic and treatment actions taken on a living organism. Can provide information on necessary procedures and implemented therapy in a clear and straightforward fashion. |
| Contents of the education module | Anatomy, physiology, conditions of keeping particular species of poultry, physiology and pathology of brood. Diseases resulting from improper poultry handling. Genetic factors that influence the health of birds. Viral, bacterial, and parasitic factors posing risks in poultry pathology – discussion of individual diseases, including their etiology, course of the disease, clinical symptoms and anatomo-pathological changes. |
| Planned didactic forms/activities/methods | Lectures, multimedia presentations, films, mastering practical techniques of clinical and anatomo-pathological examinations, laboratory diagnostics of parasitic invasions and bacterial infections, discussions, laboratory class report |

| **Name of the programme module** | **Andrology and Artificial Insemination** |
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| Programme module type | Obligatory |
| Year of studies for a given | V |
| Term for a given field | IX |
| ECTS credits together with contact/no contact hours division | 2 (1.6/0.4) |
| A unit providing the course | Sub-Department of Andrology and Biotechnology, Department and Clinic of Animal Reproduction, Faculty of Veterinary Medicine, University of Life Sciences in Lublin, Poland |
| Module objective | The objective of the module is: to familiarise students with the physiological and pathological aspects of the male reproductive system function, and the interaction between the male reproductive system and other systems; allow students to acquire the skill of evaluating aspects and treating when necessary; familiarise students with modern biotechniques used in animal reproduction that are consistent with Polish and EU rules and regulations. |
| Educational results | Knowledge: the student has the knowledge of the structure, physiology and diseases of the male reproductive system with respect to specie specificity and the prevention, therapy and control of the diseases; is familiar with the techniques of collecting semen, the methods of artificial insemination of female farm and companion animals, and with other modern biotechnology methods used in animal reproduction; is familiar with currently binding legal rules and regulations regarding the collection, evaluation and marketing of biological materials (spermatozoa, embryos) and with sources of information on the subject; has the knowledge that is necessary to properly maintain documentation related to artificial insemination of female farm animals. |
| | Skills: possesses the skill of carrying out clinical examinations of the male reproductive system and is able to put the principles of therapy into practice; the student is able to evaluate the usefulness of a male for reproduction under particular conditions (mating areas, semen collection centres, harem mating, etc.); is able to collect semen from a dog and a ram and to evaluate its quality and usefulness in the context of further application or packing. |
| | Social skills: the student is able to act in accordance with the principles of veterinary deontology when selecting animals for reproduction, reducing the spread of genetic defects; is involved in lifelong learning, and shows kindness and professional competence towards the owners of animals undergoing treatment or artificial insemination and towards the Veterinary Inspection. |
| Content of the programme module | Contents of the lectures: hormonal regulation of the male reproductive system, disturbances in the structure of a spermatozoon and the composition of semen plasma in the context of sperm motility disorders and the loss of fertilization capability in regard to differences between particular species, the arrangement of natural mating, artificial insemination of farm animals in Poland as well as related EU directives, congenital and acquired diseases of the male reproductive system in farm, productive and companion animals and their treatment, legal regulations concerning the production, processing, storage and distribution of semen in Poland and the EU, and in countries outside the EU (an invited lecture).<br>Contents of the practical classes: structure of the male reproductive system (separate organs) and clinical aspects of structure differences between particular species, collection, macroscopic and microscopic evaluation of semen, andrological examination of the male (a specific clinical examination of the male reproductive system, per rectal examination and an additional ultrasonography of gonads, collection of fluids from a bull's preputial pouch, determination of the optimal time for mating, artificial insemination of female productive animals, farm animals and bitches, extenders and methods for packing and storing liquid and deep-frozen semen, embryo transfer (methods of superovulation), artificial insemination techniques. |
| Planned didactic forms/activities/methods | The module comprises the following didactic methods: lectures, practical classes, field classes, laboratory classes, demonstrations of methods of semen collection and artificial insemination |

| **Name of the programme module** | **Veterinary Prevention 1** |
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| Programme module type | Obligatory |
| Year of studies for a given field | 5 |
| Term for a given field | 9 |

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| ECTS credits together with contact/no contact hours division | 2 (1.1/0.9) |
| A unit providing the course | Institute of Biological Bases of Animal Diseases<br>Division of Veterinary Prevention and Diseases of Birds |
| Module objective | The aim of the module is the acquisition of skills that allow the evaluation of health in the population of animals that are diverse in terms of species and productivity, on the basis of epidemiological and production indicators. The evaluation of the significance of environmental factors for health, including the ability to identify and eliminate factors harmful for animals. Planning and implementing measures to tackle threats, improve health and increase flock productivity. Unaided preparation of prophylactic schemes and elimination of physically, chemically and biologically induced threats in animal populations. The evaluation of the efficiency of the implemented prophylactic schemes. |
| Educational results | Knowledge: Broad knowledge of basic concept categories and terminology used in veterinary prevention, as well as concepts with a direct reference to the practical implementation of knowledge on prevention. Knowledge of prophylactic scheme planning, and research tools used in immunology, , as well as basic technologies that take advantage of the latest scientific achievements. |
| | Skills: The ability to seek, comprehend, analyse and creatively implement the necessary information from various sources and in different forms, specific to veterinary prevention. The ability to interpret legal regulations regarding the prophylaxis of contagious diseases, as well as the ability to determine the essential requirements of quarantine, adaptation of animals, and the knowledge of rodent control, disinsection and disinfection. The ability to evaluate the microclimate, as well as the knowledge of measurement technology and its components. Development and implementation of prophylactic schemes specific to individual species of productive animals. |
| | Social competence: The ability to cooperate and work in a group assuming various roles. Awareness of the need for targeted further education and self-improvement. |
| Content of the programme module | Main reasons of economic losses in individual sectors of livestock production. Characteristics of the breeding environment; Impact of the environment on the occurrence of diseases; Basic information about the microclimate in buildings (temperature, humidity, cooling, air circulation, pollination, microflora, gas admixtures, lighting). Measuring techniques; Risk evaluation caused by air pollution. Prophylaxis of contagious diseases. Sanitary protection of boarders: international and domestic sanitary regulations regarding contagious diseases, obligatory and recommended preventive vaccination – prevention at a global, community, union, domestic, local structure and unit of livestock production levels. |
| Planned didactic forms/actions/methods | Lectures, tutorials, laboratory classes, field classes, |

| **Name of the programme module** | **Diseases of dogs and cats. Block I** |
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| Programme module type | Obligatory |
| Year of the study programme | V |
| Semester of the study programme | IX |
| ECTS credits together with contact/no contact hours division | 6 (4.0/2.0) |
| A unit providing the course | Department and Clinic of Internal Diseases of Animals, Department and Clinic of Animal Surgery |
| Module objective | The aim of the module is to: familiarise students with particular internal, surgical, orthopaedic, dental and ophthalmic diseases of dogs and cats, including the etiology, pathogenesis and clinical course of the diseases; teach students the methods of diagnosis, and surgical and non-surgical medical management of particular disease entities, as well as differential diagnosis, treatment and prevention of the disease entities; |
| Educational results | Knowledge: the student is familiar with the causes, pathogenesis, clinical symptoms, diagnostic methods and principles for the therapy and prevention of diseases of dogs and cats; has knowledge of current methods of therapeutic management, indications and contraindications for the use of particular drugs, particular methods for the prevention of the discussed diseases |
| | Skills: the student is able to describe the etiologic agents and pathogenesis of the discussed diseases of dogs and cats and uses the knowledge to carry out preventive, diagnostic and therapeutic procedures; is able to carry out an interview and an appropriate analysis of clinical symptoms; knows the principles for choosing and interpreting results of laboratory and additional tests, and is able to formulate a diagnosis and take an appropriate course of surgical and non-surgical treatment of dogs and cats. Is able to accurately communicate with other veterinary doctors and animal owners |
| | Social competencies: The student is aware of the significance of social and professional responsibility for public health protection; is aware of personal limitations and is able to use the advice and help of specialised units or experienced veterinary doctors in the scope of measures; understands that skill and knowledge building is a lifelong necessity |
| Content of the programme module | Etiology and pathogenesis of selected internal, surgical, orthopaedic, dental and ophthalmic diseases in dogs and cats. Methods for the management of patients and principles for the clinical examination of cats and dogs in the case(s) of: – internal respiratory, cardiovascular, blood and haematopoietic diseases; – eye diseases (conjunctival, third eyelid, eyelid, corneal and uveal diseases); – dental and periodontal diseases (dental extraction, occlusal adjustment, traumatic lesions of the viscerocranium); – surgical diseases (prostate and rectal diseases); – orthopaedic diseases (dysplasia). Laboratory and |

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| | additional tests and interpretation of test results. Methods of surgical and non-surgical treatment in the discussed disease entities. |
| Planned didactic forms/activities/methods | Lectures, auditory and laboratory classes, consultations, multimedia presentations, demonstrations and descriptions of clinical cases, supervision and correction of basic medical veterinary procedures, discussions. |

| **Name of the programme module** | **Food Hygiene of Animal Origin 1** |
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| Programme module type | Obligatory |
| Year of studies for a given field | V |
| Term for a given field | IX |
| ECTS credits together with contact/no contact hours division | 4 (2.6/1.4 ) |
| A unit providing the course | Department of Food Hygiene of Animal Origin |
| Module objective | Acquisition of knowledge and skills in regards to the health quality of food of animal origin with special consideration of a) the principles of organoleptic, chemical and microbiological analysis, b) detailed requirements for meat products, c) functioning of the HACCAP system in the technology of meat processing and storage of products of animal origin, d) supervision held by the Veterinary Inspection over the production of food of animal origin |
| Educational results | Knowledge: Knowledge of the conditions and criteria for the health quality of food, and the methods of laboratory testing, necessary to conduct the duties of sanitary and veterinary supervision appropriately. Understanding principles of functioning of the safety and quality assurance system on every stage of production and distribution of food of animal origin. Knowledge of hygienic processing technologies of meat and meat products. |
| | Skills: The ability to select appropriate methods and techniques of meat testing, the ability to describe and draw reasonable conclusions from the obtained results. The ability to conduct a hazard analysis, evaluate and estimate the risk of hazard occurrence and define critical control points in meat processing companies. The ability to implement the procedures of official control of food of animal origin. |
| | Social competence: Awareness of the responsibility for the consumer's safety concerning supervision, as well as an ability to formulate opinions. Understanding of the need for continuing education in connection with the progress of science and technological advancement. |
| Content of the programme module | The essence of the 'Food Hygiene of Animal Origin' programme module is to acquaint students with a) testing methods for food of animal origin, b) principles of official supervision over the production of food of animal origin, c) human health or life risks related to the production, storage and distribution of products of animal origin. |
| Planned didactic forms/actions/methods | Lectures, laboratory classes. |

| **Name of the programme module** | **Law in Veterinary Medicine** |
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| Programme module type | Obligatory |
| Year of the study programme | V |
| Semester of the study programme | IX |
| ECTS credits together with contact/no contact hours division | 1 (1/0) |
| A unit providing the course | Department of Pathological Anatomy, Faculty of Veterinary Medicine, University of Life Sciences in Lublin, Poland |
| Module objective | To master basic legal terms and skills in regard to expert assessment and the production of veterinary forensic opinions (both written and oral) that are based on assessments, particularly including opinions for judiciary authorities, administrative bodies and private persons. |
| Educational results | Knowledge: The student has basic (general) legal knowledge;. is familiar with the principles for the production of expert assessments and veterinary forensic opinions; creates veterinary medical opinions in written form that are based on examination plans for different animals; is familiar with the principles for the production of veterinary forensic opinions on the basis of the evidence contained in the case file |
| | Skills: The student is able to appear before judicial bodies in the character of a judicial expert; is able to carry out a veterinary forensic autopsy in any animal specie; is able to carry out the veterinary forensic examination of a living animal; is able to produce a veterinary forensic opinion on the basis of the evidence comprising the case file; appropriately describes and uses suitable veterinary medical terminology (both Polish and English) and correctly links the achieved interview data and the changes observed during an examination in a logical sequence |
| | Social competencies: The student develops a sense of respect for the law in force; possesses the skill of producing a veterinary forensic assessment and a veterinary medical opinion on the basis of the assessment; has a sense of responsibility that is adequate to the profession, and is aware that the profession requires diligence |
| Content of the programme module | Forensic veterinary sciences: the role of forensic veterinary sciences in the discovery process of factual truth and as service in the protection of law; the role of a veterinary doctor as a person possessing expert knowledge (a judicial expert); the outline of legal terminology; the liability of a veterinary doctor for malpractice; establishing the cause of an animal's death (veterinary medical |

