



**University  
of Veterinary Medicine  
Budapest**



# **Self Evaluation Report**

**2023**

**ESEVT VISITATION 18-22 SEPTEMBER 2023**



ÁLLATORVOSDOMÁNYI EGYESÜLET  
TUDOMÁNY, VILÁG- ÉS EUROPA-BANOKOK

NEV	ELMÉLET	NYELV	ÉRTÉKELÉS
BARBOSI JÓZSEF	1880-1885	1885-1890	1890-1895
BARBOSI JÓZSEF	1895-1900	1900-1905	1905-1910
BARBOSI JÓZSEF	1910-1915	1915-1920	1920-1925
BARBOSI JÓZSEF	1925-1930	1930-1935	1935-1940
BARBOSI JÓZSEF	1940-1945	1945-1950	1950-1955
BARBOSI JÓZSEF	1955-1960	1960-1965	1965-1970
BARBOSI JÓZSEF	1970-1975	1975-1980	1980-1985
BARBOSI JÓZSEF	1985-1990	1990-1995	1995-2000
BARBOSI JÓZSEF	2000-2005	2005-2010	2010-2015
BARBOSI JÓZSEF	2015-2020	2020-2025	2025-2030

ARANYERES SZÖVEGÉZ KAPITÁNYOK

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TANSZÉK  
ent of Chemistry  
NI 64 BOKÉMIAI TANSZÉK  
se of Physiology and Biochemistry

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# Abbreviations

<b>AB</b>	Admission Board	<b>MJF</b>	Marek József Foundation
<b>AEWC</b>	Animal Experimentation and Welfare Committee	<b>OIGP</b>	Office of Innovation and Grant Projects
<b>AQMC</b>	Accreditation and Quality Management Committee	<b>OOO</b>	Order of Organisation and Operation
<b>AUH</b>	Assembly of the Unit Heads	<b>OPAC</b>	Open Public Access Catalogue
<b>BAB</b>	Biosafety Advisory Board	<b>QA</b>	Quality Assurance
<b>BT</b>	Board of Trustees	<b>QDP</b>	Quality Development Plan
<b>CC</b>	Clinical Council	<b>PDCA</b>	Plan – So – Check – Act
<b>CE</b>	Continuing education	<b>RAP</b>	Rules of the Admission Procedure
<b>CFO</b>	Chief Financial Officer	<b>RC</b>	Rector’s Council
<b>DH</b>	Department head	<b>RE</b>	Regulation of Employment
<b>D1C</b>	Day One Competencies	<b>RG</b>	Research group
<b>EAEVE</b>	European Association of Establishments for Veterinary Education	<b>RIC</b>	Research and Innovation Committee
<b>EBVS</b>	European Board of Veterinary Specialisation	<b>ROO</b>	Rules of Organisation and Operation
<b>EC</b>	Education Committee	<b>SASL</b>	Small Animal Skills Lab
<b>EPT</b>	External Practical Training	<b>SC</b>	Students’ Council
<b>ESEVT</b>	European System of Evaluation of Veterinary Training	<b>SD</b>	Study Directorate
<b>ESG</b>	Standards and Guidelines for Quality Assurance in the European Higher Education Area	<b>SFTS</b>	Students’ Feedback on Teachers and Subjects
<b>ESL</b>	Equine Skills Lab	<b>SG</b>	Secretary-General
<b>FASL</b>	Food Animal Skills Lab	<b>SOP</b>	Standard Operating Procedure
<b>FB</b>	Facebook	<b>SSA</b>	Scientific Students’ Association
<b>FSQ</b>	Food Safety and Quality	<b>STER</b>	Study and Examination Rules
<b>HAC</b>	Hungarian Accreditation Council	<b>SVS</b>	State Veterinary Service
<b>HR</b>	Human Resources, Wage and Labour Group	<b>SU</b>	Security Department
<b>HVC</b>	Hungarian Veterinary Chamber	<b>TF</b>	Teaching Farm
<b>ICU</b>	Intensive Care Unit	<b>VPH</b>	Veterinary Public Health
<b>ID</b>	Investment Director	<b>VPN</b>	Virtual Private Network
<b>IT</b>	Information technology	<b>VRCA</b>	Vice-Rector for Clinical Affairs
<b>MIT</b>	Ministry of Innovation and Technology (now Ministry of Culture and Innovation)	<b>VRIA</b>	Vice-Rector for International Affairs
		<b>VRRI</b>	Vice Rector for Research and Innovation
		<b>VRSA</b>	Vice-Rector for Study Affairs
		<b>VTH</b>	Veterinary Teaching Hospital
		<b>UVMB</b>	University of Veterinary Medicine Budapest



# Introduction

# Introduction

The University of Veterinary Medicine Budapest (UVMB) is Hungary's only veterinary training establishment. Its roots date back to 1787 when the first department of veterinary medicine was formed at the Medical Faculty of the University of Pest, 25 years after the establishment of the world's first veterinary school. Our institution functioned as the Faculty of Veterinary Medicine of the Szent István University from the 1<sup>st</sup> of January 2000 till the 30<sup>th</sup> of June 2016. It became an independent university again on the 1<sup>st</sup> of July 2016.

Based on the decision of the Hungarian Parliament, UVMB became a foundation university on the 1<sup>st</sup> of August 2020, and the Marek József Foundation (MJF) replaced the Ministry for Innovation and Technology (MIT) as maintaining body. The main infrastructure entered on property management of the UVMB, and the education activity continues to be financed from indicators based normative state subsidies and tuition fees paid by students.

UVMB was first evaluated by EAEVE in 1995 without major deficiencies and, after eliminating two deficiencies in 2004, remained approved. The last EAEVE visitation took place in late February 2014 and resulted in accreditation. The Hungarian Accreditation Council (HAC) accredited UVMB according to the Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG) on the 30<sup>th</sup> of June 2023, and the certificate of the last successful ISO 9001:2015 audit was issued on the 15<sup>th</sup> of May 2023.

## *Main features of the Establishment*

- UVMB is Hungary's only veterinary training establishment (continuously working since the 6<sup>th</sup> of February 1787).
- In addition to the veterinary medical training programme, UVMB also has Biology BSc, Biology MSc, and Zoology Research programs; as well as PhDs in veterinary sciences, EBVS residency programs, post-graduate veterinary expert training, and several other continuing education programs.
- UVMB is in close contact with all Hungarian entities related to veterinary medicine, including the relevant ministries, authorities, veterinary chamber, private partners, and enterprises, as well as intensive connections with the public.
- Veterinary medical training is conducted in 3 languages (Hungarian, English, German), with approx. 2/3 of students participating in the foreign-language programs coming from 65 countries.
- The number of applicants to the Hungarian-language veterinary medical program is 650% of the available places.
- Large number of full and associate professors working at UVMB.
- The main campus of UVMB, including some surrounding university buildings, is located in the central area of Budapest, while some departments and units can be found on our satellite campus near the Teaching Farm (TF) in Üllő (35 km from the main campus) and the artificial insemination centre is in Martonvásár (40 km).

## *Main developments since the last Visitation*

### **Major organisational changes**

- Becoming an independent university in 2016.
- Transformation to a foundation university in 2020.

- Institute of Food Chain Science was established to reinforce teaching food safety and public health.
- Institutional reform where departments were organised into 7 subject-specific institutions.
- Our Quality Assurance system was reviewed following ESG, and new external members were involved in the Accreditation and Quality Management Committee's (AQMC) work.
- The Ethical Codex was revised, and new sensitivity training has been carried out.
- The Accreditation Director's position was created.
- Biosafety Advisory Board was established.
- Equal Opportunities Committee was established.
- Gender Equality Plan was created.
- A revised employment and advancement system was implemented according to the new University Strategy.
- The National Laboratory for Infectious Diseases of Animals, Antimicrobial Resistance, Veterinary Public Health, and Food Chain Safety was founded.

### **New buildings and major items of equipment**

- Three new lecture halls equipped with modern presentation technology were built, each with a capacity of 110 students.
- Colic and Isolation Units were opened in the Equine Clinic.
- Some major clinical equipment (CT, MR,) was purchased.
- New IT equipment and systems were purchased (IT Moodle system, 4 camera high resolution system, new laptop for each teacher, plagiarism software etc.).
- Several buildings were renovated at the TF (chicken barn, sheep, and pig unit).
- A Laboratory Animal House was built.
- Skills Labs were created.
- A New Generation Sequencing Laboratory and a Liquid Chromatography – Mass Spectrometry Laboratory was opened.
- The Student Centre was renovated.
- New reading and study rooms were formed for students.
- Smart Campus development (broadening the VPN system, set up of an own server park, introduction of online education, establishment and mandatory use of Moodle system, and recordings of lectures provided to students).
- Extension and renovation of the Pathology Unit in Üllő.
- Establishment of the new Food Animal Medicine Clinic.
- Acquisition of an artificial insemination company, Bos-Genetic Ltd.
- A centralised campus- online examination facility was formed by buying 180 laptops.
- A students' hostel was built in the TF in Üllő accommodating up 40 students.
- A property of 627 m<sup>2</sup> was bought next to the campus to house some units during the campus reconstruction.

### **Main changes to the academic program**

- A new curriculum and several compulsory and elective subjects were introduced.
- Launching Farm Practice (on-duty week) for 1<sup>st</sup> to 2<sup>nd</sup> year students.
- Moodle virtual educational system was introduced.

- The activity of the Mobile Clinic was extended.
- Organisation of regular mandatory online courses with exams for all employees (occupational safety, biosafety, quality assurance, preparation for accreditation).
- Introduction of compulsory pedagogical methodology webinar course for all teachers.
- Use of CBlue curriculum mapping software for curriculum development.
- Opening PhD programs in English in addition to the Hungarian one.
- Launching new post-graduate continuing education courses for veterinary expert training (e.g., Bee Health, Animal Welfare); as well as organisation of new short continuing education courses.
- EBVS residency programs were started.
- Veterinary assistant training was started.
- TF has been more intensively integrated into education.
- Strengthening One Health focused education in FSQ-VPH.

*Major problems encountered by the Establishment*

- There was a shortage of lecture halls, addressed by the building of new halls.
- Most units were previously understaffed, so the number of academic staff members has been increased.
- Several buildings are protected architecture and needed renovation. A reconstruction program of 190.5M € started in January 2023. Some units been moved into temporary facilities during the renovations.

The Self Evaluation Report follows the requirements set out in the ESEVT Standards for Accreditation (as approved by the EAEVE General Assembly on 30 May 2019, and amended at the Turin General Assembly, 30 September 2021).