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| | forensic assessment); production of veterinary medical opinions (both in written and oral form) on the basis of examination plans for different animal species; animal autopsy for forensic purposes, particularly including the mechanisms of action of various injuries on the body of an animal and the discussion of dynamics of changes in parameters indicative of death. |
| Planned didactic forms/activities/methods | Lectures, discussions, production of veterinary medical opinions in written form and discussion of opinions, animal autopsy on the basis of a judicial body's decision to admit an expert opinion, discussion of issues regarding the production of veterinary forensic opinions (particularly including opinions for judicial bodies). |

| **Name of the programme module** | **Veterinary Prevention 2** |
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| Programme module type | obligatory |
| Year of studies for a given field | 5 |
| Term for a given field | 10 |
| ECTS credits together with contact/no contact hours division | 3 (2/1) |
| A unit providing the course | Institute of Biological Bases of Animal Diseases<br>Division of Veterinary Prevention and Diseases of Birds |
| Module objective | The aim of this module is the acquisition of skills that allow the evaluation of health in populations of animals, diverse in terms of species and productivity, on the basis of epidemiological and production indicators. Evaluation of the significance of environmental factors for health, including the ability to identify and eliminate factors harmful for animals. Planning and implementing measures to tackle threats, improve health and increase flock productivity. Single-handed preparation of prophylactic schemes and elimination of physically, chemically and biologically induced threats in animal populations. Evaluating the efficiency of implemented prophylactic schemes. |
| Educational results | Knowledge: Broad knowledge of basic concept categories and terminology used in veterinary prevention, as well as terms with a direct reference to practical implementation of knowledge on prevention. Knowledge of prophylactic scheme planning and research tools used in immunology , as well as basic technologies that take advantage of the latest scientific achievements. |
| | Skills: The ability to seek, comprehend, analyse and creatively implement the necessary information from various sources and in different forms, specific to veterinary prevention. The ability to interpret legal regulations regarding the prophylaxis of contagious diseases, as well as an ability to determine the essential requirements of quarantine, adaptation of animals, and the knowledge of rodent control, disinsection and disinfection. The ability to evaluate the microclimate, as well as the knowledge of measurement technology and its components. Development and implementation of prophylactic schemes specific to individual species of productive animals. Development and implementation of prophylactic schemes specific to individual species of productive animals. |
| | Social competence: The ability to cooperate and work in a group assuming various roles. Awareness of the need of targeted further education and self-improvement |
| Content of the programme module | Main reasons of economic losses in individual sectors of livestock production. Characteristics of the breeding environment; Impact of the environment on the occurrence of diseases; Prophylaxis of contagious diseases. Sanitary protection of boarders: international and domestic sanitary regulations regarding communicable diseases, obligatory and recommended preventive vaccination – prevention at the global, community, union, – domestic, local structures and units of livestock production levels. Prophylaxis in herds of dairy and beef cattle. Prophylaxis in herds of pigs. Prevention in goat herds and sheep flocks. Rules for preparing prophylactic schemes. Disposal of excrement, dead bodies and solid waste. Rodent control, disinfection. Quarantine. |
| Planned didactic forms/actions/methods | Lectures, tutorials, laboratory classes, field classes, |

| **Name of the programme module** | **Diseases of dogs and cats. Block II** |
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| Programme module type | Obligatory |
| Year of the study programme | V |
| Semester of the study programme | X |
| ECTS credits together with contact/no contact hours division | 14 (8.0/6.0) |
| A unit providing the course | Department and Clinic of Animal Surgery<br>Department and Clinic of Internal Diseases of Animals<br>Department and Clinic of Animal Reproduction<br>Department of Epizootiology and Clinic of Infectious Diseases of Animals |
| Module objective | The aim of the module is to: familiarise students with particular internal, infectious, reproductive, surgical and locomotor diseases of dogs and cats, including the etiology, pathogenesis and clinical course of the diseases; teach students methods of diagnosis, and surgical and non-surgical medical management of particular disease entities, as well as differential diagnosis, management of treatment and prevention of the diseases; familiarise students with infectious compulsory notifiable diseases of dogs and cats and the administrative procedure for the reduction and elimination of the disease-related risk to humans. |

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| Educational results | Knowledge: The student knows the causes, pathogenesis, clinical symptoms, diagnostic methods and principles of therapy and prevention of internal, infectious, reproductive and surgical diseases of dogs and cats; has the knowledge of current methods of therapeutic management, indications and contraindications for the use of particular drugs, methods of prevention of the discussed diseases, and has sufficient knowledge to report a compulsory notifiable disease to veterinary authorities |
| | Skills: The student is able to describe the etiologic agents of infectious diseases of dogs and cats and use the knowledge on the subject to carry out preventive, diagnostic and therapeutic procedures; is able to carry out an interview and appropriate analysis of clinical symptoms; knows the principles for choosing and interpreting results of laboratory and additional tests, and is able to formulate a diagnosis and take appropriate course of treatment of dogs and cats. Is able to accurately communicate with other veterinary doctors and animal owners |
| | Social competence: The student is aware of the significance of social and professional responsibility for public health protection; is aware personal limitations and is able to use the advice and help of specialised units or experienced veterinary doctors in the scope of measures; understands that skill and knowledge building is a lifelong necessity. |
| Content of the programme module | Etiology and pathogenesis of selected disease entities in dogs and cats. Management methods of patients and principles of clinical examination of cats and dogs in the case(s) of: - internal gastrointestinal, urinary, nervous, cutaneous and endocrine gland diseases; - surgery: diagnostics, operative treatment and post-operative rehabilitation of thoracic and abdominal organs and their integuments;<br>- the locomotor system (traumatology); - diseases of the reproductive system. Physiology and pathology of pregnancy, identification of the female reproductive cycle, castration and sterilisation, contraception methods and hormonal therapy, mammary gland diseases, neonatal diseases in dogs and cats; - infectious diseases. Etiopathogenesis, clinical symptoms, differential diagnosis, diagnosis, control and prevention of bacterial, viral, fungal and prion diseases. Compulsory notifiable diseases of dogs and cats. Administrative procedures to eliminate and reduce the spread of diseases. Laboratory and additional tests: indications, interpretation of test results. Methods of surgical and non-surgical treatment in the discussed disease entities. |
| Planned didactic forms/activities/methods | Lectures, auditory and laboratory classes, consultations, multimedia presentations, demonstration and description of clinical cases, supervision and correction of basic medical veterinary procedures, discussions, partial assessment, examination. |

| **Name of the programme module** | **Food Hygiene of Animal Origin 2** |
|---|---|
| Programme module type | Obligatory |
| Year of studies for a given field | V |
| Term for a given field | X |
| ECTS credits together with contact/no contact hours division | 5 (2.67/2.33) |
| A unit providing the course | Department of Food Hygiene of Animal Origin |
| Module objective | Acquisition of knowledge and skills concerning the health quality of food of animal origin with special consideration of a) the technology of meat processing, b) detailed requirements for products of animal origin other than meat products, c) rules for direct and marginal sales, local and restricted activity as well as the veterinary inspection over products of animal origin in trade, import and export, d) the rules for veterinary inspection procedures in regards to food of inadequate health quality |
| Educational results | Knowledge: Knowledge of the conditions and criteria of health quality of food and food of animal origin, necessary to adequately conduct the duties of sanitary and veterinary supervision.<br>Understanding the rules of veterinary inspection of products of animal origin in trade, import and export, as well as supervision over direct and marginal sale, local and restricted activity. Knowledge of technologies allowing the hygienic processing of meat, meat preparation and meat products. |
| | Skills: The ability to determine the influence of technological processes on the health quality of food of animal origin. The ability to select appropriate methods and techniques for testing products of animal origin other than meat, the ability to describe and draw reasonable conclusions from the obtained results. The ability to implement the procedures of official control of food of animal origin. |
| | Social competence: Awareness of the responsibility for consumer safety in regards to the, as well as an ability to formulate opinions. Understanding the need for continuing education in connection with the progress of science and technological advancement. |
| Content of the programme module | The essence of the 'Food Hygiene of Animal Origin' programme module is to acquaint students with a) testing methods for food of animal origin, b) principles of official supervision over the production and trade of food of animal origin, c) practical aspects of meat processing technology. |
| Planned didactic forms/actions/methods | Lectures, laboratory classes, field classes in a meat processing plant and a cold store. |

| **Name of the programme module** | **Diseases of birds 2** |
|---|---|
| Programme module type | Obligatory |
| Year of studies for a given field | V |

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|---|---|
| Term for a given field | X |
| ECTS credits together with contact/no contact hours division | 3 (2/1) |
| A unit providing the course | Veterinary Prevention and Birds' Diseases Department |
| Module objective | To teach students methods of treating diseases of birds, and procedures for bird diseases subject to official control in EU countries. To teach students the specific and non-specific prophylaxis of poultry diseases. |
| Educational results | Knowledge: bird diseases entities and their etiological factors, course, clinical symptoms and anatomo-pathological changes. Characterise laboratory methods, techniques and materials used in disease diagnostics. Understand instructions concerning bird disease prevention programme drafting, and application of medicinal products in the treatment of bird diseases |
| | Skills: Can collect information on a case, perform clinical and anatomo-pathological examinations of a bird. Can draw up a communicable disease prophylaxis programme for a particular herd. Can interpret results of additional (laboratory) tests and use regulations concerning the control of contagious poultry diseases. |
| | Social skills: Awareness of the risk for human health resulting from contact with a diseased animal (bird) and can share knowledge with academic researchers. Awareness of social, professional and ethical responsibility for diagnostic and treatment actions taken on a living organism. Can provide information on necessary procedures and implemented therapy in a clear and straightforward fashion. |
| Contents of the education module (a concise description consisting of approximately 100 words) | 1. specific prophylaxis – vaccination programmes, types of vaccines used in the poultry industry and applied vaccination methods; 2. non-specific prophylaxis of poultry diseases – bio-security of herds; 3. methods of treating bird diseases, and the application of medicinal products; 4. diagnostic procedures applied to bird diseases |
| Planned didactic forms/activities/methods | Lectures, multimedia presentations, films, mastering practical techniques of clinical and anatomo-pathological examinations, laboratory diagnostics of parasitic invasions and bacterial infections, discussions, laboratory class report |

| **Name of the programme module** | **Administration and veterinary law** |
|---|---|
| Programme module type | Obligatory |
| Year of studies for a given | V |
| Term for a given field | X |
| ECTS credits together with contact/no contact hours division | 1 (1/0) |
| A unit providing the course | Department of Pathological Anatomy |
| Module objective | Shows the knowledge and skills that are necessary to identify and interpret legislation governing the profession of a veterinary doctor correctly, and responsibility for action taken, and takes legal regulations regarding the subject of the action into consideration. Taking appropriate action in the case of the identification of a compulsory notifiable disease in an animal. The student has a well-developed sense of respect for provisions of written laws, particularly the provisions governing the profession of a veterinary doctor. |
| Educational results | Knowledge: the student answers questions concerning the Polish law (the definition of law, civil law, criminal law, administrative law, the legal procedure) and the EU law, particularly including veterinary law |
| | Skills: the student enters into an informed discussions initiated personally, and answers questions concerning veterinary legislation |
| | Social competencies:<br>the student takes appropriate action by interpreting legal regulations regarding veterinary medicine in a broad sense |
| Content of the programme module | Administration and veterinary law: basic aspects of the Polish law (the definition of law, civil law, criminal law, administrative law, the legal procedure) and the EU law, the analysis of legal regulations governing the operation of the Polish Veterinary Inspection, animal treatment facilities, animal protection and animal health protection, the profession of a veterinary doctor and veterinary medical chambers; active participation in classes by entering an informed discussion and answering questions concerning veterinary legislation; taking appropriate action by interpreting legal regulations regarding veterinary medicine in a broad sense. |
| Planned didactic forms/actions/methods | Multimedia lectures (www.wetgiw.gov.pl), Legal basis for clinical activity and documentation, seminars, discussions |

| **Name of the programme module** | **Diseases of farm animals – clinical training. Block I** |
|---|---|
| Programme module type | Obligatory |
| Year of the study programme | V |
| Semester of the study programme | X |
| Number of ECTS points for contact and non-contact hours | 2.0 credits for contact hours |
| A unit providing the course | Department of Epizootiology and Clinic of Infectious Diseases, Department and Clinic of Internal Diseases, Institute of Animal Breeding, Department of Animal Surgery, Faculty of Veterinary Medicine, University of Life Sciences in Lublin, Poland |

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| Module objective | To master practical skills required to practice the profession of a veterinary doctor, in the diagnosis and treatment of farm animals |
| Educational results | Knowledge: Gains practical knowledge of diagnosis, prevention and therapy of animal diseases and the practical knowledge of occupational marketing |
| | Skills: Possesses the skills of: collecting interview data, carrying out clinical examinations in accordance with the plan of a clinical examination, performing in-depth analysis and correct interpretation of clinical symptoms, anatomo-pathological changes, laboratory and additional test results, formulating a diagnostic statement with the consideration of differential diagnosis and therapeutic and preventive procedures. Is able to choose and apply laboratory techniques, collect samples for tests, and analyse and interpret results of the tests in order to evaluate the health status of animals and their environment. Shows effective communication skills with customers, other veterinary doctors, supervising office and body, staff members, and staff members of national and local authorities |
| | Social competence: Observes the principles of professional ethics. Exhibits the skill of effective interpersonal communication, and taking action under uncertain and stressful conditions |
| Content of the programme module | Restraining farm animals with or without the use of tools (screws, tethers, ropes, etc.) in order to carry out examinations and perform medical procedures; using a mouth gag, probe.<br>Restraining horses by physical and pharmacological means<br>Measurement of temperature, pulse and respiration; rectal examination, orthopaedic examination<br>Collection of samples for laboratory tests (collection of urine samples with the use of a catheter, jugular blood samples with the use of a vacutainer tube, collection of scrapings and hair samples for microbiological and parasitic tests)<br>Collection of samples for bacteriological tests (swabs from the nasopharyngeal cavity, the conjunctival sac, the reproductive tract, blood, urine, faeces, skin scrapings, hair, internal organ biopsy)<br>Collection of samples for viral tests in living and dead animals (transport media)<br>Non-invasive collection of tracheobronchial fluid<br>Principles for the maintenance and transport of biological samples to the laboratory<br>Evaluation of the health status of a neonate after birth<br>Evaluation of the immunological status based on quick field tests<br>Evaluation of the biological quality of colostrum<br>Auscultation of the chest and the abdominal cavity<br>Evaluation of the degree of dehydration, fluid therapy |
| Planned didactic forms/activities/methods | Didactic methods: clinical training in the clinics of the Faculty of Veterinary Medicine, consultations with doctors on clinical duty, ambulance rides to farms (field experience) |

| **Name of the programme module** | **Diseases of horses – clinical training. Block I** |
|---|---|
| Programme module type | obligatory |
| Year of the study programme | V |
| Semester of the study programme | X |
| ECTS credits together with contact/no contact hours division | 2.0 credits for contact hours |
| A unit providing the course | Department of Epizootiology and Clinic of Infectious Diseases, Department and Clinic of Internal Diseases, Institute of Animal Breeding, Department of Animal Surgery, Faculty of Veterinary Medicine, University of Life Sciences in Lublin, Poland |
| Module objective | To master practical skills in horse disease diagnosis and treatment that are required to practice the profession of a veterinary doctor |
| Educational results | Knowledge: Gaining the practical knowledge of diagnosis, prevention and therapy of animal diseases and the practical knowledge of occupational marketing |
| | Skills: Possesses the skill of: collecting interview data, carrying out a clinical examination in accordance with the plan of a clinical examination, performing in-depth analysis and correct interpretation of clinical symptoms, anatomo-pathological changes, laboratory and additional test results, formulating a diagnostic statement with the consideration of differential diagnosis and therapeutic and preventive procedures. Is able to choose and apply laboratory techniques, collect samples for tests, and analyse and interpret results of the tests in order to evaluate the health state of animals and their environment. Shows effective communication skills with customers, other veterinary doctors, supervising office and body staff members, and staff members of national and local authorities |
| | Social competence: Observes the principles of professional ethics. Exhibits the skill of effective interpersonal communication and taking action under uncertain and stressful conditions |
| Content of the programme module | Restraining horses with or without the use of tools (twitches, tethers, ropes) in order to carry out examinations and perform medical procedures, using a mouth gag.<br>Restraining horses by physical and pharmacological means. Measurement of temperature, pulse and respiration, rectal examination, orthopaedic examination. Collection of samples for general, microbiological and parasitic laboratory tests (collection of urine samples with the use of a catheter, jugular blood samples with the use of a vacutainer tube, collection of scrapings and hair samples for specific test purposes). Collection of samples for bacteriological tests (swabs from the nasopharyngeal cavity, the conjunctival sac, the reproductive tract, blood, urine, faeces, skin scrapings, hair, internal organ biopsy). Collection of samples for viral tests in living and dead horses (transport media). Non- |

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| | invasive collection of tracheobronchial fluid. Principles for the maintenance and transport of biological samples to the laboratory. Evaluation of the health state of a foal after birth. Field-test based evaluation of the immunological state of a foal in the 24th hour after birth. Evaluation of the biological quality of a mare's colostrum. Auscultation of the chest and the abdominal cavity. Evaluation of the degree of dehydration, fluid therapy. Microscopic evaluation of the hair development phase and cytological preparations from the skin. |
| Planned didactic forms/activities/methods | Didactic methods: clinical training in the clinics of the Faculty of Veterinary Medicine, consultations with doctors on clinical duty |

| **Name of the programme module** | **Diseases of dogs and cats – clinical training. Block I** |
|---|---|
| Programme module type (obligatory/optional) field | Obligatory |
| Year of the study programme | V |
| Semester of the study programme | X |
| ECTS credits together with contact/no contact hours division | 1.0 (1.0/0) |
| A unit providing the course | Department of Epizootiology and Clinic of Infectious Diseases, Department and Clinic of Internal Diseases, Institute of Animal Breeding, Department of Animal Surgery, Faculty of Veterinary Medicine, University of Life Sciences in Lublin, Poland |
| Module objective | To master practical skills in the diagnosis and treatment of dogs and cats that are required to practice the profession of a veterinary doctor |
| Educational results | Knowledge: Gaining the practical knowledge of diagnosis, prevention and therapy of animal diseases and the practical knowledge of occupational marketing |
| | Skills: Possesses the skills of: collecting interview data, carrying out a clinical examination in accordance with the plan of a clinical examination, performing in-depth analysis and correct interpretation of clinical symptoms, anatomo-pathological changes, laboratory and additional (ECG, ultrasonography, x-ray, endoscopy) test results, formulating a diagnosis (including a differential diagnosis) and carrying out therapeutic and preventive procedures; Is able to choose and apply laboratory techniques, collect samples for tests, and analyse and interpret results of the tests in order to evaluate the health status of animals and their environment; Shows effective communication skills with customers, other veterinary doctors, supervising office and body staff members, and staff members of national and local authorities; has the skill of maintaining appropriate veterinary medical documentation |
| | Social competence: Observes the principles of professional ethics; Shows the skill of effective interpersonal communication and taking action under uncertain and stressful conditions; Is aware of personal limitations and believes that lifelong knowledge and practical skill development is a necessity |
| Contents of the education module | Immobilisation / restraining of dogs and cats with the use of tools in order to carry out examinations and perform medical procedures. Restraining dogs and cats by pharmacological means. General physical examination and a detailed examination of organs/systems by means of observation, palpation, percussion, auscultation. The ability to perform subcutaneous, intramuscular and intravenous injections. Evaluation of the degree of dehydration, fluid therapy. Basic preventive procedures in dogs and cats, and hormonal contraception in dogs and cats. Collection of samples for general, microbiological (bacteriological, viral, mycological) and parasitic laboratory tests in living and dead animals. Principles for the maintenance, storage and transport of biological samples to the laboratory. Evaluation of clinical morphotic changes on the skin, microscopic evaluation of the hair development phase and cytological preparations from the skin. Preparation of instruments for surgery, preparation of the surgical field. Preoperative and postoperative care of the patient. Carrying out a detailed clinical examination of the reproductive system in dogs and cats (both in males and females). Diagnosis of the oestrous cycle phase, determination of the optimal time for mating, diagnosis of pregnancy |
| Planned didactic forms/activities/methods | Didactic methods: clinical training in the clinics of the Faculty of Veterinary Medicine, consultations with doctors on clinical duty |

| **Name of the programme module** | **Practice in Veterinary Inspection 2** |
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| Programme module type | obligatory |
| Year of studies for a given field | V |
| Term for a given field | after the $10^{th}$ term |
| ECTS credits together with contact/no contact hours division | 2 (1.5/0.5) |
| A unit providing the course | Department of Veterinary Medicine, University of Life Sciences Lublin |
| Module objective | The aim of the training is for the students to acquire abilities related to the scope of duties of official veterinary and sanitary supervision over meat processes, transportation, sale and production of other food types of animal origin. |

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| Educational results | Knowledge: Knowledge of criteria for the health quality of food, and laboratory testing procedures for meat, meat products and other kinds of food of animal origin, necessary to adequately perform the duties of sanitary and veterinary supervision. Knowledge of meat processing technologies, as well as other raw materials and foodstuffs of animal origin; understanding the functioning of safety and quality assurance systems at every stage of production and distribution. Knowledge of the practical aspects of carrying out official control over food of animal origin. |
| | Skills: The ability to implement the procedures of the official control of food of animal origin, along with the ability to aptly select testing methods for the aforementioned food. The ability to interpret and apply suitable regulations of the food law necessary to adequately perform the duties of sanitary and veterinary supervision over meat processing, as well as other raw materials of animal origin. Knowledge of record keeping in regards to the performed inspection. |
| | Social competence: Awareness of the responsibility of consumer safety in regards to the supervision exercised. The ability to work in a team. Understanding the need for continuing education in connection with the progress of science and technological advancement. |
| Content of the programme module | The essence of the 'Practice of Veterinary Inspection' programme module is to acquaint students with the principles of official supervision over the production of food of animal origin, The content of the programme module covers: a) acquaintance with the schemes of processing lines and main processing procedures in a company that processes meat and other foodstuffs of animal origin, b) acquaintance with the HACCP system in the aforementioned company and its correct implementation, c) acquaintance with cleaning, washing and disinfection of meat in companies that process food of animal origin, d) learning the principles of waste classification and utilisation, e) acquiring the scope of duties and tasks of an official veterinarian doctor in regards to official supervision over food of animal origin; principles of record-keeping. |
| Planned didactic forms/actions/methods | On-going and periodic inspections (with the supervision of the official veterinary doctor) in establishments, discussions, keeping records of all activities in the Practice Journal |

| **Name of the programme module** | **Clinical training 2 (after the X term)** |
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| Programme module type | obligatory |
| Year of studies for a given field | V |
| Term for a given field | after the $X^{th}$ term |
| ECTS credits together with contact/no contact hours division | 4 (3/1) |
| A unit providing the course | Department of Veterinary Medicine, Life Sciences University of Lublin |
| Module objective | The aim of the training is to acquaint students with the tasks, organisation, and function of a veterinary clinic, and broaden the knowledge of animal internal diseases, veterinary surgery, obstetrics, gynaecology and andrology, as well as animal contagious diseases. Should the doctor who oversees the students' training deem it appropriate, radiology. |
| Educational results | Knowledge: The necessary knowledge for: conducting clinical examinations of animals according to the examination plan, an analysis of clinical symptoms, the ability to diagnose and take therapeutic or prophylactic measures. Knowledge of principles and practical aspects of veterinary procedures in animal clinics. |
| | Skills: The ability to complete medical histories, conduct clinical examinations, analyse clinical symptoms, laboratory results, diagnose, take therapeutic and prophylactic measures. The ability to apply anaesthesia, the rules of asepsis and antisepsis and assist in basic surgical and gynaecological procedures performed on animals. The ability to select and apply laboratory techniques, take samples for examination and analyse and interpret the results of the examination. The ability to prepare unambiguous case descriptions and keep records pursuant to applicable law, in a form that is clear to the owner and other doctors. |
| | Social competence: The ability to form independent opinions, especially in regards to diagnostics and therapy of animal diseases. The ability to cooperate and work in groups; a sense of responsibility for other team members and patients. Awareness of the need for targeted further education and self-improvement. |
| Content of the programme module | Medical records: acquainting with medical forms used at the clinic (case history, admission records, electronic registry of admissions and treatment), Organisation and administration: acquainting with the principles of work organisation in the place of training, acquainting with patient registration and the registry system (admission records, electronic registry of admission and treatment), acquainting with the methods of supplying and general rules of maintaining medicine and material storage (collection, distribution, storage and registry of medicine and materials). Internal diseases: conducting basic diagnostic activities, the ability to conduct simple procedures (hypodermic, intramuscular and intravenous injections, pleural cavity and peritoneum puncture, bladder catheterization, prostate infusions), acquainting with medication most frequently administered in clinical practice, results of additional examinations and their interpretation (morphological tests of blood and urine, biochemical tests of blood, gasometry, EKG), acquainting with methods of treatment for the most frequently occurring internal conditions. Veterinarian surgery: general and regional anaesthesia, applying wound dressing, performance simple surgical procedures, – assisting at small surgical procedures (in general surgery, ophthalmology, orthopaedics and stomatology), Obstetrics and gynaecology: diagnostics of pregnancy and gynaecological conditions, performance of simple gynaecological procedures, assisting in small obstetrical procedures, Contagious diseases: methods of diagnostics for the most |

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| | frequently occurring contagious diseases, the principles of prophylaxis for contagious diseases, Proceedings in the case of diseases treated ex officio. Radiology: principles of preparing a patient for radiological and ultrasonographic examination, interpretation of x-rays and ultrasonographic images |
| Planned didactic forms/actions/methods | Completing medical histories and conducting clinical examinations, discussions, reports of medical cases in the Practice Journal |

**Eleven semester modules**

| **Name of the programme module** | **Diseases of farm animals – clinical training. Block II** |
|---|---|
| Programme module type | Obligatory |
| Year of the study programme | VI |
| Semester of the study programme | XI |
| ECTS credits together with contact/no contact hours division | 7.0 (4.0/3.0) |
| A unit providing the course | Institute of Animal Breeding, Department of Animal Surgery, Department of Epizootiology and Clinic of Infectious Diseases, Department and Clinic of Internal Diseases, University of Life Sciences in Lublin, Poland |
| Module objective | To master practical skills in the diagnosis and treatment of farm animals, that are required to practice the profession of a veterinary doctor |
| Educational results | Knowledge: Gaining the practical knowledge of diagnosis, prevention and therapy of animal diseases and the practical knowledge of occupational marketing |
| | Skills: Possesses the skills of: collecting interview data, carrying out clinical examinations in accordance with the plan of a clinical examination, performing in-depth analysis and correct interpretation of clinical symptoms, anatomo-pathological changes, laboratory and additional test results, formulating a diagnostic statement with the consideration of differential diagnosis and therapeutic and preventive procedures; Shows the skills of: carrying out sedation and anaesthesia, putting the principles of asepsis and antisepsis into practice, performing surgical and gynaecological and obstetric procedures in animals; Is able to: diagnose the oestrous cycle phase, pregnancy, diagnose and treat reproductive disorders, provide farm animals with non-surgical and surgical help during labour |
| | Social competence: Observes the principles of professional ethics: Is aware of personal limitations, understands that continuing education and self-improvement in the field of diseases of farm animals is essential |
| Content of the programme module | Restraining farm animals with the use of tools (the farmer's loop, a nose holder, a pig holder, etc.). General physical examination. Inserting a nasopharyngeal tube. Using a mouth gag inserting the Thygesen tube. Collection of rumen contents. Rumenocentesis (rumen puncture). Rectal examination. Examination of the mammary gland, collection of samples from the mammary gland. Subcutaneous and intramuscular injections. Intravenous infusions. Collection of blood from the jugular vein and the caudal vein using a vacutainer tube. Urine collection, catheterization of the urinary bladder in cows. Dressing. Applying a tuberculin test. Inserting an intravenous catheter, intravenous infusion; single intravenous injections. Trauma management. Methods of general and local anaesthesia. Practical application of X-ray examinations and ultrasonography. Carrying out examination of the reproductive system in cows (ultrasonography). Semen collection and insemination. Management of difficult labour (fetotomy, Caesarean section). Diagnosis and treatment of reproduction disorders (uterine lavage, swab collection for cytological and bacteriological tests, endometrial biopsy). Manual removal of the placenta. |
| Planned didactic forms/activities/methods | Didactic methods: clinical training in the clinics of the Faculty of Veterinary Medicine, consultations with doctors on clinical duty, field training with doctors |

| **Name of the programme module** | **Diseases of horses – clinical training. Block II** |
|---|---|
| Programme module type | Obligatory |
| Year of the study programme | VI |
| Semester of the study programme | XI |
| ECTS credits together with contact/no contact hours division | 7.0 (4.0/3.0) |
| A unit providing the course | Institute of Animal Breeding, Department of Animal Surgery, Department of Epizootiology and Clinic of Infectious Diseases, University of Life Sciences in Lublin, Poland |
| Module objective | To master practical skills in horse disease diagnosis and treatment that are required to practice the profession of a veterinary doctor |
| Educational results | Knowledge: Gaining the practical knowledge of diagnosis, prevention and therapy of animal diseases and the practical knowledge of occupational marketing |
| | Skills: Possesses the skills of: collecting interview data, carrying out clinical examinations in accordance with the plan of a clinical examination, performing in-depth analysis and the correct interpretation of clinical symptoms, anatomo=pathological changes, laboratory and additional test results, formulating a diagnostic statement with the consideration of differential diagnosis and therapeutic and preventive procedures. Shows the skills of: carrying out sedation and anaesthesia, putting the principles of asepsis and antisepsis into practice, performing surgical and gynaecological and obstetric procedures in animals.<br>Is able to: diagnose the oestrous phase cycle, pregnancy, diagnose and treat reproductive disorders, provide a mare with non-surgical and surgical help during labour. |