## *Area 1.*

# **Objectives, Organisation and QA Policy**

## Area 1.

# Objectives, Organisation and QA Policy

**Standard 1.1: The VEE must have as its main objective the provision, in agreement with the EU Directives and ESG recommendations, of adequate, ethical, research-based, evidence-based veterinary training that enables the new graduate to perform as a veterinarian capable of entering all commonly recognised branches of the veterinary profession and to be aware of the importance of lifelong learning.**

**The VEE must develop and follow its mission statement which must embrace all the ESEVT Standards.**

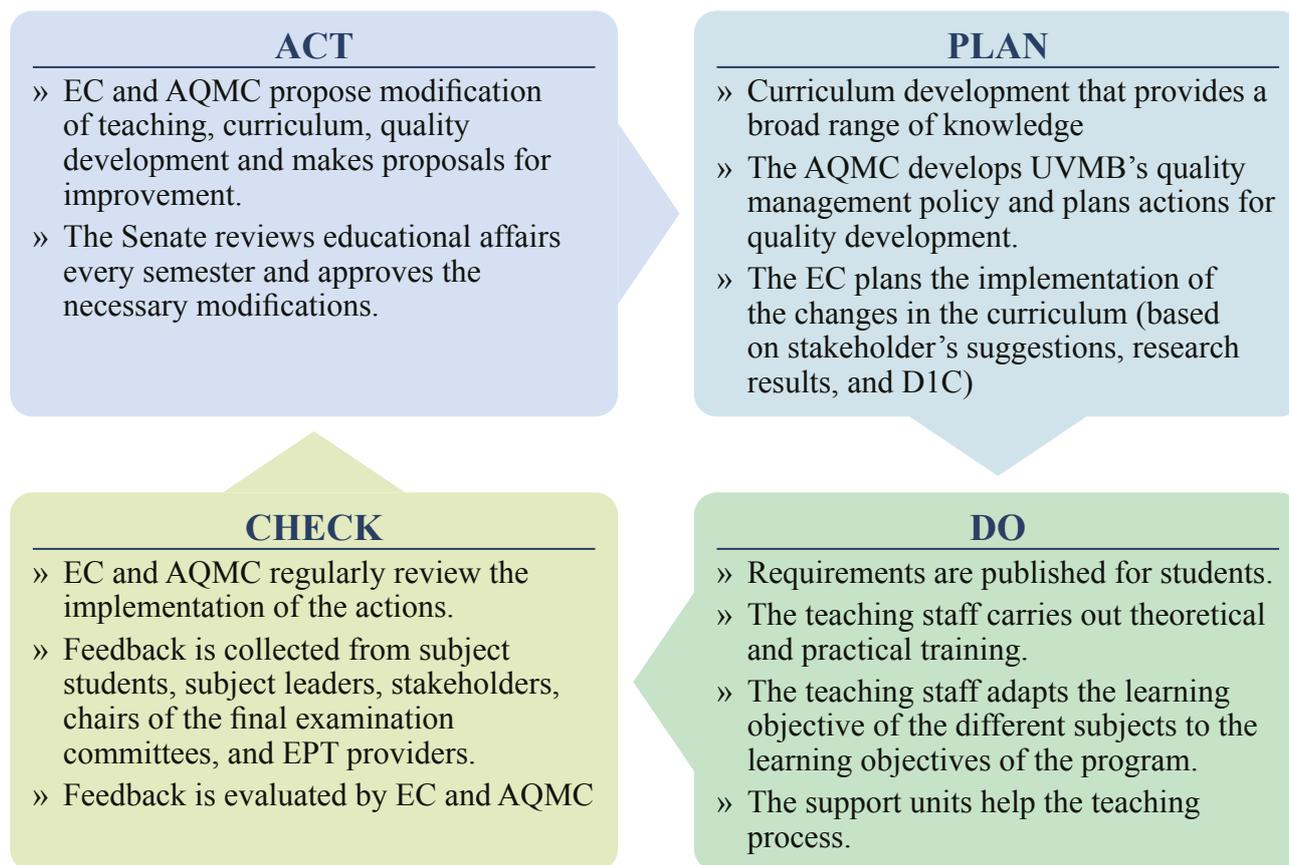
The mission of UVMB is to provide flexible, internationally competitive research- and evidence-based education that meets the challenges of an ever-changing social environment and prepares graduates for their tasks in a knowledge-based society. We aim to satisfy the demand for professionals in Hungary and abroad, as well as to function as a regional centre for scientific research, technology, innovation, and development. UVMB strives to provide academic freedom for its students by allowing them to freely choose the necessary courses and instructors within the framework of their training plan and training levels, while still bearing in mind general learning objectives and meeting the requirements of the European System of Evaluation of Veterinary Training (ESEVT). UVMB follows the ESG and is committed to providing all the necessary conditions for students to acquire Day One Competencies (D1C) in veterinary medicine. By conducting its scientific research activities UVMB creates, develops and, through its training system, transfers the professional and cultural values to students. This enables them to attain the required knowledge and skills of their particular areas, as well as to understand the ethical issues of our profession and encourage life-long learning, thus allowing UVMB to provide education and organised further training for graduated veterinarians. The objectives of UVMB are briefly summarised in our Quality Management Policy and Mission Statement (<https://univet.hu/en/about/quality-management/>).

UVMB's vision is to play a cutting-edge role in Hungary's undergraduate and postgraduate education as well as to meet the demand for veterinarians, biologists and zoologists both domestically and internationally, while still preserving the development path, spirit, and traditions of its predecessor institutions. UVMB aims to train intellectuals with a European mentality who are open and receptive to the issues of other disciplines, cultures, and societies, able to formulate well-informed and forward-looking opinions, and actively seek to participate in the solution of societal questions.

UVMB moved from a tradition-based curriculum to an output-oriented curriculum. This curriculum offers theoretical and practical knowledge that ensures the expected level of D1C and enables graduates to professionally apply their theoretical and practical knowledge in the areas of veterinary medicine, patient care, veterinary health management, veterinary public health, (One Health), digitalisation, data analysis, animal welfare, food production, agriculture, sustainability, animal husbandry, education, and research, as well as the utilisation and further development of the latest scientific achievements. UVMB also lays special emphasis on our students promoting ethical conduct, developing an economically conscious approach, and preparing for leadership and public roles. UVMB aims to prepare its students to understand the importance of preservation and rational management of natural resources, as well as protection of humanity, wildlife, and the environment. This education when combined with lifelong learning and practical training, enables graduates to work in all areas of the veterinary profession.

UVMB continuously monitors the teaching processes via several feedback mechanisms. First, students, subject leaders, presidents of the final exams and stakeholders give feedback on each semester, which is then summarised by the Vice Rector for Study Affairs (VRSA), discussed by the Education Committee (EC) and the Accreditation and Quality Management Committee (AQMC). These committees review and analyse the fulfilment of requirements and quality management cycles, with the right to submit proposals and opinions on any issues that need to be addressed. The coherence of the curriculum and the analysis of D1C acquisition is done using CBlue curriculum mapping software. The conclusions are discussed by the Senate, which can then make necessary modifications (Fig. 1).

Figure 1. PDCA Cycle Curriculum, teaching process



**Standard 1.2: The VEE must be part of a university or a higher education institution providing training recognised as being of an equivalent level and formally recognised as such in the respective country.**

**The person responsible for the veterinary curriculum and the person(s) responsible for the professional, ethical, and academic affairs of the Veterinary Teaching Hospital (VTH) must hold a veterinary degree.**

**The decision-making process, organisation and management of the VEE must allow implementation of its strategic plan and of a cohesive study programme, in compliance with the ESEVT Standards.**

UVMB is an autonomous state-recognised stand-alone foundation university with the maintainer's rights being exercised by the MJF in accordance with the Hungarian Act CCIV of 2011 on National Higher Education.

## Details of the Establishment

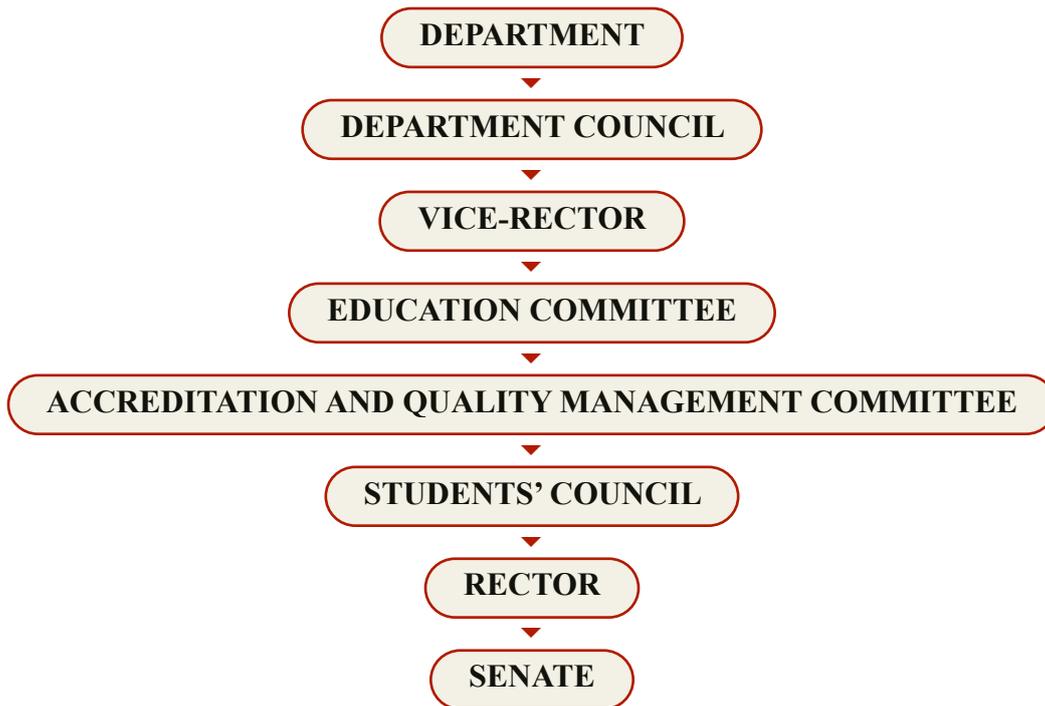
Name:	University of Veterinary Medicine Budapest (UVMB)
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Phone:	+36-1-478-4100
Website:	www.univet.hu
Email:	rektor@univet.hu or info@univet.hu
Head of Establishment (Rector):	Prof. Péter Sótónyi, DVM, PhD, DSc
Vice-Rector for International Affairs (VRIA)	Prof. Tibor Bartha, DVM, PhD, DSc
Vice Rector for Research and Innovation (VRRRI):	Ákos Jerzsele, DVM, PhD
Vice-Rector for Clinical Affairs (VRCA):	Prof. Tibor Németh, DVM, PhD, Dipl. ECVS
Vice-Rector for Study Affairs (VRSA)	Prof. László Ózsvári, DVM, PhD, MBA
Secretary-General (SG)	Márton Battay, PhD
Chief Financial Officer (CFO)	Bernadett Bendik

UVMB is a foundation university. The MJF – designated by law - exercises the founder's, owner's, and maintainer's rights. As such, it is responsible for ensuring the financial and personal conditions for the autonomous operation of UVMB and implementation of its strategic goals in terms of institutional development. In the case of UVMB, the MJF waived the right to financial disposition in favour of UVMB. Consequently, the public financing agreement is a service partnership that has been concluded between UVMB and MIT. UVMB is entitled to use the resources with full autonomy. The Public Benefit Supervisory Board supervises the operation and the economics of the university. The Board of Trustees (BT), and the Supervisory Board of the MJF and the Public Benefit Supervisory Board of UVMB help the management of the university with updating the strategic directions with their professional knowledge, since the members (See Appendix 1.1) of these boards are key stakeholders in the UVMB.