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| | Social competence: Observes the principles of professional ethics. Is aware of personal limitations, understands that continuing education and self-improvement in the field of horse diseases is essential. |
| Content of the programme module | Evaluation of teeth, tooth floating. Examination of the patency of the lacrimal duct, intubation. Rhinoscopy, gastroscopy, bronchoscopy. Inserting a nasogastric tube, gastric lavage. Rectal infusion. Inserting an intravenous catheter, intravenous infusion, single intravenous injections. Subcutaneous injection, intramuscular injection. Preparation of surgical instruments. Preparing a patient for surgery. Carrying out clinical (surgical, orthopaedic, dental, ophthalmic) examinations. Trauma management. Methods of general and local anaesthesia. Practical application of X-ray examination and ultrasonography. Assisting during surgical procedures. Management of horse breeding in individual breeder and in stables. Carrying out a detailed clinical examination of the reproductive system in a mare and stallion (ultrasonography). Semen collection and insemination. Management of difficult labour (fetotomy, Caesarean section). Diagnosis and treatment of fertility disorders (uterine lavage, swab collection for cytological and bacteriological tests, endometrial biopsy). Manual removal of the placenta in a mare |
| Planned didactic forms/activities/methods | Didactic methods: clinical training in the clinics of the Faculty of Veterinary Medicine, consultations with doctors on clinical duty |

| **Name of the programme module** | **Diseases of dogs and cats – clinical training. Block II** |
|---|---|
| Programme module type | Obligatory |
| Year of the study programme | VI |
| Semester of the study programme | XI |
| ECTS credits together with contact/no contact hours division | 7.0 (4.0/3.0) |
| A unit providing the course | Institute of Animal Breeding, Department of Animal Surgery, Department of Epizootiology and Clinic of Infectious Diseases, Department and Clinic of Internal Diseases, University of Life Sciences in Lublin, Poland |
| Module objective | To master practical skills in the diagnosis and treatment of dogs and cats, that are required to practice the profession of a veterinary doctor |
| Educational results | Knowledge: Gaining the practical knowledge of diagnosis, prevention and therapy of animal diseases and the practical knowledge of occupational marketing |
| | Skills: Possesses the skills of: collecting interview data, carrying out clinical examinations in accordance with the plan of a clinical examination, performing in-depth analysis and the correct interpretation of clinical symptoms, anatomo-pathological changes, laboratory and additional test results, formulating a diagnosis (including a differential diagnosis) and carrying out therapeutic and preventive procedures; Shows the skills of: carrying out sedation and anaesthesia, putting the principles of asepsis and antisepsis into practice, performing surgical and gynaecological and obstetric procedures in animals ; Is able to: diagnose the oestrous phase cycle, pregnancy, diagnose and treat reproductive disorders, provide an animal with non-surgical and surgical help during labour |
| | Social competencies: Observes the principles of professional ethics; Is aware of personal limitations, understands that continuing education and self-improvement in the field of diseases of dogs and cats is essential |
| Contents of the education module | Diagnosis, differential diagnosis, prevention and treatment of diseases of particular systems and organs in dogs and cats, including neonates and geriatric animals. Preventive and surgical management in the case of trauma and injuries. Assisting in and performing basic surgical and gynaecological and obstetric procedures; male and female castration. Examination characteristics and treatment standards in the management of patients with ophthalmic, dental and dermatological conditions. Carrying out and interpreting results of endoscopic, ultrasound and radiographic examinations. Inserting a nasogastric tube, gastric lavage, rectal infusion. Semen collection and artificial insemination. Assistance in labour and the management of neonates<br>Diagnosis and treatment of reproductive disorders |
| Planned didactic forms/activities/methods | Didactic methods: clinical training in the clinics of the Faculty of Veterinary Medicine, consultations with doctors on clinical duty |

| **Name of the programme module** | **Clinical internship – Diseases of Birds** |
|---|---|
| Programme module type | Obligatory |
| Year of studies for a given field | V |
| Term for a given field | XI |
| ECTS credits together with contact/no contact hours division | 3 (2/1) |
| A unit providing the course | Department of Veterinary Prevention and Diseases of Birds |
| Module objective | To use the acquired knowledge in practice during the “Diseases of birds” module, learn proper conduct with patients, master post-mortem techniques, perform laboratory tests used to diagnose birds diseases and select suitable therapeutic measures. |
| Educational results | Knowledge: Knows diseases typical for individual species of birds. Knows particular diagnostic procedures for the treatment of various species of birds. Knows methods, techniques and materials used in disease diagnostics |

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| | Skills: Can analyse data derived from the medical history. Can plan further diagnostic procedures, perform clinical and post-mortem examination of birds, collect samples for further diagnostic tests. Can perform basic bacteriological tests, such as inoculation on bacteriological substrates – preparation of antibiograms and application of diagnostic serums to identify bacteria and carry out parasitic testing. |
| | Social skills: Awareness of professional and ethical responsibility for personal diagnostic and therapeutic decisions concerning the treatment of animals. Can provide information on necessary procedures and implemented therapy in a clear and straight forward fashion |
| Contents of the education module | - diagnostic procedures applied to bird diseases<br>- methods of collecting information on a bird or herd, mastering clinical and anatomo-pathological examination skills<br>- sampling and types of samples collected for laboratory tests<br>- vaccination – methods of vaccine administration<br>- methods of treating bird diseases and the application of medicinal products |
| Planned didactic forms/activities/methods | mastering practical techniques of clinical and anatomo-pathological examinations, laboratory diagnostics of parasite invasions and bacterial infections, discussions, laboratory class report |

**OPTIONAL MODULES**

| **Name of the programme module** | **Animal behaviourism** |
|---|---|
| Programme module type | optional |
| Year of studies for a given field | II |
| Term for a given field | III |
| ECTS credits together with contact/no contact hours division | 1 (0.6/0.4) |
| A unit providing the course | Department of Biochemistry |
| Module objective | Acquainting students with basic concepts and methodology of laboratory research in regards to animal behaviourism. Providing current knowledge of the occurrence, role and ability to learn, emotions, feelings, intelligence, consciousness and higher feelings in animals, in order to make it easier for future doctors to establish a relation with the patient and sensitise them to the psychological needs of animals. |
| Educational results | Knowledge: Knowledge and the ability to apply basic concepts of animal behaviourism. Understanding mechanisms of animal behaviour in laboratory conditions. Knowledge of the nature of animal behaviour both in reference to individuals and the species. |
| | Skills: The ability to recognise animal behaviour that signals affiliation or aversion. The ability to understand and creatively implement the information connected with animal behaviourism |
| | Social competence: The ability to communicate with behavioural specialists |
| Content of the programme module | Review of methodology and behavioural relevance. Issues related to laboratory-tested animals: rigid behavioural models, instinct and drive, hierarchy of needs, emotions, feelings, bonds, intelligence, consciousness, mind theory, learning, habituation, socialisation, short-term and long-term memory, operational and associative memory. Cultural and linguistic phenomena in the animal world, interactions across species, theoretical principles of animal training operating with natural methods with the use of gestures and attitudes. Enrichment of non-natural environments. Plasticity of the nervous system: neuroanatomical and functional alterations in the ontogenetic development, formation and the role of reverberative loops in the brain. |
| Planned didactic forms/actions/methods | Didactic methods: discussions, lectures, preparation and review of a paper |

| **Name of the programme module** | **First aid** |
|---|---|
| Programme module type | Optional |
| Year of the study programme | II |
| Semester of the study programme | III |
| ECTS credits together with contact/no contact hours division | 1.0 ( 0.5/0.5) |
| A unit providing the course | Department of Epizootiology and Clinic of Infectious Diseases, Faculty of Veterinary Medicine, University of Life Sciences in Lublin, Poland |
| Module objective | The aim of the module is to teach students the basic knowledge and skills of providing first aid to an injured person |
| Educational results | Knowledge: The student knows the general rules of procedure that need to be observed at the place of an accident. Knows the management algorithm for different health- and life-threatening conditions |
| | Skills: The student is able to identify a condition that poses an imminent threat to health and life. Is able to carry out emergency activities and procedures in different health- and life-threatening conditions and takes into consideration the specificity of the conditions when carrying out the activities and procedures. Is able to perform CPR in adults and children |
| | Social competence: The student develops the attitude of openness and sensitivity to the needs of others. Develops the ability to make decisions under extreme circumstances |
| Content of the programme module | General rules of procedure at the place of an accident, the rescue chain, the survival chain, the legal |

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| | basis for providing first aid to an injured person, evaluation of the state of the injured person, life-threatening conditions, shock, management of an unconscious injured person, the causes and mechanisms of sudden cardiac arrest in adults and children, first aid in case of poisoning, first aid at the scene of a road accident, the European Resuscitation Council guidelines on CPR from 2010, Adult Basic Life Support, Paediatric Basic Life Support, Newly Born Life Support, Automatic External Defibrillation, injuries to particular body parts (head, neck, spine and spinal cord, limbs, chest, abdomen, pelvis, genitourinary tract), injuries caused by physical factors (drowning, overheating, burn, hypothermia, frostbite, electric shock and lightning shock, bite, sting) |
| Planned didactic forms/activities/methods | Seminar classes, multimedia presentations, demonstration of first aid methods, practical classes |

| **Name of the programme module** | **Avian physiology and anatomy** |
|---|---|
| Programme module type | Optional |
| Year of studies for a given field | II |
| Term for a given field | III |
| ECTS credits together with contact/no contact hours division | 1 (0.7/0.3) |
| A unit providing the course | Department of Animal Physiology and the Department of Animal Anatomy and Histology, Institute of Animal Anatomy |
| Module objective | The objective of the module: Acquainting students with the macroscopic structure of all systems and organs in birds. Acquainting students with the proper functioning of individual systems and organs in birds, their interdependence, with reference to species differences and the phenomena typical of exotic birds. |
| Educational results | Knowledge: The knowledge of general avian anatomy. Knowledge of the correct functioning of the systems, organs and tissues in birds with the consideration of species differences. Understanding basic mechanisms of physiological regulation of cellular, tissue and organ activity and their mutual integration in the body, as well as the differences in comparison to mammals. |
| | Skills: Ability to differentiate the structure of systems, and organs of birds and mammals; the ability to describe the manner of functioning of individual organs and systems in birds; recognition of physiological processes typical of birds. The ability to apply the acquired basic knowledge when solving problems in the course of future education. |
| | Social competence: The ability to recognise basic problems in regards to the health and functioning of bird organisms, the knowledge of the autonomy of birds as potential patients. The ability to cooperate and work in groups; the ability to take on different roles; a sense of responsibility for other team members and patients. |
| Content of the programme module | The topics cover issues from the following sections: blood physiology, anatomy and physiology of the respiratory system, anatomy and physiology of the heart and the circulatory system, anatomy and physiology of the digestive system, anatomy and physiology of the reproductive (with reference to the physiology of hatching) and excretory systems, metabolism physiology and thermoregulation, anatomy and physiology of the organs responsible for senses and the nervous and endocrine systems |
| Planned didactic forms/actions/methods | The part of the subject that encompasses the anatomy of birds is presented in the form of practical tutorials and lectures. The part devoted to the physiology of birds is based on multimedia presentations and discussions. |

| **Name of the programme module** | **Surgical anatomy of small animals** |
|---|---|
| Programme module type | Optional |
| Year of studies for a given field | II |
| Term for a given field | III |
| ECTS credits together with contact/no contact hours division | 1.0 (0.6/0.4) |
| A unit providing the course | Department of Anatomy and Histology of Animals |
| Module objective | The objective of the module is to acquaint students with selected anatomical issues of small animals in regards to conditions requiring surgical treatment |
| Educational results | Knowledge: The ability to describe, indicate and differentiate between structures that are anatomically related to particular conditions that require surgical treatment. Knowledge of selected anatomical issues of small animals that require surgical treatment |
| | Skills: The ability to analyse anatomical conditions in the context of particular conditions that require surgical treatment. The ability to seek, comprehend, analyse and creatively implement necessary information from various sources |
| | Social competence: understanding the importance of lifelong learning, the ability to inspire and organise learning processes for others. The ability to cooperate and work in a group assuming various roles |
| Content of the programme module | Teeth (build, type of dentition with reference to dog breeds). Structure, location and access to anal sinuses with the application of surgical methods. Preparation of anal sinuses. Identifying the elements that constitute the pelvic diaphragm of the cat and dog. Structure and characteristics of a dog's penis. Application of surgical methods to prepare dog's genitals. Partial amputation of the penis. Structure and topography of the dog's stomach. Vascularisation and innervation as well as discussion of the elements that stabilise the position of the stomach with reference to the conditions that require surgical intervention (gastric dilatation and volvulus). Structure of the dog's hip joints. Ligaments and |

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| | muscles – attachments and their functions. Preparing access with an indication of the elements that have an impact on the condition of this joint (hip and thigh joint dislocation, dysplasia) |
| Planned didactic forms/actions/methods | Tutorials, laboratory classes, preparations, discussions, multimedia presentations |

| **Name of the programme module** | **Clinical physiology** |
|---|---|
| Programme module type | optional |
| Year of studies for a given field | II |
| Term for a given field | III |
| ECTS credits together with contact/no contact hours division | 1 (0.5/0.5) |
| A unit providing the course | Department of Animal Physiology |
| Module objective | The objective of the module is to acquaint students with regulation mechanisms of physiological processes, which are important from a clinical point of view. Students learn the function of respective structures, organs and systems in the conditions of altered food intake (excess or deficiency) and more or less intense movement |
| Educational results | Knowledge: Knowledge of mechanisms that cause changes in the intake of food and their impact on the bodies of animals (consequences of obesity). Knowledge of how physical effort affects the body. Knowledge of the changes that take place in the body in the condition of idleness. |
| | Skills: The ability to give simple advice about the energy balance of the body (proper nutrition matched according to energy consumption). The ability to recognise any changes that result from the development of obesity in the circulatory, respiratory and locomotion system. Knowledge of methods that aid the training process and training changes in the locomotive, circulatory and respiratory systems and blood, as well as any changes resulting from idleness. |
| | Social competence: Awareness of the role of physical activity in prophylaxis and training, as well as an ability to use it in practice. The ability to popularise the knowledge of physiology for the purpose of shaping regular physical activity habits. The ability to demonstrate the acquired knowledge in groups. |
| Content of the programme module | Causes of obesity. Metabolic consequences of the development of obesity. Changes in the locomotive system, changes in the activity of the respiratory system that accompany obesity. The effects of the diet on longevity. Energy deficiency. Alterations of organs in the time of hunger. Hunger tolerance. Water deficiency and dehydration. Water intoxication. Changes in the body during physical effort. Training as a process of physiological adaptation – fitness, effort tolerance. Training changes in the locomotive, circulatory and respiratory systems, hormonal changes, changes in the level of haematological parameters. Changes in the system of internal secretion, fat tissue and liver. The impact of training on the process of erythropoiesis. Sports anaemia. Physical activity in the period of ageing. Physiology of idleness. Decrease in physical endurance. Impaired glucose tolerance and hormonal interactions. |
| Planned didactic forms/actions/methods | Tutorials, multimedia presentations, films, discussions |

| **Name of the programme** | **Herpetology with elements of herpetoculture** |
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| Programme module type | optional |
| Year of studies for a given field | II |
| Term for a given field | IV |
| ECTS credits together with contact/no contact hours division | 1 ( 0.5/0.5) |
| A unit providing the course | Department of Parasitology and Invasive Diseases, Institute of Biological Bases of Animal Diseases |
| Module objective | Acquisition of the basics of evolution, biology and breeding of reptiles and amphibians. Acquainting with the Polish herpetofauna and the most commonly bred species of amphibians and reptiles. Getting to know the role of amphibians and reptiles in the environment and the issues related to their protection. |
| Educational results | Knowledge: Knowledge of biology, the occurrence and role of reptiles and amphibians in Poland. Knowledge of breeding and feeding of reptiles and amphibians. Knowledge of basic regulations pertaining to the protection of amphibians and reptiles. |
| | Skills: The ability to create suitable conditions for breeding amphibians and reptiles in captivity. The ability to evaluate and comment on man-made hazards in the context of reptile and amphibian protection |
| | Social competence: Awareness of reptile and amphibian significance in the ecosystems and hazards for people that fall from the presence of dangerous species. Awareness of measures, useful for the benefit of reptile and amphibian protection |
| Content of the programme module | Legal principles of breeding and trade of exotic animals in Poland. Evolution and systematic arrangement of amphibians and reptiles. The role of amphibians and reptiles in the environment and economy. Polish amphibians and reptiles, protection and species reintroduction programmes. The most common breeding species – tortoises – semi-terrestrial turtles – lizards, – snakes. – amphibians Hazards arising from introducing breeding species into indigenous habitats, – invasive species. Hazards arising from breeding venomous animals. Systems of breeding reptiles and amphibians. The concept and role of hibernation and aestivation in reptiles. Methods of reptile reproduction, fertility |