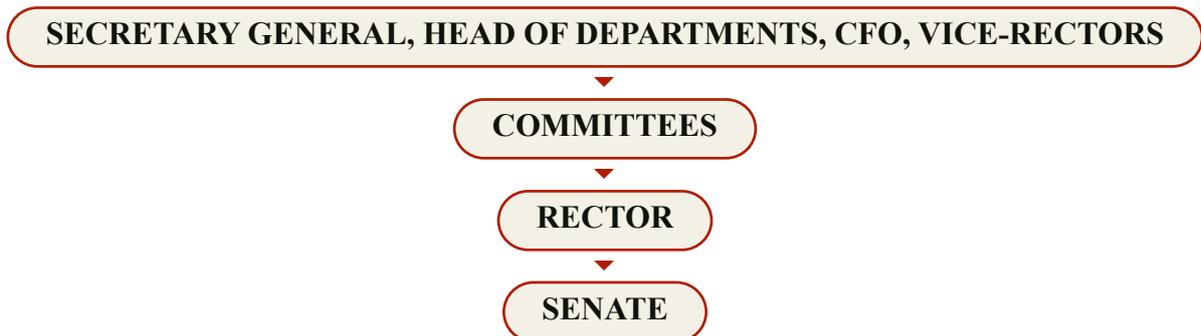
The Rector acts as the primary leader and representative of UVMB and is supported by four Vice Rectors as well as by the CFO, the SG, and the Investment Director (ID). The Senate is UVMB's decision-making, consulting, proposing, and controlling body. The Senate consists of 16 members, it has *ex officio* and elected members. The Senate and the Rector have established/may establish standing and *ad hoc* committees to help their work by analysing organisational, academic, financial, and other issues, as well as making proposals, preparing for decisions, and reviewing their implementation.

Operational principles and tasks are described in UVMB's Rules of Organisation and Operation (ROO) Volume I.: Order of Organisation and Operation (OOO). Briefly, suggestions are discussed in the appropriate committees and the decisions are made by the Senate. The BT is informed by the Rector. The decision-making process is shown in Fig. 2.

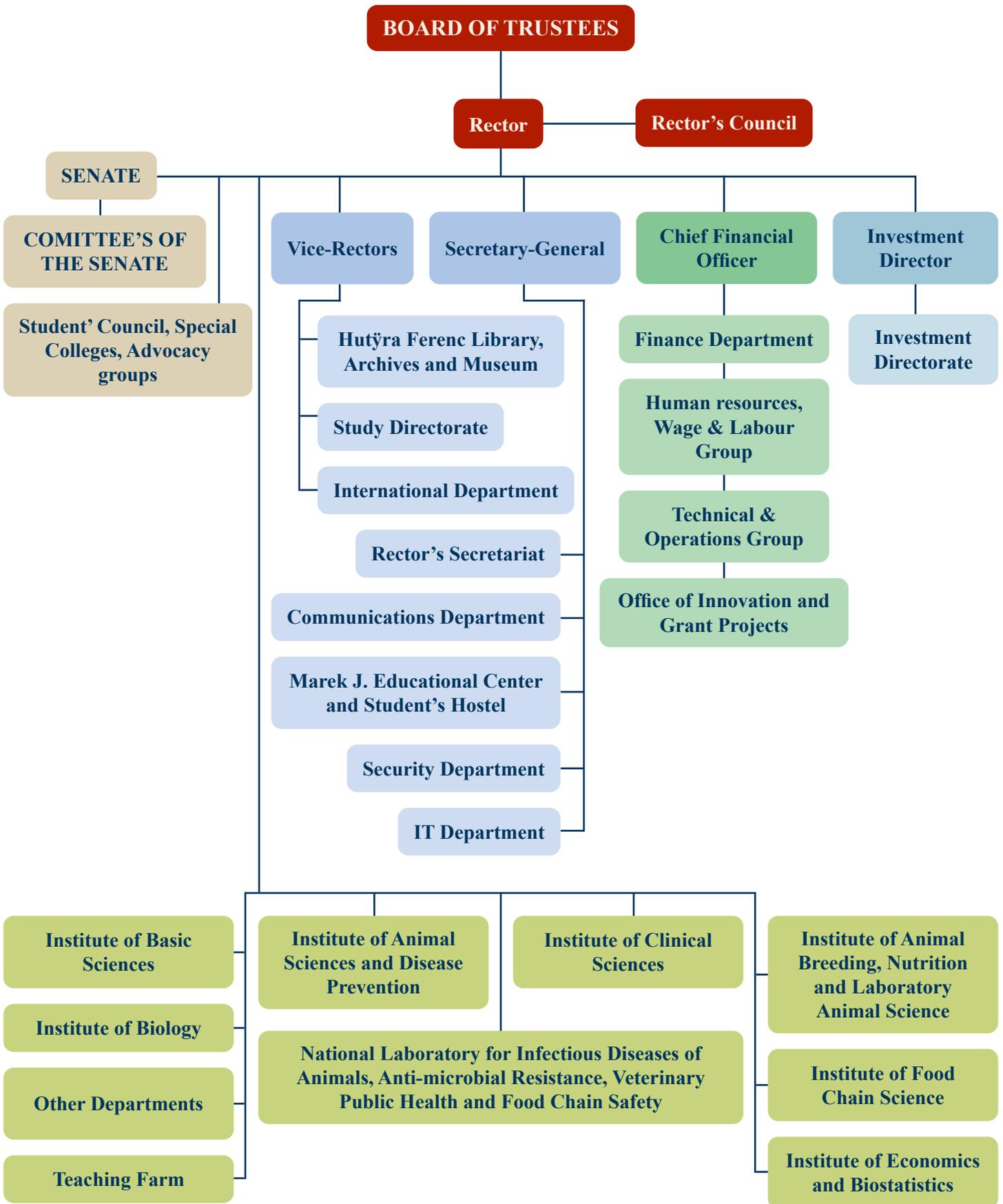
Figure 2. Decision-making process OOO (Education)



General decision-making process:



The organisational structure of the units is shown in the Fig. 3.



UVMB is comprised of 7 institutes formed by 38 departments and units (See Appendix 1.2.). The highest decision-making body of UVMB is the Senate, which may establish committees to enact its decisions. The chairs and members of these committees are elected by the Senate. Students delegated by the Students' Council (SC) are involved in every committee acting in issues that affect students. UVMB operates 18 committees (See Appendix 1.3), their SOPs are available on the homepage.

UVMB has wide international connections with veterinary schools both in Europe and overseas. It is the only VEE of Hungary, so all the counterpart schools are abroad, making international connections of utmost importance. The international connections of UVMB are maintained by bilateral agreements with other veterinary schools, membership in international veterinary organisations, activity in international projects, and student and staff mobility. UVMB is member of the EA EVE and UVMB is a founding member of the Veterinary Network for Student and Staff Mobility (VetNEST) network of the veterinary schools of Central Europe. See details in Appendix 1.4

*Name and degrees of the person(s) responsible for the veterinary curriculum and for the professional, ethical, and academic affairs of the VTH*

Veterinary Curriculum	Prof. László Ózsvári, DVM, PhD, MBA
Veterinary Teaching Hospitals	Prof. Tibor Németh DVM, PhD, Dipl. ECVS

**Standard 1.3: The VEE must have a strategic plan, which includes a SWOT analysis of its current activities, a list of objectives, and an operating plan with a timeframe and indicators for its implementation.**

UVMB has a strategic plan including SWOT analysis, list of objectives, and an operating plan. The starting point in the development process of UVMB's strategic plan is its mission and vision statement (see Standard 1.1). Every year, UVMB prepares the status report for the Senate and BT about the strategy and annual planning, considering changes in external and internal conditions.

SWOT analysis

### STRENGTHS

- High rate of foreign students (coming from 65 countries).
- High rate of academic staff members holding PhD or DSc title of the Hungarian Academy of Science.
- Education is conducted in three languages (Hungarian, English, German).
- Significant number of students involved in Scientific Students' Association (SSA) and completing high-quality research.
- High level of requirements set for academic staff.
- High admission threshold, high rate of applicants list to UVMB as their primary choice.
- High success rate in applications for research grants.
- Financial stability.
- Dedication of employers, students, and Hungarian veterinarians to UVMB.
- Having European accreditation (ESEVT).
- Involvement in the National Programme of Excellence.
- Wide range of postgraduate expert training programs offered.
- Excellent cooperation between UVMB and professional organisations.
- Good relations between the SC and UVMB's leadership.
- Wide range of high-quality clinical services, including referral clinics that are utilised in education.
- Central location, easy access for pet owners.
- Outstanding library services focused on sharing knowledge and distributing information.
- Strong regional international relations (VetNEST, CEEPUS, bilateral connections).
- A wide network of connections in domestic and international higher education.
- Accreditation from the Hungarian Accreditation Council.
- Having certified ISO 9001:2015 quality management system.

### WEAKNESSES

- Difficulties of operating the ALUMNI system.
- Low rate of foreign professors involved in education.
- Uneven information flow between organisational units and different levels.
- Slow introduction of paperless office program.
- Loading information to the website is frequently delayed.
- Many students come with little farm experience.
- The relatively low number of first case patients.
- Low number of incoming food animal patients.
- The older buildings of the campus are under heritage protection.
- Weak innovation activity.
- Difficulties in visiting slaughterhouses and farms because of biosecurity provisions.

### OPPORTUNITIES

- Becoming a reference centre based on Central European connections.
- Possibility of founding national laboratories.
- Development and launching 12th semester for extended practical training.
- Strengthening teaching Food Animal Medicine.
- Launching teaching programs on new professional areas related to the food chain.
- Widening the range of student services and improving their quality.
- Modernising UVMB's infrastructure.
- Improvement of human resources based on the high number of students involved in SSA.
- Development of an ALUMNI system.
- Building closer cooperation with partner universities.
- Development of a precision teaching farm.
- Creation of a digital food chain database centre.
- Motivating students involved in mentoring program to start PhD studies.
- Launching postgraduate programs in English.
- Supporting students, interested in food animals and food chain safety (Marek József Scholarship).
- Work experience with farm animals ("Farm Practice"; on-duty week).

### THREATS

- Low retention of junior academic staff members.
- English-language veterinary training programs launched in neighbouring countries.
- Increased patient load is needed for students to gain practical experience, especially food producing animals.
- Recruitment of international students is conducted via an agency.

The main lines of the strategy are reviewed annually. By providing high-level education, the UVMB wishes to further increase its current strong position in the international veterinary education market through the followings

- Maintaining an exceptionally high application rate for training courses;
- Maintaining a 30-50% price difference in foreign language education in relation to tuition fees compared to regional competitors;
- Increasing the number of publications in the veterinary field and clinical and food chain safety research areas to an extent that exceeds the international average level;
- High level recognition of quality assurance standards and quality management processes by obtaining and maintaining the national and international accreditations.

The strategic plan developed along the above lines and the objectives defined within it basically determine the operation of the UVMB.