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| | disorders in reptiles. Nutrition in reptiles and amphibians (nutrition in young and adult animals, types of nutrition and feeding frequency, diet supplementation, the role of vitamins in the nutrition of reptiles). |
| Planned didactic forms/actions/methods | Lectures, practical classes with the presentation of animals and terraria, watching and reviewing films, field classes in the Poleski National Park and the Lublin Exotarium |

| **Name of the programme module** | **Endocrinology** |
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| Programme module type | Optional |
| Year of studies for a given field | II |
| Term for a given field | IV |
| ECTS credits together with contact/no contact hours division | 1 (0.6/0.4) |
| A unit providing the course | Department of Biochemistry |
| Module objective | The aim of teaching endocrinology is to broaden and enhance the knowledge of endocrinology acquired at the courses of Biochemistry and Animal Physiology with information from the most recent scientific publications. Demonstration of how hormones affect cells, in connection with the multidirectional effect of their functioning and the regulation of respective changes in different tissues and organs; which will enable integration of theoretical and practical knowledge. |
| Educational results | Knowledge: The ability to present different aspects of endocrinology. The ability to describe mechanisms of hormonal regulation. The ability to describe analytical methods that are applied in endocrinology |
| | Skills: The ability to recognise interrelations between the activity of hormones and clinical symptoms of metabolic diseases. The ability to evaluate and analyse the effects of homeostasis disturbance |
| | Social competence: Awareness of the need for targeted further education and self-improvement. The ability to distinguish the relations between the reactions of medicine that have hormonal action and their effects |
| Content of the programme module | Mechanisms of hormonal action. Hormones of the hypothalamic-pituitary axis. The role of estrogens, progesterone, testosterone and other hormones in cycle regulation and reproductive behaviour of animals – peripheral and central interactions; genomic and non-genomic mechanisms. Hormonal regulation of the carbohydrate metabolism. Hormonal regulation of mineral balance. The role of the pineal gland and melatonin. Hormonal regulation of the metabolism. Tissue hormones. Integrating hormone function mechanisms with clinical symptoms of selected diseases. |
| Planned didactic forms/actions/methods | Tutorials, self-study materials on the unit's website, online materials available upon entering a password (VikiWet, Casus) |

| **Name of the programme module** | **Neurophysiology** |
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| Programme module type | Optional |
| Year of studies for a given field | II |
| Term for a given field | IV |
| ECTS credits together with contact/no contact hours division | 1 (0.7/03) |
| A unit providing the course | Department of Biochemistry and Physiology of Animals, Institute of Physiology of Animals |
| Module objective | Acquainting students with neurophysiological mechanisms of animal behaviour and the methods of testing the structure and activity of the nervous system |
| Educational results | Knowledge: The knowledge of animal behaviour based on the structure of the central nervous system and neurophysiological regulatory mechanisms. The knowledge of methods applied in testing the structure and function of the nervous system |
| | Skills: The ability to describe neurophysiological phenomena that accompany cognitive activity, emotional and behavioural perception of pain. The ability to apply the knowledge of neurophysiology in making interpretations of improper animal behaviours. |
| | Social competence: The awareness of the constant need to update personal knowledge. The knowledge of the participation of different biological factors in behavioural and learning disorders of animals. |
| Content of the programme module | Selected issues on neurobiology and developmental neurophysiology – the formation of the nervous system, defining the cell phenotype, making topographic maps within the nervous system, synaptogenesis, neurotrophic factors. Sexual dimorphism of the brain – hormonal and neuroanatomical conditions, physiological consequences. The neurophysiological base for behavioural and emotional activities. The impact of different substances on stimulating the reward system. Physiological bases for animal behaviour. Neurophysiological mechanisms of aggression and defence measures. Hormones versus behaviour. The behavioural disorders deriving from an improper functioning of the synapses and selected systems of synaptic transmission. Testing the methods of relationship between the nervous system and behaviour: possibilities and limitations. The brain versus immunity. Neurophysiology of pain. Methods applied in testing the structure and function of the nervous system. |
| Planned didactic forms/actions/methods | Multimedia presentations, films, papers |

| **Name of the programme module** | **Aquaristics** |
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| Programme module type | Optional |
| Year of studies for a given field | II |
| Term for a given field | IV |
| ECTS credits together with contact/no contact hours division | 1 (0.5/0.5) |
| A unit providing the course | Institute of Fish Diseases and Biology |
| Module objective | Acquisition of knowledge and skills of aquaristics |
| Educational results | Knowledge: Knowledge of the history of aquaristics, as well as currently applicable legal provisions in regards to aquaristics. The knowledge of design principles and issues regarding the maintenance of biotope aquariums, i.e. in Africa, South, Central and North America. The knowledge of basic principles of prophylaxis of diseases caused by pathogens, as well as the principles of applying commonly available preparations for treating aquarium fish. |
| | Skills: The knowledge of applicable legal provisions regarding aquaristics. The ability to profile different biotopes and aptly plan the line-up of species (plants and animals). The knowledge of basic principles of aquarium fish examination, prophylaxis of the diseases caused by pathogens, as well as the ability to appropriately select available medical preparations. |
| | Social competence: Understanding the importance of lifelong learning, the ability to inspire and organise learning processes for others. Awareness of the unity of the animal world, and respect for ethics. The ability to cooperate and work in a group on a given project. The ability to listen and respond to questions using clear language. |
| Content of the programme | Aquaristics – the history of aquaristics. Selected legal provisions regarding aquaristics. Biotope aquariums: in Asia, Africa, South, Central and North America. Cold water aquariums. Principles of aquarium fish examination. Prophylaxis of diseases caused by adverse environmental factors. Commonly available preparations for the treatment of aquarium fish. |
| Planned didactic forms/actions/methods | Group work, discussions, demonstrations, conversations, and completion of assigned projects. |

| **Name of the programme module** | **Veterinary Haematology** |
|---|---|
| Programme module type | Optional |
| Year of the study programme | II |
| Semester of the study programme | IV |
| ECTS credits together with contact/no contact hours division | 1 (0.6/0.4) |
| A unit providing the course | Department and Clinic of Internal Diseases of Animals |
| Module objective | The aim of the module is to familiarise students with the issues of specialistic haematological laboratory diagnostics, blood preparation and the quality control of a veterinary diagnostic laboratory. |
| Educational results | Knowledge: The student is familiarized with legal acts regulating the status of a haematological veterinary laboratory; is familiar with the indications for additional specialistic tests and understands their significance in the diagnosis of internal diseases.<br>Is familiar with the methods of collection and storage of samples for specialistic laboratory tests, describes and characterises the methods for the analysis of complete blood count, bone marrow and coagulation; is familiar with the principles for carrying out the quality control of haematological tests inside and outside the laboratory; is able to name basic blood components and blood-based products; is familiar with the principles of blood preparation methods that are used for haemotherapeutic purposes; has basic knowledge of blood group serology in companion animals |
| | Skills: The student is able to accurately communicate with doctors orally,<br>is able to determine the usefulness of particular laboratory test types in specific cases of blood and hematopoietic system diseases; is able to critically evaluate the precision of achieved test results and is capable of independent verification of their quality on the basis of obtained data; is able to qualify animals for blood donation and evaluate the usefulness of blood and blood-based products for transfusion; is able to search for, understand, analyse and creatively use the necessary information from various literature sources; specifies the dangers of delivering poor quality laboratory test results and is able to specify the possible sources and stages of faulty results |
| | Social competence: understands that lifelong learning is essential; is able to inspire and organise the learning process of others; is aware of the significance of social, professional and ethical responsibility for the quality of personal work, possesses the skill of predicting material and psychological effects of personal activity and is able to take action with the intention to reduce risk; is able to cooperate and work in a group in different roles |
| Content of the programme module | Laboratory haematology: the legal status of the haematological laboratory; principles for laboratory accreditation; choosing specialist laboratory tests for particular clinical needs; collection of samples (blood, bone marrow) for laboratory tests and blood for transfusion; specialistic analytical methods in haematology, the automation of CBC tests; techniques for the preparation and special staining of cytological blood and bone marrow preparations; interpretation of specialistic haematological test results; tests for the evaluation of haemostatic function; blood preparation; blood group serology in companion animals; types of blood-based products; storage conditions and stability of blood-based products; types of laboratory errors and their sources; principles for carrying out quality control of haematological tests inside and outside the laboratory; |
| Planned didactic forms/activities/methods | Group work, lectures, discussions, demonstrations, teaching talk, the project method, self-learning |

| **Name of the programme module** | **Genetic modification and gene therapy** |
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| Programme module type | optional |
| Year of studies for a given field | III |
| Term for a given field | V |
| ECTS credits together with contact/no contact hours division | 1 (0.72/0.28) |
| A unit providing the course | The Department of Biological Bases for Livestock Production |
| Module objective | Acquainting students with chosen techniques and manipulations of DNA, as well as lines of scientific research and the exploitation of achievements of genetic engineering in Poland and across the world. |
| Educational results | Knowledge: Knowledge of selected tools and techniques applied in genetic engineering. Knowledge of the possibilities to implement genetic modification and gene therapy. |
| | Skills: The ability to critically analyse and select information connected with genetic modifications from electronic sources in particular. The ability to evaluate the achievements of genetic engineering with its downsides and/or advantages. |
| | Social competence: Awareness of the need to constantly update knowledge of genetic modification and gene therapy. |
| Content of the programme module | The tutorials cover the issues of genetic manipulations. Practical classes in the laboratory of molecular biology (students perform selected analyses in genetic modifications). The implementation of genetic engineering in basic and applied examinations. Current issues, practical application and vital advances in transgenesis, somatic cloning (cloning versus transgenesis) and gene therapy. Therapeutic possibilities of stem cells. Current knowledge of gene therapy - application. Examples of genetically modified organisms. The use of transgenic organisms in medicine. Transgenic animals as bioreactors. Legal regulations on genetic modifications in Poland and the European Union. Genetic manipulations in perspective. |
| Planned didactic forms/actions/methods | Laboratory classes, tutorials, discussion classes, group work, presentation of personal projects. |

| **Name of the programme module** | **Biomaterials** |
|---|---|
| Programme module type | Optional |
| Year of studies for a given | III |
| Term for a given field | V |
| ECTS credits together with contact/no contact hours division | 1 (0.6/0.4) |
| A unit providing the course | Department and Clinic of Animal Surgery |
| Module objective | The aim of the module is to teach students the basic principles of diagnosis and management in the recognition of neurological deficits and the skill of linking neurological symptoms to homeostasis and metabolic disorders |
| Educational results | Knowledge:<br>1. Has basic knowledge of pathophysiology, implantology, biomechanics<br>2. Has broad knowledge of how the body reacts to implants |
| | Skills:<br>1. Independently qualifies a patient for the procedure of implanting biomaterials<br>2. Is able to select the appropriate biomaterial for a given tissue and expected therapeutic effect<br>3. Has the ability to react if an implant is rejected |
| | Social competence:<br>1. Is able to cooperate and work in a group<br>2. Is aware of the significance of social, professional and ethical responsibility for the health of animals<br>4. Is aware that lifelong learning and self-improvement in the professional field are essential |
| Content of the programme module | Selected issues from the scope of the structure, properties and construction of biomaterials used in medicine and veterinary medicine. Indications for using implants to join osseous tissue together, to reconstruct osseous tissue, surgical suture, vascular prostheses, lens and eyeballs prostheses, dental implants. Therapeutic management schemes for the rejection of implants. |
| Planned didactic forms/activities/methods | Lectures, discussions with students |

| **Name of the programme module** | **Breeding and diseases of ratitae birds** |
|---|---|
| Programme module type | Optional |
| Year of studies for a given field | III |
| Term for a given field | V |
| ECTS credits together with contact/no contact hours division | 1 (0.57/0.43) |
| A unit providing the course | Division of Veterinary Prevention and Avian Diseases |
| Module objective | The aim of the module is to acquaint students with breeding and methods of handling ratitae birds, as well as with the etiology, pathogenesis, diagnostics and therapy of contagious, invasive, deficiency and metabolic diseases and poisoning in ratitae birds, as well as the principles of handling diseases of ratitae birds |