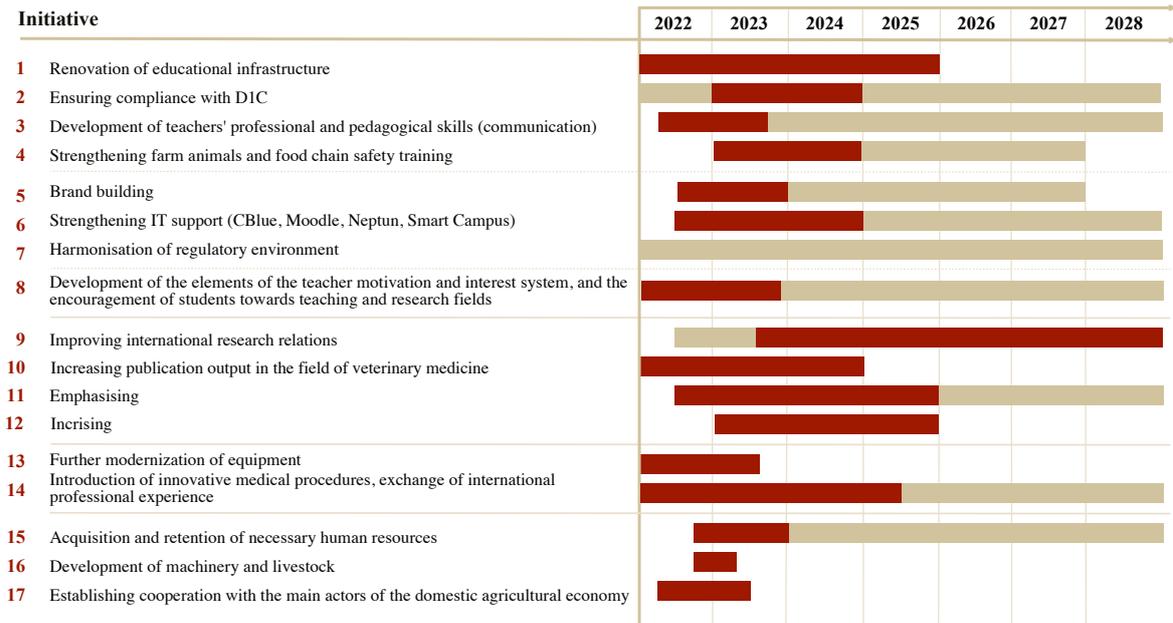
Competitive and practice-oriented veterinary education remains the primary goal, which requires continuous development in all areas. Taking into account the basic goal, the goals and objectives were broken down according to activities:

Fig. 4. Strategic goals and key initiatives

Activities	Strategic goals	Main initiatives
Education	Maintaining international and domestic position	<ol style="list-style-type: none"> <li>1 Renovation of educational infrastructure</li> <li>2 Ensuring compliance with DIC</li> <li>3 Development of teachers' professional and pedagogical skills (communication)</li> <li>4 Strengthening farm animals and food chain safety training</li> </ol>
	Development of quality assurance	<ol style="list-style-type: none"> <li>5 Brand building</li> <li>6 Strengthening IT support (CBlue, Moodle, Neptun, Smart Campus)</li> <li>7 Harmonisation of regulatory environment</li> </ol>
	Lecturer supply	<ol style="list-style-type: none"> <li>8 Development of the elements of the lecturer motivation and interest system, and the encouragement of students towards teaching and research fields</li> </ol>
Research	Development of research as a core activity Invention utilization Research supply	<ol style="list-style-type: none"> <li>9 Improving international research relations</li> <li>10 Increasing publication output in the field of veterinary medicine</li> <li>11 Emphasising innovative research, product development and brand building</li> <li>12 Increasing activity in missing scientific and research areas</li> </ol>
Clinic	Keeping the clinic with the highest level of progressivity	<ol style="list-style-type: none"> <li>13 Further modernization of equipment</li> <li>14 Introduction of innovative medical procedures, exchange of international professional experience</li> </ol>
Teaching Farm	Creating the conditions for becoming a model economy	<ol style="list-style-type: none"> <li>15 Acquisition and retention of necessary human resources</li> <li>16 Development of machinery and livestock</li> <li>17 Establishing cooperation with the main actors of the domestic agricultural economy</li> </ol>

Many initiatives have already started, and several projects are ongoing. For others UVMB allocates resources in the medium term (Fig. 5).

Fig 5. Scheduling of major initiatives



Partial and functional strategic elements are closely connected to UVMB’s strategy. In 2021, UVMB entered into an agreement with MIT within the framework of the University Financing Agreement to carry out educational and research activities. The agreement is based on the performance to the fulfilment of objective indicators. These indicators are derived from the strategy, and focus on two main areas of UVMB’s activity: such as education and research. Education success is measured by the number and performance of students, while research activity is characterised by the market, grant income, number of patents, and number of publications. These indicators ensure a system that objectively measures the performance of UVMB in the short and medium term and have a supporting role in the implementation of the strategy.

**Standard 1.4: The VEE must have a policy and associated written procedures for the assurance of the quality and standards of its programmes and awards. It must also commit itself explicitly to the development of a culture which recognises the importance of quality, and quality assurance, within their VEE. To achieve this, the VEE must develop and implement a strategy for the continuous enhancement of quality. The development and implementation of the VEE’s strategy must include a role for students and other stakeholders, both internal and external, and the strategy must have a formal status and be publicly available.**

Quality management has always been a priority at UVMB, and quality assurance (QA) measures were officially introduced a few decades ago. The presence of the QA system at UVMB (that time ISO 9001:2009) was initially certified by CertUnion in 2012, and this system is still in use today. The ESG 2015 was incorporated in the QA system of UVMB later, and it has also adapted the principles of the ESEVT SOP.

The decision-making body regarding global policy and strategy of UVMB for outcome assessment and QA, as well as the final approval body of the QA rules, is the Senate. Activities related to the maintenance and development of UVMB’s quality management system and the quality management tasks connected to UVMB’s accreditation are coordinated and carried out by the SG, the QA coordinators of the departments, the department heads, and the internal auditors, in close cooperation with the AQMC. The AQMC has a key role in preparation of the regulations concerning QA, implementation of the QA policy, the cyclical evaluation and updating of these procedures. The basis of the quality management is the Quality Assurance Regulation that can be found on our homepage

(<https://univet.hu/en/about/quality-management/quality-assurance-policy>. The QA coordinators at each department and unit are active in disseminating QA measures and educating the staff regarding QA. They are supported by the qualified auditors of UVMB. QA coordinators and auditors must complete UVMB's training and continuing education courses on an annual basis. In addition, the position of the director for accreditation was created by UVMB to ensure the coordination of preparation for different accreditations and audits.

The principles of QA are summarised in our Quality Assurance Policy (<https://univet.hu/en/about/quality-management/>). All procedures are regulated, and the regulations can be found on the homepage. Detailed descriptions of the quality management system and its operational procedure as well as the goals, evaluation, and feedback of the assessments together with the nine quality management procedures (See Appendix 1.5) are also available on the homepage.

With involvement of the QA coordinators of the departments and units an ESG-based Quality Development Plan (QDP) is prepared every year to maintain an ongoing quality enhancement system. Departments (and units) discuss topics related to the quality assurance at their quarterly meetings, and department staff are encouraged to present new ideas, goals, or tasks. After discussing and agreement on the department level the consensus is presented to the AQMC for discussion, and then to the Senate for acceptance. The implementation of objectives laid out in the Development Plan is monitored by the AQMC, and its annual Implementation Report is evaluated by the Senate to decide on necessary actions.

There are cyclical, sustainable, and transparent outcome assessment mechanisms at UVMB, which operates a wide systematic data collection. Feedback is given by students and teachers twice a year, and the opinions of members of examination committees, stakeholders, employers, and clients are also collected. This data is evaluated by different committees and then discussed by the Senate which can determine necessary actions.

The recent ISO 9001:2015 certification audit took place between the 24<sup>th</sup> and the 26<sup>th</sup> of April 2023, and the certificate was received on the 15<sup>th</sup> of May 2023. This yearly maintaining audit helps UVMB in its constant aim of QA development by running internal audits of the departments and units on yearly basis before the external audit.

The procedures and the regulations of assessing needs and satisfaction of external and internal parties are summarised in the Quality Management Directive ME-09.

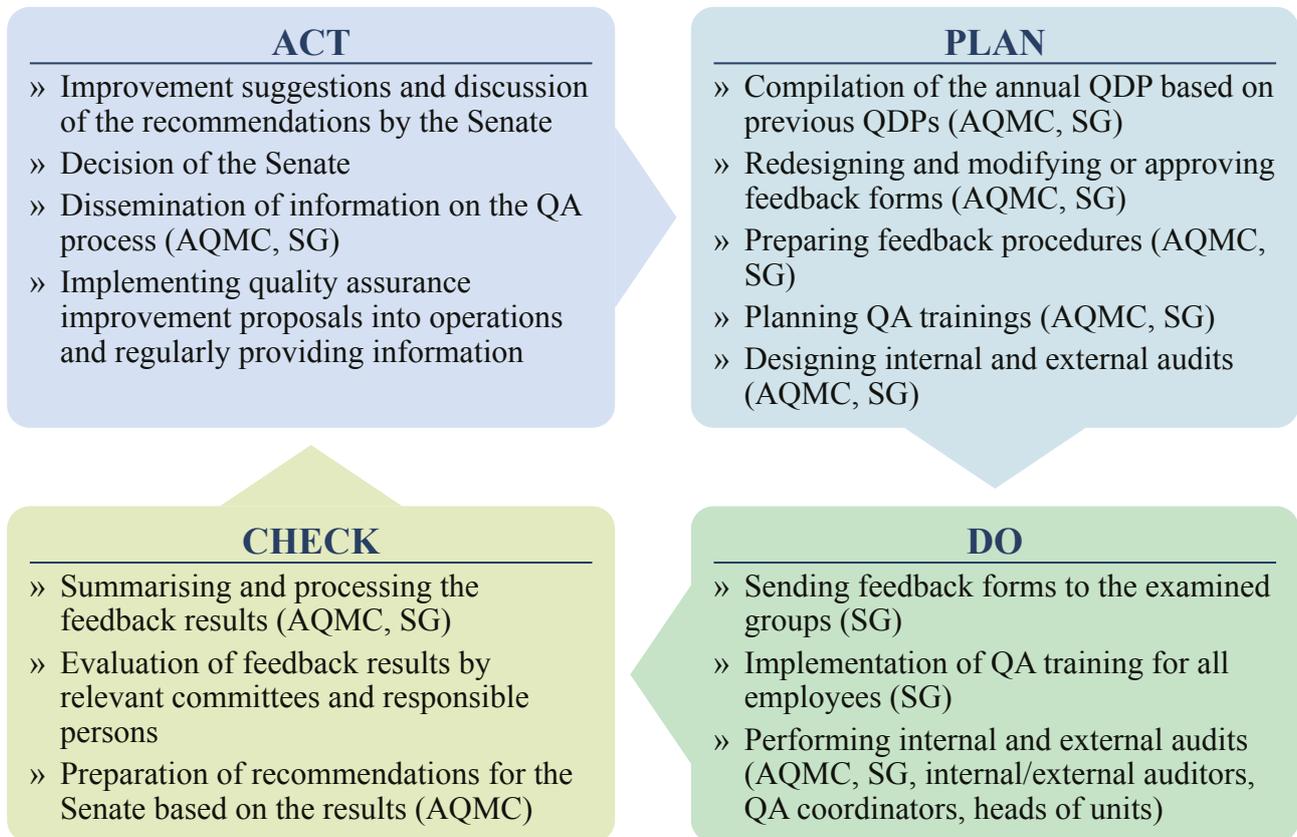
UVMB uses seven regular surveys:

- Students' Feedback on Teachers and Subjects (SFTS)
- Career Monitoring System of Graduates
- Feedback from Employers
- Feedback from Client Owners
- Survey on Employees' Satisfaction
- Survey on Students' Satisfaction
- Feedback from Subject Leaders

For the formal compulsory training of staff members on QA UVMB runs an online course with an exam, and QA coordinators of the different units also provide consultation for their colleagues on any QA issues. Action plans are always prepared involving the leader in charge of the given area (e.g.: vice rectors, CFO, representative of the SC etc.). After approval, the affected parties are informed in several different forms. For staff this is done via minutes of the Senate (on the intranet), General Assembly of UVMB, Univet Magazine, and department meetings. Students are informed through the Study Directorate (SD), SC, and class representatives. Plans are based on input information from different sources and after implementation of the plans the results are evaluated, analysed, and

the necessary correction actions are taken. UVMB prepares an ESG-based Quality Development Plan every year, then evaluates its implementation and compliance with a continuous focus on ESG Standards (Fig. 6).

Figure 6. PDCA Cycle QA Policy and Plan



**Standard 1.5: The VEE must provide evidence that it interacts with its stakeholders and the wider society. Such public information must be clear, objective and readily accessible; the information must include up-to-date information about the study programme, views and employment destinations of past students as well as the profile of the current student population.**

**The VEE’s website must mention the ESEVT VEE’s status, and its last Self Evaluation Report and Visitation Report must be easily available for the public.**

UVMB’s website is the primary universal institutional outlet and provides all the necessary information for students, staff, external partners, business companies, or interested members of the public. The objectives and mission statement can also be found on the homepage. The content of the website is managed by the Communication Group, which is supervised by the SG, but the specific pages are managed by the staff of the units responsible for the area. The website also has an Intranet, which is only accessible by the citizens of the university with a valid username and password. While the website’s public section is open to all, the Intranet’s primary function is to share content with staff members and students (e.g.: committee meeting minutes, Senate documents, internal policies, regulations etc.). In compliance with 21<sup>st</sup> century expectations, UVMB utilises social media outlets as well, including Facebook, Instagram, and TikTok. The Facebook (FB) page currently has over 9,700 followers. As well as our students, academic, and non-teaching staff, UVMB is followed by thousands of animal lovers. UVMB keeps in contact with stakeholders through multiple channels. In addition to website and social media, each UVMB committee has external members who not

only receive information but participate in the decision-making process as well. Four out of five BT members are not employed by UVMB.

In addition to the pages for current news and events, the website also has a special page for applicants (<https://univet.hu/en/education/admission/>) and already enrolled students, with special regard to freshers. The website offers detailed information on UVMB's courses, available scholarships, and research findings. In terms of study affairs, students rely on the Neptun system, an electronic student registration tool, as their primary source of information. The content of the website is complemented by circular e-mails and letters from the class representatives, Neptun system's messaging service, and study and teaching materials on Moodle. Study and teaching materials (recorded lectures, videos, notes etc.) provided for students are available on Moodle system. Key information is usually shared via the departments' message boards and/or the FB groups created for classes. The SC also has a major role as an information channel. The president of the SC regularly consults with the staff of the SD and, if necessary, the VRIR and the VRSA. UVMB uses e-mail as the primary tool for ensuring internal information flow. Management and the staff of the Rector's Office inform colleagues on a wide range of topics, such as official announcements affecting all employees, personal statements, holiday and jubilee greetings, invitations to various events, and notifications of campaigns involving our staff. In addition to the e-mail service, the quarterly Univet Magazine is also regarded as a source of written information and is made available via our website not only internally but to interested members of the public as well. The key internal verbal communication channels are the Senate meetings, the General Assemblies, and the department meetings where the staff members are informed about the latest developments and news in terms of the departments, personnel, sustainability, and other topics. UVMB is characterised by top-down communication.

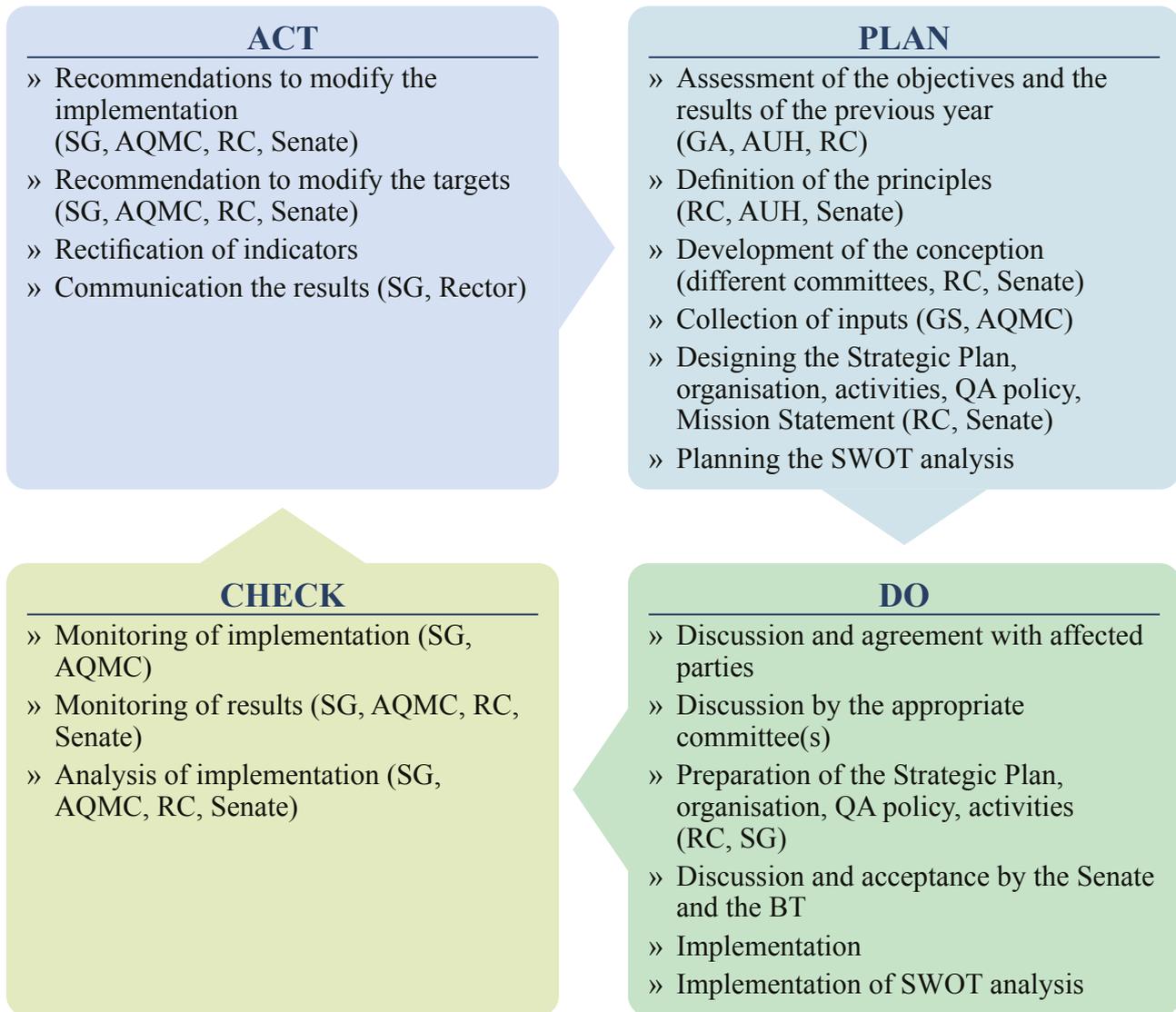
Many events (professional conferences, continuing education courses, the Job Fair, etc.) are organised to help maintain relations with our graduates, and we have also created a webpage (<https://univet.hu/en/alumni/>) and newsletter for our alumni, so they can be kept informed about the events going on in their Alma Mater. Information on the current student population is also available on the homepage, social media and Univet Magazine. UVMB's present ESEVT status, its latest Self-Evaluation Report and the Visitation Report are available on our website: <https://univet.hu/en/about/eaeev-accredited-institution/>

**Standard 1.6: The VEE must monitor and periodically review its activities, both quantitative and qualitative, to ensure that they achieve the objectives set for them and respond to the needs of students and society. The VEE must make public how this analysis of information has been utilised in the further development of its activities and provide evidence as to the involvement of both students and staff in the provision, analysis and implementation of such data.**

**Any action planned or taken as a result of this data analysis must be communicated to all those concerned.**

The Strategic Plan, the organisation, the mission statement, and the QA policy are decided by the Senate, which is the highest decision-making body of UVMB. Different inputs (suggestions from departments, academic and non-academic staff members, students, committees, employers, partners, and other stakeholders) are evaluated and discussed by the appropriate committee(s) and the version recommended by the relevant committee(s) is handed to the Senate for decision. Students and staff are informed through the channels described in Standard 1.5 Fig. 7).

Figure 7. PDCA Cycle Strategy, Organisation and Activities



**Standard 1.7: The VEE must undergo external review through the ESEVT on a cyclical basis. Evidence must be provided of such external evaluation with the assurance that the progress made since the last ESEVT evaluation was linked to a continuous quality assurance process.**

The last visitation of the ESEVT Committee was between the 24<sup>th</sup> and the 28<sup>th</sup> of February 2014 following the two-stages evaluation system. ECOVE did not identify any major deficiencies at its meeting on the 20<sup>th</sup> of May 2014, and accreditation was granted. A few recommendations were proposed to further improve the quality of veterinary education at UVMB:

The suggestions were addressed to the following areas:

1. Development of student welfare and wellbeing.
2. Improvement of the administrative activity associated with education.
3. Deepening the food chain safety approach.
4. Becoming an independent university with independent financial management to ensure further development.

To improve the above-mentioned areas, we have realised the following development projects in the past 10 years:

### **1. Development of student welfare and wellbeing:**

- Creating a Students' Well-being Program Coordinator position.
- Hiring a Harassment Officer.
- Hiring a Student Mental Health Counsellor.
- New optional subjects were launched to help the students in developing their life skills (Learning Strategies and Techniques in Medical Training, Life Skills for Veterinarians).
- SAM-Buddy peer-mentoring project: The 8-week-long program is designed to support foreign fresher students in integrating into the culture and university life with the help of senior students.
- Study-Buddy & Study-Group Finder – help students looking for a study buddy and connect the students with each other.
- Several free programs are organised for freshers at the beginning of the academic year to help their integration and connection to UVMB (Boat trip, Freshers' Camp, Freshers' Week).
- Leisure time activities are organised that are available for all students and strengthen the community (Ox Barbeque, Veterinary Sport Day, October Fest, Freshers' Ball, Equus Days, Marek Days, International Day).
- A high-speed Wi-Fi network covering the entire campus area was established.
- The study area and the opening hours of the library were extended, a study room was opened at the weekends.
- Skills Labs have been established and managed.
- Electronic content became remotely accessible via VPN for the students.
- The Student Centre and the attached cafeteria were renovated.
- New lockers were installed that students can use free of charge.

### **2. Improvement of the administrative activity associated with education:**

- Use of CBlue curriculum mapping software for curriculum development
- Implementation of online systems (e.g.: electronic filing system, MS Teams, electronic account management).
- Updating the online patient record software (Doki for Vets software in both Hungarian and English).
- Introduction of online teaching and learning systems (Moodle, MS Teams, streaming and recording lectures, Unipoll examination system etc.).
- Introduction of Logbooks.

### **3. Deepening the food chain safety approach:**

- Establishment of the Institute of Food Chain Science with its three partially independent departments in order to create a larger emphasis in this area. This institute conducts training of food safety experts, analyses food chain safety data, and carries out and publishes related research. The staff of the institute has been increased, and external speakers have been invited.
- Some compulsory and elective subjects related to food chain safety were launched (See Appendix 1.6.).