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| Educational results | Knowledge: Knowledge of environmental and nutritional requirements and methods of handling ratitae birds. Knowledge of disease entities that occur in ratitae birds together with their etiological agents, clinical course, clinical signs and anatomo-pathological lesions. Knowledge of available laboratory methods used in diagnostics of ratitae birds as well as prophylactic recommendations used to improve the breeding of ratitae birds. Comprehension of the recommended use of medicine in the therapy of ratitae bird diseases. |
| | Skills: The ability to collect information on a given case, perform clinical and anatomo-pathological examinations on ratitae birds. The ability to prepare a prophylactic therapeutic scheme in order to improve ratitae bird breeding. The ability to interpret additional (laboratory) results obtained |
| | Social competence: Understanding the need to broaden personal knowledge in order to improve the quality of actions taken. Awareness of the threats arising from the exposure to, and contact with a sick animal (a bird). Awareness of the social, professional and ethical responsibility for diagnostic and medicinal actions taken on a live organism, and the ability to select an appropriate method of handling animals (ratitae birds) in order to ensure their well-being |
| Planned didactic forms/actions/methods | Lectures, multimedia presentation credit for oral performance: evaluation of the knowledge of breeding and ratitae bird diseases |

| **Name of the programme module** | **Endoscopic diagnostics** |
|---|---|
| Programme module type | Optional |
| Year of the study programme | IV |
| Semester of the study programme | VIII |
| ECTS credits together with contact/no contact hours division | 1 (.6/.4) |
| A unit providing the course | Department of Epizootiology and Clinic of Infectious Diseases |
| Module objective | Teaching students knowledge regarding: the rationale for carrying out endoscopy, indications resulting from an interview, clinical examination and laboratory and imaging diagnostics. The aim of presenting the teaching material to students is to broaden their knowledge of the most common systemic diseases and to develop their manual skills in using specialistic equipment. |
| Educational results | Knowledge: Students have the knowledge of normal organ structures and organ pathologies; have knowledge of the pathomorphology of internal organs, particularly the macroscopic image of mucous membranes and their structure and function; are familiar with mechanisms causing the dysfunction of particular organs and the methods for the prevention and treatment of pathologies.<br>Skills: Students are able to carry out appropriate analysis of clinical symptoms and results of laboratory and additional tests, and to formulate a diagnosis and take an appropriate course of treatment of particular disease entities; are able to collect samples suitable for laboratory tests; show practical skill of using specialistic endoscopic equipment and auxiliary apparatus |
| | Social competence: Students are able to work together with other doctors and groups; are aware of personal limitations and are able to use the advice and help of specialised units or experienced veterinary doctors |
| Content of the programme module | Indications for endoscopy and additional tests required, preparation of a patient for the procedure; construction and use of an endoscope; rhinoscopy: technique of the procedure, construction of the nose and nasal areas available for examination, the most common pathological changes; bronchoscopy: technique of the procedure, the correct image and the most common disease conditions; esophagoscopy and gastroscopy: technique of the procedure, the normal construction of the examined organs and their pathologies; duodenoscopy and colonoscopy: technique of the procedure, normal construction of the examined organs and their pathologies, evaluation of the intestinal villi and the duodenal papilla; cystoscopy: technique of the procedure, the most common pathologies; endoscopy in farm animals: discussion of differences in the adapted procedure techniques; additional tests and the technique of collecting samples (swabs, BAL, biopsies, bronchography); interpretation of results and archiving;<br>methods of foreign body removal; carrying out procedures in practice |
| Planned didactic forms/activities/methods | Lectures, discussions, multimedia presentations, films and photos of procedures, demonstrations of specialist equipment, practice-oriented classes: participation in procedures, discussion of cases, self-learning |

| **Name of the programme module** | **Clinical analytics of dogs and cats** |
|---|---|
| Programme module type | Optional |
| Year of studies for a given | VI |
| Term for a given field | XI |
| ECTS credits together with contact/no contact hours division | 1 (0.6/0.4) |
| A unit providing the course | Sub-Department of Clinical Diagnostics and Veterinary Dermatology, Department and Clinic of Internal Diseases of Animals |
| Module objective | The aim of the module is to teach students knowledge regarding the appropriate selection of laboratory tests on the basis of interview data, the clinical examination of a patient and the correct interpretation of the achieved results. Students develop the skill of using laboratory results, allowing them to manage a sick dog or cat properly. |
| Educational results | Knowledge: a student who has completed the module is familiar with basic diagnostic techniques used in clinical veterinary laboratory services, and with indications of laboratory tests and their usefulness in clinical practice |

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| | Skills: a student who has completed the module: is able to correctly diagnose a disease in a dog or cat on the basis of laboratory test results. Is able to collect samples for laboratory tests and is familiar with methods of handling samples; is able to use basic diagnostic equipment and interprets laboratory test results in the clinical practice of dogs and cats. Is able to monitor the overall health status of dogs and cats with chronic organ diseases on the basis of clinical examination and laboratory tests |
| | Social competence: a student who has completed the module: shows responsibility for decisions made regarding an animal and its owner. Has a sense of responsibility for animal welfare, and is able to use the help of specialised units from the field of veterinary sciences and related fields regarding broadly defined agriculture and environmental protection |
| Content of the programme module | The principles of collecting, labelling and submitting samples for laboratory tests in dogs and cats; pre-analytical and analytical errors; the most common laboratory test equipment in laboratory services; the principles of biological sample neutralisation; diagnostic profiles of species and organs (hepatic, muscular, cardiac, osseous); laboratory urine tests and functional assays of renal activity; parameters of the enzyme activity of serum; the examination of carbohydrate, fat and protein metabolism parameters; endocrine testing; specialistic tests; specialistic mail-order laboratories |
| Planned didactic forms/activities/methods | Didactic methods: multimedia presentations, laboratory classes, discussions, presentation and discussion of clinical examples |

| **Name of the programme module** | **Metabolic diseases of farm animals.** |
|---|---|
| Programme module type | Optional |
| Year of the study programme | V |
| Semester of the study programme | IX |
| ECTS credits together with contact/no contact hours division | 1 (0.6/0.4) |
| A unit providing the course | Sub-Department of Internal Diseases of Farm Animals and Horses, Department and Clinic of Internal Diseases of Animals, University of Life Sciences in Lublin, Poland |
| Module objective | The aim of the module is to familiarise students with the pathology, diagnosis, therapy and prevention of metabolic diseases of cattle, sheep, pigs and horses in large-scale breeding farms. |
| Educational results | Knowledge: a student who has completed the module: Knows basic clinical entities occurring in farm animals; Knows methods of clinical examination, methods and types of laboratory tests, and metabolic profiles; Knows methods for the therapy of metabolic diseases of farm animals in the subclinical stage |
| | Skills: a student who has completed the module: Is able to diagnose metabolic diseases of cattle, sheep, pigs and horses in large-scale breeding farms; collect samples for laboratory tests, carry out a simple examination and interpret laboratory test results in farm animals and horses; Use laboratory tests to monitor the overall health status of animals in large-scale breeding farms |
| | Social competence: a student who has completed the module: Shows responsibility for decisions made regarding an animal and its owner; Has a sense of responsibility for animal welfare, products used in animal nutrition and the production of animal-based food products; Is able to use the help of specialised units from the field of veterinary sciences, and related fields, regarding broadly defined agriculture and environmental protection |
| Content of the programme module | Metabolic diseases of farm animals in large-scale breeding farms<br>Basic subclinical metabolic disorders in a herd of dairy cows (ketosis, fatty liver syndrome, displaced abomasum), mycotoxins and mycotoxicoses in farm animals, equine metabolic syndrome, equine hyperlipidaemia; methods for the selection of laboratory diagnostics of metabolic diseases in a herd; monitoring metabolic diseases in a herd; therapeutic feeding in cattle diseases; the cattle's dry cycle and the occurrence of diseases; anionic diet; metabolic diseases of bovine animals; current trends in animal nutrition and the health of dairy cows; metabolic disorders in calves; pig herd management; the effectiveness of feed additives for pigs; poisoning in pigs and cattle. |
| Planned didactic forms/activities/methods | Didactic methods: multimedia presentations, laboratory classes, discussions, presentation of clinical examples |

| **Name of the programme module** | **Ultrasound examination in acute clinical conditions** |
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| Programme module type | Optional |
| Year of studies for a given | V |
| Term for a given field | X |
| ECTS credits together with contact/no contact hours division | 1 (0.6/0.4) |
| A unit providing the course | Laboratory of Radiology and Ultrasonography |
| Module objective | 1. To master structured content and practical skills in the scope of ultrasound diagnostics in acute clinical conditions of small animals.<br>2. To develop the habit of continuous self-learning, deepening and widening theoretical and practical skills. |
| Educational results | Knowledge: acquiring knowledge necessary to evaluate the results of ultrasound examination in acute clinical conditions of animals |
| | Skills: **the student** has the skills needed to interpreting ultrasound results correctly, and is able to formulate a diagnosis in the case of acute clinical conditions of animals**;** shows the skill of using ultrasound apparatus in acute clinical conditions**;** is able to produce clear case descriptions and maintain documentation in the cases of acute clinical conditions of animals |

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| | Social competence: is self-reliant in the event of the occurrence of acute clinical conditions in animals**;** is able to set priorities to implement tasks, correctly identify and resolves dilemmas related to the ultrasound examination of acute clinical conditions, observes the principles of ethics and veterinary deontology**;** is aware of personal limitations, understands that continuing professional education and self-improvement is essential |
| Content of the programme module | The specificity of ultrasound image formation in acute conditions.<br>The principles of: preparing the patient for the examination, interpreting results, maintaining the documentation of ultrasound examinations in acute clinical conditions of animals.<br>Ultrasonography in oncology, post-traumatic thoracic and abdominal conditions, and in the acute abdominal syndrome. |
| Planned didactic forms/activities/methods | Demonstrations in the form of a presentation, discussions, practical classes, practical assessment, conducting descriptions of an ultrasound examination |

| **Name of the programme module** | **Clinical pharmacology** |
|---|---|
| Programme module type | Optional |
| Year of studies for a given field | VI |
| Term for a given field | XI |
| ECTS credits together with contact/no contact hours division | 1 (0.6/0.4) |
| A unit providing the course | Division of pharmacology |
| Module objective | The objective is to acquaint students with the knowledge of veterinary pharmacology, including pharmacotherapy of selected animal diseases; practical and theoretical knowledge of the latest achievements in pharmaceutical sciences, with a particular consideration of clinical pharmacokinetics; principles of safe and rational pharmacotherapy; physiological conditions influencing the use of drugs; pathological conditions influencing pharmacokinetics and pharmacotherapy; biopharmaceutical aspects of medicine application. |
| Educational results | Knowledge of: the optimization of antibiotic therapy for diseases in various animal species, pharmacotherapy in emergencies and acute poisoning, biological availability as criteria for evaluation of the quality of a drug, methods of testing bioavailability and bioequivalence for drugs with systemic effects, standardisation of pharmacological tests, parameter analysing, analytical determination of a medicinal substance or/and the products of its biotransformation. Knowledge of pharmaceutical availability and biological availability, including: the influence of species and ontogenetic factors (physiological and pathological), influence of technological factors (form of drug, physico-chemical properties of medicinal and auxiliary substances), influence of the route of administration. Knowledge of the basics of therapeutic monitoring of drug concentrations (drugs used in veterinary science) |
| | Skills: The ability to administer drugs during pregnancy and the suckling period: the effect of pregnancy on pharmacokinetics, changes in pharmacodynamics; the placenta barrier in various animal species, the adverse effect of the drug on the foetus, classification of drug reactions during pregnancy; teratogenic substances and OTC drugs, safety of drug administration during lactation and suckling periods in various animal species. The ability to use medicine in paediatric patients: changes in pharmacokinetics, adverse effects of drugs in paediatric patients, measuring paediatric doses in various animal species. The ability to use medicine in geriatric patients: issues in geriatric therapy, errors in the treatment of geriatric patients, specificity of drug effects in the systems of old animals, the influence of pharmacodynamic changes on various systems. The ability to use medicine in patients that require monitoring (across species) – methods, therapeutic benefits, economic benefits. The ability to optimise the pharmacotherapy of particular systemic diseases in various animal species. The ability to solve pharmacotherapeutic problems in selected patients in practice. |
| | Social competence: Understanding the importance of lifelong learning, the ability to inspire and organise learning processes for others. Awareness of the social, professional and ethical responsibility for the well being of animals, and the shaping of their environment. The ability to predict the effects of a doctor's activity within public health protection, as well as the ability to take action to minimise risks |
| Content of the programme module | Recent information on the practical aspects of clinical pharmacokinetics, drug complications, measures to individualise pharmacotherapy by allowing potential adverse effects of drug interactions, the influence of pathological states, as well as the significance of age, environmental factors, time of t day, genetically conditioned differences in reactions to drugs. Issues of pharmacological treatment of females in the periods of pregnancy and lactation, pharmacotherapeutic monitoring of drug concentration as one of the most important methods of personalising treatment, the ethical problems of clinical research of new medicine, as well as modern issues of pharmacoeconomics and social pharmacology. |
| Planned didactic forms/actions/methods | Lectures, multimedia presentations, task-solving group work, discussions |

| **Name of the programme module** | **Toxicological Laboratory Analysis** |
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| Programme module type | Optional |
| Year of studies for a given field | VI |
| Term for a given field | XI |
| ECTS credits together with contact/no contact hours division | 1 (0.5/0.5) |

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| A unit providing the course | The Institute of Toxicology and Environmental Protection |
| Module objective | Acquisition of skills and knowledge of toxicological laboratory analysis (procedures and processes related to the collection of samples and preparing them for analysis, instrumental methods). |
| Educational results | Knowledge: Broad knowledge of the role of medical testing in research and development processes |
| | Skills: The ability to select and apply laboratory techniques related to collecting, preserving and preparing samples for analysis, as well as techniques and methods of instrumental analysis for the purpose of identifying toxic substances. The ability to analyse and evaluate the suitability and application possibilities of the most recent scientific achievements as far as methods used for identifying toxic substances in biological and environmental materials are concerned |
| | Social competence: The ability to act autonomously and formulate independent opinions; the ability to take responsibility for decisions and awareness of their effects, with particular attention to the decisions that affect animal and human health |
| Content of the programme module | The role of medical testing in research and development work. Classification of chemical analysis methods. Trace analysis. Quality assurance and quality inspection in research. The role of the blind trail in analytical results. Sources of contamination. Reference materials and certified reference materials. Basic stages and operations for the preparation of environmental and biological samples for analysis (techniques of sample decomposition (dry and wet), techniques of analyte extraction). 6. Spectroscopic methods – Electrothermal Atomic Absorption Spectrometry (GFAAS) and Flame Atomic Absorption Spectrometry (FAAS), Cold Vapour Atomic Absorption Spectrometry. Quantitative determination of elements in environmental and biological materials.<br>Chromatographic methods. Chromatographic separation. Types of chromatography and chromatographic techniques. Practical application of gas and liquid chromatography |
| Planned didactic forms/actions/methods | Tutorials – demonstrations, simulation, lectures, Laboratory class instrumental analysis. Preparing reports and their defence. |

| **Name of the programme module** | **Diseases of Laboratory Animals** |
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| Programme module type | Optional |
| Year of studies for a given field | VI |
| Term for a given field | XI |
| ECTS credits together with contact/no contact hours division | 1 (0.8/0.2) |
| A unit providing the course | Department of Veterinary Preclinical Sciences, Institute of Pathophysiology |
| Module objective | Acquainting students with up-to-date principles of experiments on laboratory animals and organising the vivarium, supervision over conducted experiments, specific use of rodents and rabbits in biomedical tests, principles of nutrition and handling individual species, diagnosis, treatment and prevention of diseases in laboratory animals. |
| Educational results | Knowledge: The ability to list, describe and comprehend legal regulations regarding the organisation of the vivarium, and performing experiments on animals with special reference to the medical and veterinary care in a broader sense, and performing euthanasia. Knowledge and ability to characterise animal experimental models and their usability in biomedical research. The ability to recognise and describe etiological factors, mechanisms, symptoms and transmission routes of animal-borne diseases (zoonosis) spread by laboratory animals. |
| | Skills: The ability to analyse, evaluate, argue and decide on the necessity to perform experiments on laboratory animals. The ability to single-handedly test and evaluate zoohygienic conditions of breeding of laboratory animals, and apply the principles of prevention in regards to diseases. The ability to monitor and control the health status of laboratory animals and single-handedly perform therapy in regards to deficiency, metabolic and neoplastic diseases, as well as those caused by biological agents. |
| | Social competence: Awareness of the need to studying, and the need for targeted further education in connection with constant progress in biomedical sciences. Awareness of the need for targeted education and self-improvement and ethical responsibility in regards to the use of laboratory animals in biomedical sciences. |
| Content of the programme module | The legal basis of protection and use of laboratory animals with reference to the 3R principle (replacement, reduction, refinement). Principles of nutrition and animal care, methods of monitoring the health status. Maintenance of laboratory animals in experimental units – detailed conditions. Methods of laboratory animal breeding (gnotobiotic animals – germ-free, monobiotic, dibiotic and polibiotic species; SPF animals (special pathogen free), conventional – CV1, CV). Methods of taming and principles of handling various laboratory animals. Detailed study plans. General principles of using medicine in laboratory animals. Ways of sampling biological material for research (techniques of blood collection from various species of laboratory animals, methods of collecting swabs and scrapes, probing the stomach. Principles of inhalation or injection anaesthesia of laboratory animals (methods and pharmaceuticals used in anaesthesia). Chemical and physical methods of euthanasia. Viral, bacterial, parasitic, neoplastic and metabolic diseases in individual species of laboratory animals. |
| Planned didactic forms/actions/methods | Seminars, laboratory classes, practical classes, demonstrations, multimedia presentations. |

| **Name of the programme module** | **Neoplastic transformation** |
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| Programme module type | Optional |
| Year of studies for a given field | VI |

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|---|---|
| Term for a given field | XI |
| ECTS credits together with contact/no contact hours division | 1 (0.8/0.2) |
| A unit providing the course | Department of Veterinary Preclinical Sciences, Institute of Pathophysiology |
| Module objective | Acquisition of knowledge on the role of etiological factors: systemic (genetic, metabolic and immunological) as well as environmental (physical, chemical, biological) in ontogenetics, and species susceptibility to neoplasia in different animal species. The molecular basis for the development of neoplasia in dogs, cats, horses and cattle. The significance of serine-threonine protein kinase AKT in regulating growth related processes, the specific metabolism, survival and proliferation of neoplastic cells. Molecular mechanisms of blocking neoplastic signalling. |
| Educational results | Knowledge: Comprehension and ability to profile basic pathological processes connected with carcinogenesis in animals, with the consideration of the role of intraorganic and exogenous factors. The ability to describe, explain and interpret mechanisms that underlie the basis of neoplasia and coexisting paraneoplastic syndromes at the molecular, cellular, organ and systemic level. Knowledge, understanding and ability to interpret the role of cellular transmitters in regulating processes related to the growth, metabolism, survival and proliferation of neoplastic cells. |
| | Skills: The ability to formulate, evaluate and verify systemic (including genetic, metabolic and immunological) as well as environmental circumstances in ontogenetics, and species susceptibility to the occurrence of a neoplasia. The ability to analyse and interpret the process of neoplastic transformation in animals in the aspect of metabolic, antiapoptotic interactions, proliferation, angiogenesis and metastasis. The ability to make use of dendritic cell therapy, antineoplastic autologous and allogeneic vaccinations as well as AKT kinase inhibitors in selecting an appropriate causal treatment of neoplasia in animals. |
| | Social competence: Awareness of the need for targeted further education due to an increasing threat of neoplastic diseases in people and animals. Awareness of the need for targeted education and self-improvement in the field of etiology and pathogenesis of neoplastic diseases at the molecular level. |
| Content of the programme module | Disorders of cellular signalling involving tyrosine and serine-threonine kinase AKT in the development of neoplasia. Pro-apoptotic activity of tissue transglutaminase (TGaseII) in neoplasia in cats and dogs. Cellular transmission of neoplasia – CTVT (canine transmissible venereal tumour), the contribution of TGF-β1 in inhibiting the immunocompetence of the organism. The role of body-neoplasia interaction in the invasive capacity of neoplastic cells, contribution of matrix metalloproteinases (MMPs) or their inhibitors (TIMP-2), proangiogenic factors and fibroblasts and their chemoattractants (SF/HGF).<br>lymphoma in dogs. BPV-1 and BPV-2 viruses in sarcoidosis in horses. Squamous cancer (SCC), FeSV virus induced sarcomas, FeLV virus induced leukaemia in cats. Modulating chemical carcinogenesis of hepatocytes and cholangiocytes in rats by intraperitoneal administration of diethylnitrosamine (DEN). Marking the indicators of oxidative stress and the proliferative activity of isolated rat hepatocytes exposed to DEN. |
| Planned didactic forms/actions/methods | Tutorials, laboratory classes, demonstrations, multimedia presentations, e-learning |

| **Name of the programme module** | **Diseases of Ornamental Birds** |
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| Programme module type | Optional |
| Year of studies for a given field | VI |
| Term for a given field | XI |
| ECTS credits together with contact/no contact hours division | Total of 1 including 0.63 contact hours |
| A unit providing the course | Division of Veterinary Prevention and Diseases of Birds |
| Module objective | Acquainting students with the etiology, pathogenesis, diagnostics, specific and non-specific prophylaxis and therapy of contagious, invasive, deficiency, and metabolic diseases as well as poisoning in ornamental birds. |
| Educational results | Knowledge: Knowledge of disease entities that occur in birds, their etiological agents, clinical course, clinical signs and anatomo-pathological lesions. The ability to characterise methods, laboratory techniques and materials used in the diagnostics of disease entities. Comprehension of recommendations as to designing prophylactic schemes for bird diseases, as well as the use of medicine in the therapy of bird diseases. |
| | Skills: The ability to collect information on a given case, perform clinical and anatomo-pathological examinations of a bird. The ability to organise prophylactic schemes for contagious diseases for a given flock of birds. The ability to interpret additional results (laboratory) obtained. |
| | Social competence: Awareness of the threats arising from the exposure to and contact with a sick animal (bird) and ability to share the knowledge outside the academia. Awareness of social, professional and ethical responsibility for diagnostic and medicinal actions made on a live organism. The ability to clearly convey information about the required and initiated treatment. |

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| Content of the programme module | Diseases of Ornamental Birds: Anatomy, physiology and principles of raising *Columbiformes, Psittaciformes, Passeriformes;* impact of nutrition and maintenance on the health status of ornamental birds and diseases resulting from malnutrition and improper maintenance; principles of conduct and methods of immobilization of given ornamental bird species during the procedure of clinical examination; chosen methods of sampling and diagnostics of viral, bacterial and parasitic diseases of ornamental birds; principles and methods of running therapies, specific and non-specific prophylaxis of diseases in *Columbiformes, Psittaciformes, Passeriformes;* principles of pigeon prophylaxis in the breeding season, flight season and moulting season; identification of sex and age in ornamental birds; handling egg bound birds, methods of anaesthesia in surgeries of ornamental birds. |
| Planned didactic forms/actions/methods | Introduction to the tutorials, multimedia presentations, films, perfecting clinical, anatomo-pathological and laboratory examinations in practice for the most popularly kept ornamental birds (psittaciformes, passeriformes, pigeons), discussions, laboratory class report |

| **Name of the programme** | **Diseases of exotic animals** |
|---|---|
| Programme module type | Optional |
| Year of studies for a given field | VI |
| Term for a given field | XI |
| ECTS credits together with contact/no contact hours division | 1 ECTS (0.5/0.5) |
| A unit providing the course | Department of Parasitology and Invasive Diseases, Institute of Biological Bases of Animal Diseases |
| Module objective | Students learn the skills of diagnosing, treating, and preventing diseases of amphibians and reptiles. |
| Educational results | Knowledge: Knowledge of the anatomy and physiology of reptiles and amphibians. Knowledge of diagnostics and therapy of reptiles and amphibians. Knowledge of basic prophylactic principles of amphibians and reptiles |
| | Skills: The ability to perform a clinical examination of an amphibian or reptile and to make a diagnosis. The ability to apply appropriate treatment of basic disease entities and suggest a suitable prophylaxis. |
| | Social competence: Awareness of the significance of amphibians and reptiles as the source of potential zoonosis and other threats. |
| Content of the programme module | Anatomy of snakes, lizards and turtles, thermoregulation and the role of light for reptiles. Post-mortem examination in reptiles. Clinical diagnostics in reptiles. Non-contagious diseases of snakes, lizards and turtles resulting from breeding and feeding errors, metabolic diseases, the most frequent injuries, burns in reptiles, anorexia in reptiles. Veterinary complaints connected to hibernation and aestivation of reptiles. Contagious diseases – bacterial, viral, fungal and parasitic diseases of snakes, lizards and turtles (protozoan, trematode, tapeworm, nematode, pentastomida, acari and tick infections; basic parasitic examinations). Primary veterinary issues connected with the reproduction of reptiles, diagnostics, differentiation and procedures for pre- and pos–ovulation astriction in reptiles, incubation of reptile eggs). Basic principles of reptile therapy. Basic surgical procedures performed on reptiles. Discussions of clinical cases. |
| Planned didactic forms/actions/methods | Tutorials, multimedia presentations, live demonstrations, practical classes (including cross-sections, clinical examinations, parasitological examinations |

| **Name of the programme module** | **Clinical analytics of farm animal and horse diseases** |
|---|---|
| Programme module type | Optional |
| Year of studies for a given | VI |
| Term for a given field | XI |
| ECTS credits together with contact/no contact hours division | 1 (0.6/0.4) |
| A unit providing the course | Department and Clinic of Internal Diseases of Animals, Sub-Department of Internal Diseases of Farm Animals and Horses, University of Life Sciences in Lublin, Poland |
| Module objective | The aim of the module is to provide students with the theoretical and practical knowledge of laboratory tests that help formulate the correct diagnosis, and monitor treatment. The module also aims to teach students the skills of choosing and interpreting test results in horses and domestic ruminants for future professional purposes. |
| Educational results | Knowledge: a student who has completed the module: Knows basic clinical entities occurring in farm animals and horses. Knows methods of clinical examination, methods and types of laboratory tests, and organ-specific test panels |
| | Skills: a student who has completed the module: Is able to diagnose diseases in farm animals and horses on the basis of an interview, clinical examination and laboratory tests. Is able to collect samples for laboratory tests and is familiar with the methods of handling samples; is able to interpret laboratory test results in farm animals and horses. Is able to monitor the overall health status of animals in large-scale breeding on the basis of a clinical examination and laboratory tests |
| | Social competencies: a student who has completed the module: Shows responsibility for decisions made regarding an animal and its owner. Has a sense of responsibility for animal welfare, products used in animal nutrition and the production of animal-based food products, and is able to use specialised units from the field of veterinary sciences and related fields regarding broadly defined agriculture and environmental protection for help |

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| Content of the programme module | Principles for collecting samples for laboratory tests; principles of submitting samples for tests; pre-laboratory errors, analytical errors; the apparatus used in laboratory tests; essential laboratory equipment; the methods of biological sample neutralisation; diagnostic profiles of species and organs; laboratory urine tests based on clinical examples; determining enzyme activity of the serum; the examination and interpretation of carbohydrate, fat and protein metabolism; acute-phase proteins; the significance of determining of acute-phase proteins; protein electrophoresis; endocrine and functional testing; the examination of mineral metabolism parameters; the analysis of vitamin concentration tests; specialist tests; specialist mail-order laboratories; metabolic profiles of herds; the analysis of milk performance results (tables) |
| Planned didactic forms/activities/methods | Didactic methods: multimedia presentations, laboratory classes, discussions, presentation and discussion of clinical examples |

| **Name of the programme module** | **Clinical Endocrinology** |
|---|---|
| Programme module type | Optional |
| Year of the study programme | VI |
| Semester of the study programme | XI |
| ECTS credits together with contact/no contact hours division | 1 (0.66/0.34) |
| A unit providing the course | Department and Clinic of Internal Diseases of Animals |
| Module objective | To master the principles of using clinical and additional methods for endocrine diagnosis in animals and the knowledge regarding the diagnosis and treatment of diseases of the endocrine system in domestic animals. |
| Educational results | Knowledge: a student who has completed the module knows the basic methods of clinical and additional endocrine tests; knows the most relevant diseases of the endocrine system of domestic animals. |
| | Skills: a student who has completed the module: is able to diagnose endocrine system disorders in domestic animals; is able to collect samples for laboratory tests and is familiar with the methods for handling samples; is able to interpret the results of additional endocrine tests.<br>Is able to monitor the state of an animal in regard to endocrine system diseases on the basis of a clinical examination and the results of additional endocrine tests. |
| | Social competence: a student who has completed the module: is aware of personal responsibility for decisions regarding an animal and its owner; has a sense of responsibility in regard to providing the animal owner with information on the health state of the patient and, at the same time, is able to use the help of specialised scientific and treatment facilities in the scope of veterinary endocrinology |
| | The endocrine system in the clinical context; the basics of endocrine analysis; major endocrinopathies affecting the pituitary, adrenal and thyroid gland, and the pancreas and gonads in companion animals; other hormonal issues related to internal diseases and obesity; hormonal aspects of pain; major endocrinopathies of fur animals; major endocrinopathies of farm animals and horses. |
| Content of the programme module | Multimedia presentations, films, presentation of patients, discussions |
| Planned didactic forms/activities/methods | Auditory classes in the form of a discussion seminary, diagnosis and analysis of clinical cases presented by students |

| **Name of the programme module** | **Geriatrics of dogs and cats** |
|---|---|
| Programme module type | Optional |
| Year of the study programme | VI |
| Semester of the study programme | XI |
| ECTS credits together with contact/no contact hours division | 1 (1.0/0.0) |
| A unit providing the course | Department and Clinic of Internal Diseases of Animals |
| Module objective | The purpose of the module is to teach students the skills of independent, therapeutic management of chronic and terminal conditions in geriatric dogs and cats, and to teach students the ability to make decisions on euthanasia. |
| Educational results | Knowledge:<br>W1. acquires the knowledge necessary to carry out: clinical examinations of animals according to the clinical evaluation plan, in-depth analysis (assessment) of clinical symptoms, diagnosis of anatomo-pathological changes, assessment of laboratory and additional tests, diagnosis in regard to differential diagnosis, therapeutic and/or preventive procedures, monitoring of the health status of a group of animals in the cases of both small-scale and large-scale breeding, appropriate action in the identification of compulsory notifiable diseases |