**4. Becoming an independent university with independent financial management in order to ensure further development:**

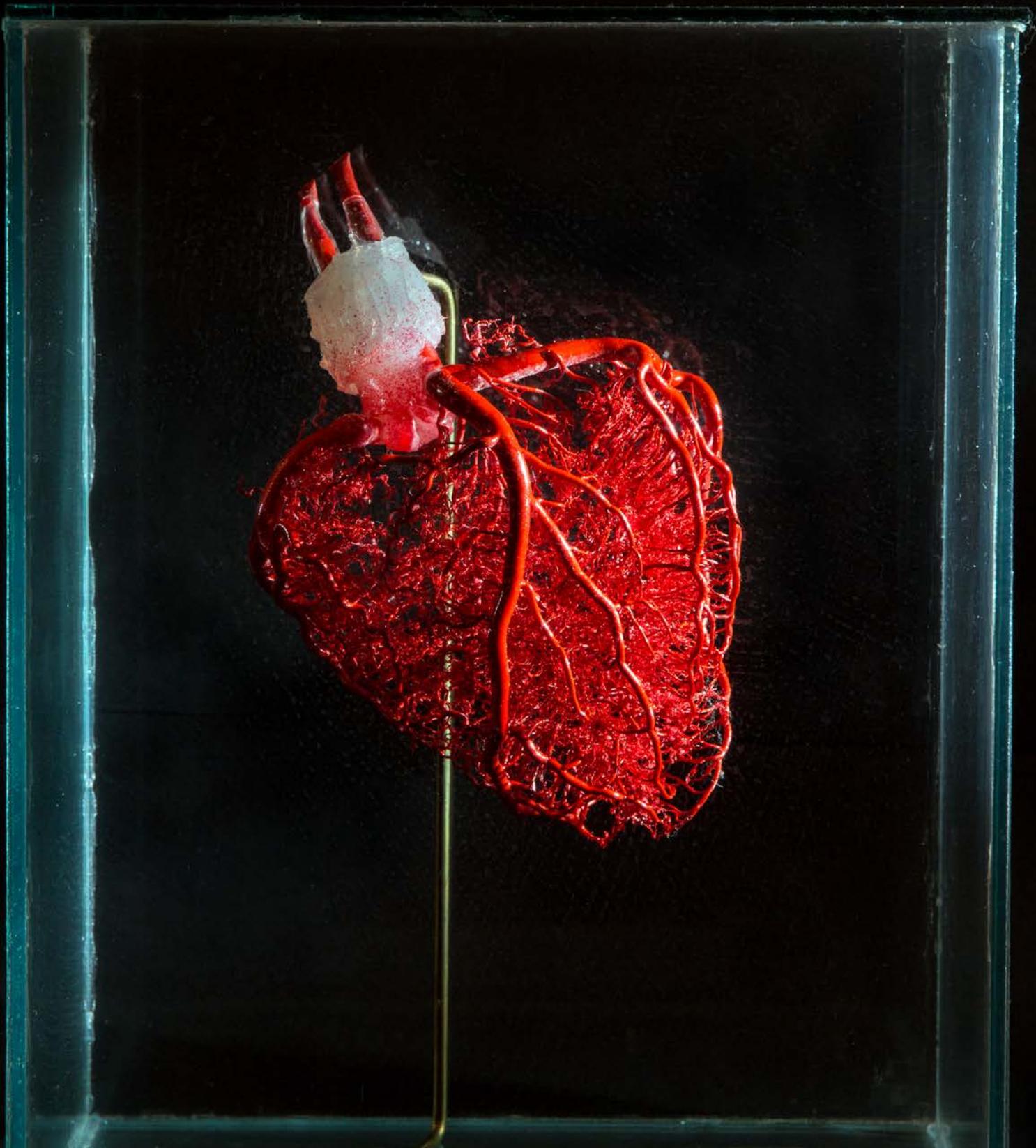
- UVMB was detached from the Szent István University on the 1<sup>st</sup> of July 2016, and regained its status as an independent institution after 16 years.
- UVMB was transformed to a foundation university on the 1<sup>st</sup> of August 2020. Since that time UVMB has been maintained by the MJF. The maintainer's rights were transferred from MIT to the Foundation's BT. The property management of the infrastructure was transferred to UVMB.
- According to the financing contract with MIT (valid till 2026) UVMB receives state funding to education and research based on quantitative and qualitative indicators.
- The salary structure of UVMB was reorganised on the 1<sup>st</sup> of January 2022.

**Comments on Area 1**

Becoming an independent and a foundation university increased self-government but also self-responsibility at UVMB. In practice, this change means that the Foundation and the experts holding positions within it support UVMB in achieving its strategic goals. Unlike other examples, the UVMB BT waived all financial resources in its contract with the government for the benefit of UVMB. This gives UVMB complete financial independence to manage the budget independently.

**Suggestions for improvement in Area 1**

Quality Assurance is an excellent tool which always helps the university to discover new possibilities of improvement, teaching skills and implementation of stakeholder's and university's citizens' opinion in UVMB's daily life. New challenges of the next years will be the switch from unit's quality assurance evaluation to UVMB's processes and procedures quality assurance evaluation.



*Area 2.*

**Finances**

## Area 2. Finances

**Standard 2.1: Finances must be demonstrably adequate to sustain the requirements for the VEE to meet its mission and to achieve its objectives for education, research and services. The description must include both expenditures (separated into personnel costs, operating costs, maintenance costs and equipment) and revenues (separated into public funding, tuition fees, services, research grants and other sources).**

UVMB's financial operation is consistently stable, largely due to the solid academic and research activity. UVMB joined the group of higher education institutions and was transformed to a foundation university in 2020. As a result, financial management became independent with an increased emphasis on for-profit activities. With this change, the system of public funding was also reconfigured. Compared to the earlier normative financing system, a more market- and customer-oriented model was adapted. Consequently, the academic area, research, and operation are funded separately. The performance of UVMB in all three areas is evaluated based on pre-defined indicators. Indicators are qualitative benchmarks that motivate UVMB to increase performance and improve quality. As a completely new element, the system now allocates resources to fund research activities, with payments being subject to performance.

The financing agreement stipulates a long-term framework with specific short-term goals defined until the 31<sup>st</sup> of December 2026. Compared to the previous financial arrangement, this structure ensures significantly more stability. Unlike in previous years, the funding agreement signed with the government on the 28<sup>th</sup> of September 2021 allows operational planning 6 years ahead. Within the 6-year cycle, pre-defined goals were set by the government in terms of academic and research. UVMB was involved in allocating annual indicators and measurement figures to these goals. The goals identify expectations regarding the institution's competitiveness, efficiency, and research activity, which are in line with the strategy of UVMB.

Over the past 3 years, the institution's leadership has placed the main emphasis on developing human resources and infrastructure. The most significant achievements were realised through the Campus Development Project which began with the renovation of the buildings in the main campus.

The teaching and support staff grew by 7% and 8% between 2020 and 2022 respectively. Personal costs have nearly doubled since 2020, and the largest salary increase was realised in the case of the teaching and research staff by approximately 100%. These measures were taken to ensure that UVMB could become the sector's most important employer in Hungary regarding labour conditions, salaries, and professional advancement.

According to the financial agreement of UVMB a defined number of Hungarian students (see details in Area 7) are enrolled, and their costs are met by the state, so they do not need to pay tuition fees. In addition to the state-subsidised students a limited number of Hungarian students are also enrolled, whose tuition fee is €7,200, while students of the English and German classes have to pay €11,560 in an academic year.

Table 2.1.1. Annual expenditures during the last 3 academic years (in Euros)\*

<i>Area of expenditure</i>	<i>2022/2023</i>	<i>2021/2022</i>	<i>2020/2021</i>	<i>Mean</i>
<i>Personnel</i>	18 054,542	16 462 595	12 194 317	15 570 484
<i>Operating costs</i>	7 420 366	6 010 653	6 037 604	6 489 541
<i>Maintenance costs</i>	1 988 522	1 941 130	1 991 582	1 973 745
<i>Equipment</i>	10 480 065	3 949 228	4 943 455	6 457 583
<i>Total expenditure</i>	37 943 495	28 363 606	25 166 958	30 491 353

\*The exchange rate of Euro is the average of its monthly exchange rates.

Personal costs make up half of the expenses of UVMB. Payroll expenditures significantly increased in the last year and the year before. This trend is expected to continue in 2023, but at a lower growth rate. The first phase of the infrastructural development project, including the renewal of the equipment, will be completed in 2023. The necessary expenses are included in the increased expenditures in 2023. The growth of operating expenses is due to changing energy prices. The gas consumption was reduced significantly, by nearly 35%, in 2023, helping to counterbalance the effect of increased prices. It is not a realistic goal to reduce electric power consumption to a level where it could compensate for the significant price increase. The costs were calculated with continued contact classes.

Table 2.1.2. Annual revenues during the last 3 academic years (in Euros)

<i>Revenues source</i>	<i>2022/2023</i>	<i>2021/2022</i>	<i>2020/2021</i>	<i>Mean</i>
<i>Public authorities</i>	24 130 358	17 746 414	7 499 189	16 458 654
<i>Tuition fee (standard students)</i>	0	0	0	0
<i>Tuition fee (full fee students)</i>	10 830 965	10 960 612	11 353 747	11 048 442
<i>Clinical services</i>	2 155 704	2 208 464	1 901 080	2 088 416
<i>Diagnostic services</i>	137 135	142 741	155 879	145 252
<i>Other services</i>	3 880 225	2 292 702	1 266 958	2 479 962
<i>Research grants</i>	7 957 347	15 942 316	8 107 594	10 669 085
<i>Continuing education</i>	576 597	536 683	428 516	513 932
<i>Donations</i>	0	0	0	0
<i>Other sources</i>	0	0	0	0
<i>Total revenues</i>	49 668 331	49 829 932	30 712 963	43 403 743

The financing structure of UVMB has changed since September 2021, and is now based on the financing agreement. This agreement sets achievable goals for UVMB by identifying indicators, measuring their accomplishments, and allocating the following year's funding accordingly. The year of 2022 was the first full year reported and measured in this framework. UVMB successfully met the expectations, so funding has been increased by nearly 10% in 2023. As the government set quite a few challenging goals even in the first period for the areas of education and research, our performance is considered to be a significant success on a national level as well. Under the agreement, the Hungarian state pays a tuition fee of €7,250 per each Hungarian state subsidised student. This amount is then complemented by additional support subject to performance. This specific amount of the latter was €6,250 in 2022, so the government provided an average amount of €13,500 per Hungarian state subsidised student in 2022/2023.

The other significant change brought by the funding agreement was that the state now also subsidises research under this contract. The achievement of the indicator-based goals is of primary importance. In addition, UVMB also generates income from clinical, R&D, and agricultural activities. All clinical and research revenues are fully reinvested in the operation and development of education and research activities. The TF's revenue provides the funding for maintaining livestock needed for the operation of on-duty farm practice of students.

Table 2.1.3. Annual balance between expenditures and revenues (in Euros)

<i>Academic year</i>	<i>Total expenditures</i>	<i>Total revenues</i>	<i>Balance***</i>
<i>2020/2021</i>	25 166 958	30 712 963	5 546 004
<i>2021/2022</i>	28 363 606	49 829 932	21 466 326

2022/2023	37 943 495	49 668 331	11 724 836
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\*\*\*Total revenues minus total expenditures

Planning is conducted on a worst-case scenario basis each year. Since the adoption of the new financing system, significant savings could be made, which will provide resources for the infrastructure development plans of UVMB for 2023-2025.

**Standard 2.2: Clinical and field services must function as instructional resources. Instructional integrity of these resources must take priority over financial self-sufficiency of clinical services operations.**

**The VEE must have sufficient autonomy in order to use the resources to implement its strategic plan and to meet the ESEVT Standards.**

UVMB ensures continuous clinical operation. Clinical operation needed for training is funded from the central budget, including basic salaries, payments related to basic operational conditions and equipment. As a result, the clinic only needs to cover the directly incurred material cost related to the patients and additional payroll costs from the clinical revenues. This system allows us to receive a significant number of patients in each clinical and field service unit. A new incentive system was introduced for clinical staff, which enables all affected employees to get a share of the clinical revenues according to a pre-determined methodology. The current system helps attracting high quality clinicians, as well as referral animals to the clinics. As a result, students can regularly see special cases.

UVMB uses its own resources to constantly fund investment (building, renovation, equipment etc.) in the value of €2.5 million per year on average. UVMB also bought Bos-Genetic Ltd., the largest bovine reproduction centre in Hungary, in 2022, to extend clinical training. Financing for the mobile clinic is the same as the intramural clinics, where its income is used for running operations, as well as being supported by UVMB (vehicles, equipment etc.).