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| | Skills: possesses the skill of: collecting interview data, carrying out clinical examinations, performing in-depth analysis and correct interpretation of clinical symptoms, anatomo-pathological changes, laboratory and additional test results, formulating a diagnostic statement with the consideration of differential diagnosis, and carrying out therapeutic and preventive procedures; the student is able to choose and apply laboratory techniques, collect samples for tests, and analyse and interpret results of the tests in order to evaluate the health status of animals and their environment; demonstrates the skill of effective communication with customers, other veterinary doctors, supervising office and body staff members, and staff members of national and local authorities |
| | Social competencies: The student is capable of independent action, formulates personal opinions, assumes responsibility for decisions made, and is aware of their effects, particularly decisions influencing human and animal health; is able to set priorities to implement tasks, correctly identifies and resolves dilemmas related to the profession, observes the principles of ethics and veterinary deontology |
| Content of the programme module | The seminar includes discussions on: current ageing theories and the impact of ageing on organism systems, care programmes for healthy elderly animals, methods for the assessment of pain and methods for pain treatment.<br>The practical classes include: clinical examination of dogs and cats that is carried out independently by students, specification of additional tests, formulation of diagnosis, and analytic evaluation of cases. The classes may also include making the decision on euthanasia in justified cases. Analysis and discussion of cases in the aspects of veterinary medicine, law and professional ethics. |
| Planned didactic forms/activities/methods | Auditory classes in the form of discussion seminars<br>Laboratory classes in the form of independent examination, diagnosis and analysis of clinical cases presented by students |

| **Name of the programme module** | **Rodents as pets - pathology and therapy** |
|---|---|
| Programme module type | Optional |
| Year of the study programme | VI |
| Semester of the study programme | XI |
| ECTS credits together with contact/no contact hours division | 1 (0.70/.3) |
| A unit providing the course | Department of Epizootiology and Clinic of Infectious Diseases |
| Module objective | The aim of the module is to familiarise students with the basics of pathology and therapy of rodents, rabbits and other small animals that are kept as pocket pets. |
| Educational results | Knowledge: a student who has completed the module:<br>Knows the basic principles of keeping small mammals as pocket pets both in the physiological state and in the cases of illness<br>Knows basic data on physiology and pathological changes in small mammals<br>Knows basic clinical entities occurring in small mammals that are kept as pocket pets<br>Knows the basics of therapy of small mammals that are compliant with the applicable Western standards and utilise modern drugs |
| | Skills: a student who has completed the module:<br>Is able to recognise small mammal species and determine the sex and age of a patient; is able to carry out a clinical examination<br>Is able to diagnose basic diseases of small mammals<br>Is able to collect samples suitable for laboratory tests and is familiar with the methods of handling samples<br>Is able to perform an autopsy of a small mammal |
| | Social competencies: a student who has completed the module:<br>Is aware of personal responsibility for decisions regarding the animal and its owner<br>Is able to cooperate in a group, and has a sense of responsibility towards other group members<br>Is able to set task priorities that are required for work in an outpatient clinic<br>Is aware of personal limitations and is able to use the advice and help of specialised units and experienced doctors |
| Contents of the education module | Pathology and therapy of small mammals: – recognition of the species, age and sex of the animals, – detailed data on the conditions for keeping and feeding the animals, both in the physiological state and in the cases of illness, – basics of physiology and pathology of small mammals, – basic clinical entities occurring in small mammals kept as pocket pets, – basics of therapy of small mammals that are compliant with Western standards and utilise modern drugs, – first aid and elements of intensive care, – collection of clinical samples from small mammals, – autopsy of small mammals. |
| Planned didactic forms/activities/methods | Didactic methods: lectures, multimedia presentations, laboratory classes, clinical practice, discussions |

| **Name of the programme module** | **Clinical neurology and neurosurgery** |
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| Programme module type | Optional |
| Year of the study programme | VI |
| Semester of the study programme | XI |
| ECTS credits together with contact/no contact hours division | 1 (0.6/0.4) |

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| A unit providing the course | Department and Clinic of Animal Surgery |
| Module objective | The aim of the module is to teach students the basic principles of diagnosis and management in the case of the recognition of neurological deficits, and the skill of linking neurological symptoms to homeostasis and metabolic disorders. The module also aims to familiarise students with basic veterinary diagnostic and neurosurgical procedures. |
| Educational results | Knowledge: The student has basic knowledge of physiology, pathophysiology, normal and topographic anatomy regarding the nervous system in animals; is familiar with the nervous system-related disease entities occurring in animals; shows knowledge of basic neurological examination methods; is familiar with and comprehends the basic concepts of veterinary neurology |
| | Skills: The student performs neurological examinations in animals individually; carries out the analysis of a neurological examination under the supervision of an advisor; is able to implement procedures with the use of appropriate diagnostic methods and techniques in order to precisely diagnose a disease; is able to choose appropriate treatment under the supervision of an advisor, and is familiar with basic surgical techniques in animal neurosurgery |
| | Social competencies: The student is able to cooperate and work in a group; is aware of the significance of social, professional and ethical responsibility for the health of animals; understands that lifelong learning is essential; is aware that lifelong learning and self-improvement in the professional field are essential |
| Content of the programme module | Selected issues in neurophysiology, anatomy and histology in regard to clinical aspects and the characteristics of species; methods for carrying out both a brief and a detailed neurological clinical examination, including additional tests; basic drugs used in central and peripheral nervous system trauma; principles for the pharmacological treatment of nervous system diseases; surgical procedures of particular spinal cord sections and peripheral nerves; symptoms and treatment of neurological disorders affecting the urinary system. |
| Planned didactic forms/activities/methods | Lectures, discussions with students, practical classes, multimedia presentations |

| **Name of the programme module** | **Veterinary oncology** |
|---|---|
| Programme module type | Optional |
| Year of the study programme | VI |
| Semester of the study programme | XI |
| ECTS credits together with contact/no contact hours division | 1 (0.6/0.4) |
| A unit providing the course | Department and Clinic of Animal Surgery, Faculty of Veterinary Medicine, University of Life Sciences in Lublin, Poland |
| Module objective | Surgical treatment of the most common neoplastic diseases of domestic and non-domestic animals; possibilities in regard to the prevention of neoplastic diseases and the management of neoplastic development. |
| Educational results | Knowledge:<br>Has knowledge regarding the formation mechanisms of pathophysiological changes at the subcellular, cellular, tissue, organ and system level, and knows their consequences for the functioning of an animal's body<br>Has knowledge regarding the mechanisms and routes of action of particular drug groups and their disposition in the body, their interactions and therapeutic and side effects |
| | Skills:<br>Is able to describe environmental and systemic factors, the etiologic agents and developmental mechanisms of diseases in animals and use knowledge on the subject to carry out preventive, diagnostic and therapeutic procedures<br>Possesses the skills of: collecting interview data, carrying out clinical examinations in accordance with the plan of a clinical examination, performing in-depth analysis and a correct interpretation of clinical symptoms, anatomo-pathological changes, laboratory and additional test results, formulating diagnosis (including differential diagnosis) and carrying out therapeutic and preventive procedures |
| | Social competence:<br>Understands that lifelong learning is essential;<br>is aware of personal limitations, understands that continuing education and self-improvement are essential in the field of the profession; is able to inspire and organise the process of teaching others; is aware of the possibilities of participation and involvement in professional and non-professional associations |
| Content of the programme module | The skill of diagnosing and differentiating neoplastic changes, TNM classification; methods and techniques of surgical management of various types of neoplasia according to their location and pathomorphological characteristics: chemotherapy, cryotherapy, surgery (exploratory, preventive, reconstructive and palliative surgical procedures). |
| Planned didactic forms/activities/methods | 1. Multimedia presentations<br>2. Carrying out oncology procedures in practice<br>3. Monitoring anaesthetics of oncological patients in practice<br>4. Discussions with students<br>Laboratory classes, active discussions of the principles for oncologic surgical procedures and monitoring a patient during anaesthesia |

| **Name of the programme module** | **Pediatrics with elements of behaviour of the dog and cat** |
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| Programme module type | Optional |
| Year of the study programme | VI |
| Semester of the study programme | XI |
| ECTS credits together with contact/no contact hours division | 1 (.6/.4) |
| A unit providing the course | Department and Clinic of Internal Diseases of Animals |
| Module objective | The purpose of the module is to teach students the skills to manage dogs and cats during the period of growth and development, and to practice the skill of evaluating and correcting inappropriate behaviour in young animals. |
| Educational results | Knowledge: The student acquires the knowledge necessary to carry out: clinical examinations of an animal accordingly with the clinical evaluation plan, in-depth analysis (assessment) of clinical symptoms, diagnosis of anatomo-pathological changes, assessment of laboratory and additional tests, diagnosis in regard to differential diagnosis, therapeutic and/or preventive procedures, monitoring the health status of a group of animals in the case of both small-scale and large-scale breeding, appropriate action in the identification of compulsory notifiable diseases |
| | Skills: The student possesses the skill of: collecting interview data, carrying out clinical examinations, performing in-depth analysis and correct interpretations of clinical symptoms, anatomo-pathological changes, laboratory and additional test results, formulating a diagnostic statement with the consideration of differential diagnosis, and carrying out therapeutic and preventive procedures, is able to choose and apply laboratory techniques, collect samples for tests, and analyse and interpret results of the tests in order to evaluate the health status of animals and their environment; is able to produce a clear case narrative and maintain documentation in accordance with applicable rules and regulations, and in a form that is comprehensible both to the owner and to other doctors; shows the skill of preparing decisions and reports at the request of a court or state, local or professional authority |
| | Social competence: The student is capable of independent action, formulates his or her own opinions, assumes responsibility for decisions made and is aware of their effects, including decisions influencing human and animal health; is aware of personal limitations, understands that continuing education and self-improvement is essential in the field of the profession; is able to inspire and organise the process of teaching others; is aware of the possibilities of participation and involvement in professional and non-professional associations |
| Content of the programme module | The seminar includes discussions on the normal growth and development of young animals, care programmes for healthy animals, and presents appropriate models of behaviour in dogs and cats. The practical classes include: clinical examinations of dogs and cats that are carried out independently by students, specification of additional tests, formulation of a diagnosis, and analytic evaluation of the case. In the case of healthy animals, the practical classes include giving animal owners advice on diet, activity and prevention against infections. Analysis and discussion of cases in the aspects of veterinary medicine, law and professional ethics. |
| Planned didactic forms/activities/methods | Auditory classes in the form of a discussion seminar: Laboratory classes in the form of independent examinations, diagnosis and analysis of clinical cases presented by students |

| **Name of the programme module** | **Emergency relief in life-threatening conditions of animals** |
|---|---|
| Programme module type | Optional |
| Year of the study programme | VI |
| Semester of the study programme | XI |
| ECTS credits together with contact/no contact hours division | 1(0.6/0.4) |
| A unit providing the course | Department and Clinic of Internal Diseases of Animals |
| Module objective | The aim of the module is to teach students the diagnosis of emergency conditions and the assessment of risks resulting from different pathological conditions. |
| Educational results | Knowledge: the student shows the knowledge of basic life-saving techniques; has the basic knowledge about the support of vital functions in animals; has general knowledge of drugs that are used in life-threatening animal emergencies |
| | Skills: the student has the skills applicable for animal emergencies; has basic skills on the support of vital functions in animals; carries out both manual and mechanical cardiopulmonary resuscitation (CPR) under the supervision of an advisor; possesses the skill of choosing primary drugs used in life-threatening emergencies |
| | Social competence: the student understands that lifelong learning is essential; correctly identifies and resolves dilemmas related to the profession; is aware that lifelong learning and self-improvement in the professional field are essential; is able to cooperate and work in a group taking different roles |
| Contents of the education module | Students learning the subject are provided with the possibility to master the knowledge and basic skills to the support the vital functions in animals, the performance of manual and mechanical cardiopulmonary resuscitation (CPR) and the use of primary drugs for CPR |
| Planned didactic forms/activities/methods | Multimedia presentations, demonstrations of specialist equipment, practice-oriented classes, discussions of cases, self-learning |

| **Name of the programme module** | **Emergency radiology in small animal practice** |
|---|---|
| Programme module type | Optional |
| Year of the study programme | VI |
| Semester of the study programme | XI |
| ECTS credits together with contact/no contact hours division | 1 (0.6/0.4) |
| A unit providing the course | Laboratory of Radiology and Ultrasonography |
| Module objective | To master the theoretical knowledge and practical skills presented in the programme and allow students to discover veterinary practice and services in accordance with applicable standards. To develop the habit of lifelong learning, deepening and widening theoretical and practical skills. |
| Educational results | Knowledge: Students acquired the knowledge necessary to evaluate the results of x-rays and to formulate a diagnosis (including a differential diagnosis) |
| | Skills: Students have the skill of interpreting radiology results correctly and are able to formulate a diagnosis (including a differential diagnosis); shows the skill of using radiographic apparatus; is able to produce a clear case narrative and maintain documentation in accordance with applicable rules and regulations and in a form that is comprehensible both to the owner of an animal and to other doctors |
| | Social competence: Students are capable of independent action, formulating opinions, assuming responsibility for decisions made and are aware of their effects, particularly decisions influencing human and animal health; are able to set priorities to implement tasks, correctly identify and resolve dilemmas related to the profession, observe the principles of ethics and veterinary deontology; are aware of their limitations, understand that continuing professional education and self-improvement is essential |
| Content of the programme module | Basic principles of radiographic testing in small animals; radiographic imaging of the skeletal system in a young and mature dog and cat; developmental disorders of the skeletal system; diseases of the osteogenic period;<br>basic principles for diagnostic imaging of post-traumatic patients;<br>the ALARA principle, positioning the patient for examination, the production and processing of x-ray images, technical evaluation, artefacts; |
| Planned didactic forms/activities/methods | Demonstrations in the form of a presentation, discussions, practical classes, practical assessment, composing x-ray descriptions |