As an independent university UVMB has complete autonomy in finances. The Finance Department headed by the CFO reports to the Rector, preparing proposals and decision supporting documents for the Rector and the Senate. The accounts related to the internal incentive system of UVMB are settled at the end of each semester. Based on the actual figures of the previous semester, the controlling group prepares the account settlement for the department head. After reviewing the numbers, each department head distributes the profit to the staff involved in the activity, based on their performance. The remuneration is paid together with their salary in 6 monthly instalments.

**Standard 2.3: Resource allocation must be regularly reviewed to ensure that available resources meet the requirements.**

UVMB began a campus development project in 2022, mostly affecting the educational facilities located on the main campus, which will be fully government funded. The first phase of the project involved the full internal restructuring of the Food Animal Medicine Clinic building near the Teaching Farm in Üllő and the installation of new facilities on an area of approximately 1,600 square metres.

As part of the Campus Development Project, the Comparative Medical Science Centre and the experimental animal house with the connected preliminary projects is planned to be built on an area of 21,300 m<sup>2</sup>, providing a prime location and technical conditions for cutting-edge research.

The digital upgrade of all lecture halls and practical rooms was completed in 2022 and 2023 with EU funding.

*Prospected expenditures and revenues for the next 3 academic years*

*Revenues:* The core activity of UVMB is education, with 80% of its revenues related to it. UVMB's

revenues have increased significantly as a result of the new financing agreement in the past two years. As of 2023, the increased resources due to the agreement with the government to finance the total campus refurbishment are to be implemented in two phases. The contract for the commitment of the €78 million funding of Phase I is already laid out, the financing agreement for Phase II with €112.5 million is under preparation.

Revenue source Th €	2022/2023	2023/2024	2024/2025	2025/2026	Mean
Net sales income	12 987	12 726	13 512	14 338	13 391
Based on financing contract and agreement	24 130	37 086	63 246	89 981	53 611
Research resources	12 551	11 478	11 877	11 919	11 956
Total revenue (€)	49 668	61 290	88 635	116 238	78 958

In terms of revenue allocation, education and research are the two main areas. Ten percent of the Net Sales Income is generated by the clinics and the TF, which does not affect profit and loss as we provide clinical services at cost, and revenue from the teaching farm is generated through the sales of surplus produce grown to feed the animals used for the students' on-duty farm practice. The revenue from both income streams is reinvested into education as additional salaries or project funding.

Research revenues have shown constant growth. The staff of the affected departments receive additional salary through an incentive system from all commercial research activity since the 1<sup>st</sup> of January 2021, which motivates colleagues to participate in research projects with commercial partners. The system is based on similar principles as the distribution of clinical revenues, with the notable difference that payments are typically made per project or per semester.

In the framework of the national laboratory tender, UVMB began a €8.75 million project with significant research and innovation objectives. With two consortium partners, UVMB receives a funding of €6.25 million for salaries and material costs and/or equipment.

UVMB realised additional revenue from its postgraduate training programs, which is very important not just for its amount but also due to professional prestige. The key elements of these programs are the continuing education courses for veterinarians.

*Expenditures:* Due to the nature of our operation, 25 to 30% of the cost is material. Before 2022, 85% of this amount was paid for professional materials and services, while the remaining 15% was spent on utilities due to the size of the campus. Exact forecasts in terms of cost components cannot be provided, but the planned material cost is expected to make up 35% of the total expenditure in 2023. UVMB will be able to safely finance these changes with minor reallocation. As far as expenditures are concerned, the highest cost component is the payroll, which is currently approximately 50% of the total budget annually.

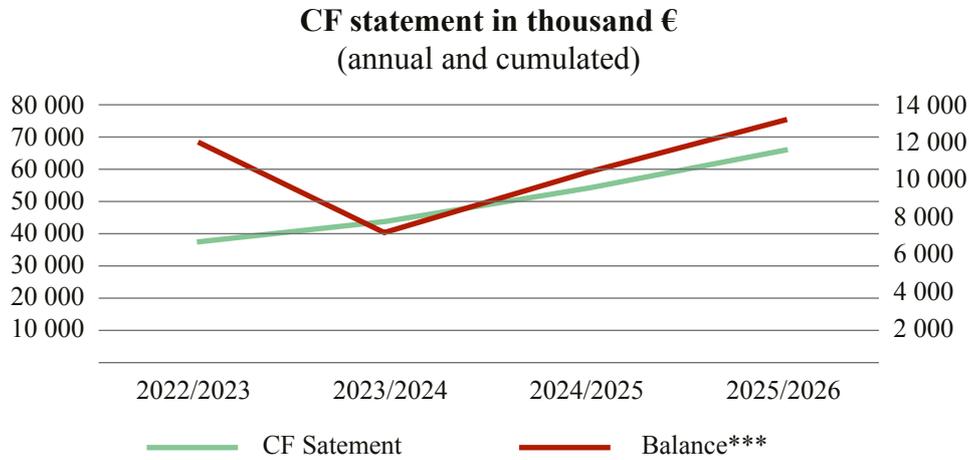
Area of expenditure	2022/2023	2023/2024	2024/2025	2025/2026	Mean
Personnel	18 055	20 341	21 509	22 189	20 523
Operating costs	7 420	9 230	9 858	9 690	9 050
Maintenance costs	1 991	1 510	1 428	1 481	1 603
Equipment	10 100	23 182	45 310	69 790	37 095
Total expenditure	37 566	54 263	78 105	103 150	68 271

Over the past two years, UVMB has been able to compensate for the earlier backlog of wage increases. As a result, the salaries of academic staff are now at, or in some cases, above the market level. This salary progression ensures the long-term retention of excellent professionals in education. By this

year, UVMB has made working for the university an attractive career option for new graduates. Retaining the real value of remunerations is a goal of UVMB.

*Cash flow:* UVMB’s financial operation is characterised by a stable cash flow. Financial resources are constantly available to manage even unforeseeable events or market changes (Fig. 8).

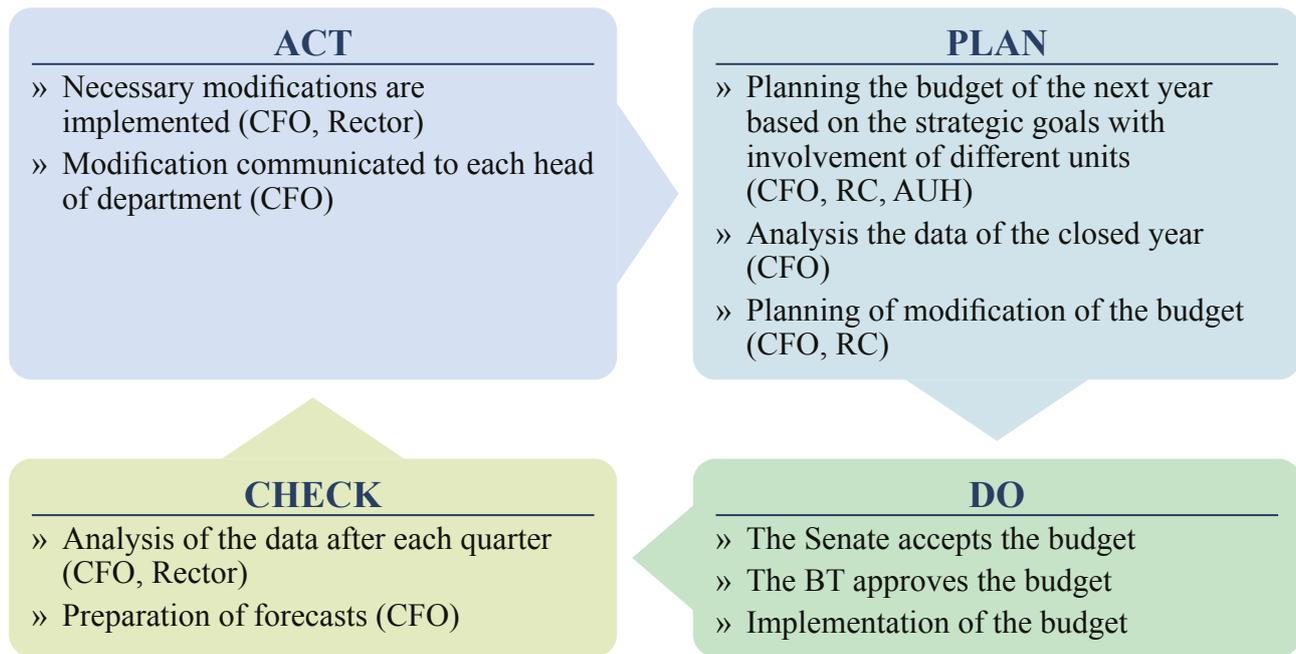
Fig. 8. Cash flow



The annual financial planning process of UVMB begins in the last quarter of the previous fiscal year. Needs are assessed in view of the strategic goals, with the involvement of the different units (departments and administrative units) of UVMB. The plan’s first version is completed in late February after closing the base year, and then finalised at the end of April. The final plan is approved by the Senate and the BT.

After the closing of each quarter, the Finance Department prepares a forecast based on new, unforeseen information. The key figures, the mid-year actuals and the progression of the expected numbers are reported to the BT. In line with its supporting role, the financial area supplies data and information to the Rector, heads of departments and other decision-making bodies/commissions. There is a successful, trust-based cooperation between the CFO and the decision makers, which is the basis of stable financial management of UVMB (Fig. 9).

Fig. 9. PDCA cycle of annual budgeting



## Comments on Area 2

The financial stability of UVMB was considerably increased by becoming an independent foundation university. The financial independence also increased the responsibility of the whole staff of UVMB. Stability is based on the 6-year financial agreement with the government according to predetermined conditions and indicators.

## Suggestions for improvement in Area 2

The above-mentioned 6-year financial agreement creates an opportunity for UVMB to realise its infrastructure development ideas, with which education can proceed with the most modern equipment in the coming decades. On the other hand, it creates resources for those investment opportunities - especially in the field of research, which further strengthens the financial independence and stability. The campus development has begun, the funds have been secured. In the short term, the research work that has already begun must be continued, it can result marketable products, and they can generate profit for UVMB in the long term.





*Area 3.*

**Curriculum**

## Area 3. Curriculum

**Standard 3.1: The curriculum must be designed, resourced and managed to ensure all graduates have achieved the graduate attributes expected to be fully compliant with the EU Directive 2005/36/EC (as amended by directive 2013/55/EU) and its Annex V.4.1. The curriculum must include the subjects (input) and must allow the acquisition of the Day One Competences (output) listed in Annex 2. This concerns Basic Sciences, Clinical Sciences in companion animals (including equine and exotic pets), Clinical Sciences in food-producing animals (including Animal Production and Herd Health Management), Food Safety and Quality, and Professional Knowledge.**

The objective of the program of UVMB is to train veterinarians who have gained Day1 Competences (D1C) and based on their high-level professional, general, and economic skills are able to work in any area of the veterinary profession. The current veterinary curriculum, which was introduced in 2017, comprises 11 semesters, delivering 330 ECTS credits total (see Appendix 3.1: model curriculum).

The curriculum was designed on the following principles: (1) Providing competence and evidence-based education to acquire the required learning outcomes defined for each subject. (2) Interdisciplinary approach to integrate and harmonise various subjects, with special emphasis on species-specific integrated clinical education. (3) Student-centred learning: students are encouraged to participate actively in knowledge transfer. (4) Increased number of practical hours and the possibility of certain specialisation provided by the 11<sup>th</sup> semester. (5) The wide selection of elective courses ensures that individual interests can be addressed in all semesters. There is no track system as far as core subjects are concerned; however, students interested in a certain field of the profession can build their own ‘track’ by taking certain elective subjects (See Marek József Scholarship, Standard 7.3.). Students interested in the diseases of specific animal species can also increase the emphasis of this species in the clinical practice of the 11th semester.

The last major curricular reform was carried out in the academic year of 2017/2018, with the aims of providing competence-based approach, increased practical training, and launching novel subjects such as Oncology and Comparative Animal Protection due to the recent developments in veterinary science. The clinical education was reorganised on a species-specific, interdisciplinary basis, introducing the new subjects of Small Animal Medicine, Equine Medicine, Food Animal Medicine, and Exotic Animal Medicine. The number of elective and optional subjects is continuously increasing, which allow the students to select subjects according to their interest and gives them the opportunity to make a basis for their further specialisation.

The basic subjects covering principles of veterinary medicine are taught in the 1<sup>st</sup> to 4<sup>th</sup> semesters, followed by preclinical courses and specialised clinical studies organised on a species-specific basis. Subjects of Food Safety and Quality (FSQ), Veterinary Public Health (VPH) and Professional Knowledge are studied in semesters 9 and 10. In the final, 11<sup>th</sup> semester, students attend specialised practical courses. The core program of the first three years provides the basic knowledge in natural sciences, fundamentals of agriculture and related fields. These core subjects are necessary for students to understand normal and abnormal structure and function, and their relation to the clinical manifestations, diagnosis, treatment, and prevention of disease, which will allow them to launch an intensive study of animal health and diseases. After starting clinical subjects in the 6<sup>th</sup> semester, the 4<sup>th</sup> and the 5<sup>th</sup> years are devoted to professional core subjects and species-oriented clinical training. These core and species-oriented clinical subjects focus on teaching diagnosis and treatment of important diseases of major domestic animal species, frequently by using problem-oriented approach. Direct clinical experience is an integral part of veterinary medical education. At the clinics, students take patient histories, learn the art and science of diagnosis, and make recommendations for treatment as well as participate actively in case management and client communication. All these activities are performed under the supervision of UVMB staff members. Several subjects are based on each other,

and for this reason completion of certain core subjects is a prerequisite of further study. Extramural practical training is under the strict control of UVMB teaching staff employed full or part time. External departments (Veterinary Medical Research Institute, Zoo Animal Health, Oncology, Food Animal Gene Conservation, Food Chain Safety, Dairy Research: see Appendix 1.2) and collaborative partners (National Stud Farm and Educational Farm Mezőhegyes, Museum of Natural History etc.) also participate in extramural practical training.

External practical training of students is welcome, and students' activity is monitored and acknowledged by the local practitioners. These local veterinary supervisors receive written instructions about the objectives and requirements of UVMB.

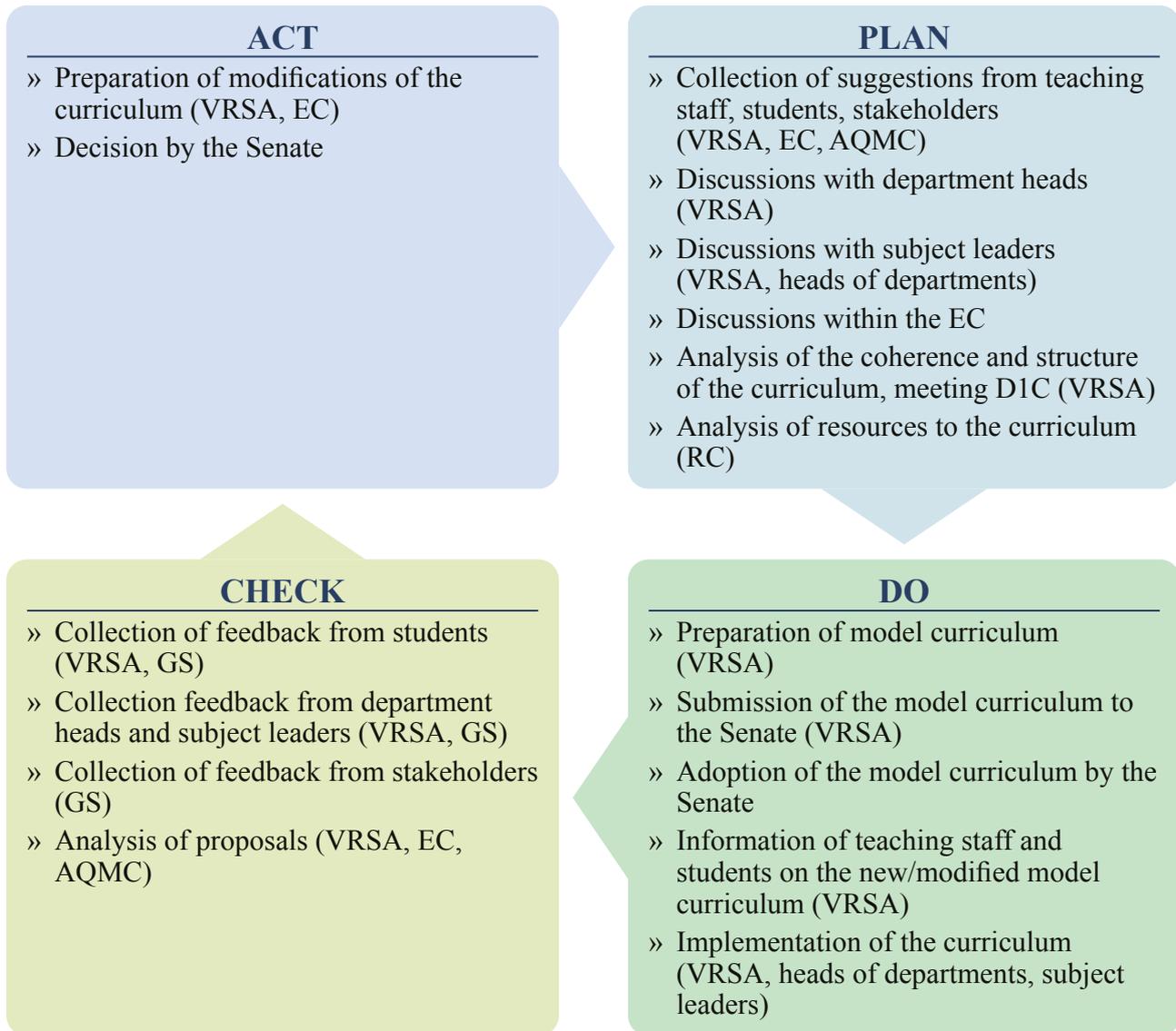
The Rector is responsible for the whole teaching program. The executive tasks of the teaching program and study affairs are the obligation of the VRSA. The VRSA is responsible for preparing suggestions for allocation of hours between the various subjects, determining the ratio of theoretical and practical teaching, credit points of the subjects, type of exams and accreditation of electives. The relevant EU Directives and the current international trends are considered. The whole process is done after an intensive discussion with the heads of departments. The outline curriculum is discussed by the EC which then prepares the model curriculum. The program accepted by the EC is submitted to the Senate for discussion and approval, finally confirmed by the BT of the maintaining foundation. Subject leaders are the key persons in the implementation of the curriculum. Besides teaching a substantial part of the subject, they decide its content in agreement with the department heads, coordinate teaching, they are responsible for improving and harmonising the content. Subject leaders must upload the information on the subject to the CBlue curriculum mapping software and the Neptun system at the beginning of the semester, and they have to manage recording data in connection with the subject.

UVMB has the Hungarian curriculum and an international English study program. The two programs are basically identical. Like the Hungarian, the new English curriculum was introduced in 2017/2018. Additionally, there is a two-year-long German veterinary program also based on the Hungarian curriculum with minor adjustments to support the reintegration of students to the German system, if they want to continue their studies at a veterinary school in Germany or other German-speaking countries from 3<sup>rd</sup> year. Once they have finished this 2-year-long German veterinary course, the students may also continue their studies either in English or Hungarian at UVMB. In regard to the English language program, we apply minor differences which take into consideration particular differences between Hungarian and foreign students. Foreign students come from different secondary school systems with different knowledge backgrounds. We help students reach the same level as their classmates with extra tutorial courses introduced to the English program in the first years. A further difference is that Hungarian students have a subject prerequisite system, which means that they cannot sign up for specific courses until they successfully pass the prerequisite courses. For the English program prerequisites apply to exam sign-up, not to course sign-up. Along with the prerequisites, we have introduced a fire-wall system for the English program. For example, at the end of the second year only those students may enter the third year who have passed all the first and second-year exams. This way failing an exam will not stop English students to proceed until they reach the firewall. We have 3 such firewalls. One is at the end of second year (after basic subjects), one at the end of fourth year (before state veterinary medicine and infectious diseases) and one after the fifth year (before entering the 11<sup>th</sup> semester). Based on student requests we announce their obligations for English speaking classes half a year ahead, so they can organise their trips back home in time.

The curriculum is under continuous fine tuning, adapting it to the dynamically changing needs of the profession and society. Proposals are regularly collected from teaching staff, students, and stakeholders in regard to changes of the model curriculum. Subject leaders report to VRSA at the end of each semester. All suggestions are evaluated by the EC, and sometimes an *ad hoc* committee nominated by the Senate scrutinises the matter to offer suggestions. VRSA regularly controls the coherence of the curriculum, reaching learning objectives, and covering the D1C. The necessary

modifications accepted by the EC are submitted to the Senate for final approval. The structure and the content of the curriculum are regularly discussed by the Senate and the necessary changes are implemented as described above (Fig. 10).

Fig. 10. PDCA cycle of curriculum



The programs of higher education institutions in Hungary (i.e., the qualification requirements including objectives, duration of training, curriculum, examination system, diploma thesis, type, and subjects of the final exam etc.) are regulated by government decrees which are issued pursuant to Act CCIV of 2011 on Higher Education. The qualification requirements in agricultural sciences including the veterinary profession are prescribed by Ministerial Decree No. 65/2021 (XII. 29.) of MIT. Considering the autonomy of the institution ensured by the Act CCIV, it leaves to the institution the right to prepare the curriculum according to its own experience within this framework. Thus, neither the hours of subjects within the study fields nor the ratio of theoretical lectures and practical work are prescribed, giving freedom to UVMB to determine these numbers. Government Decree No. 87/2015 (IV. 9.) allows a more flexible opportunity for preparing the curriculum.

Curricular overlaps, consistency, and integration of the curriculum are continuously checked. Leaders of connected subjects coordinate the content of their subjects by exchanging lists of lecture topics, practical trainings, exam questions, recommended literature, handouts, self-written texts, laboratory

manuals, and teaching documents on the Moodle platform. The reports of the subject leaders to VRSA, as well as feedback from students, teaching staff, and stakeholders; especially employers, supervisors of external clinical training, and external examiners of the final exam help to identify curricular overlaps and inconsistencies. In order to harmonise the content of the subjects, the CBlue curriculum mapping software is also used, as it is designed to provide easy-to-use data about the curriculum. Its primary purpose is to assist in curriculum review and development. The system is an online database from which general or customisable queries can be made after entering the appropriate data. Before each semester the subject leaders update the details of their subjects in the CBlue surface. The information on each subject uploaded to the Neptun system also helps the VRSA in recognising curricular problems. See model curriculum in Appendix 3.1.

Table 3.1.1. Curriculum hours in each semester taken by each student

Semesters	Lectures	Seminars	Supervised self-learning	Lab. and desk-based work	Non-clinical animal work	Clinical animal work	Other	Total
	A	B	C	D	E	F	G	H
1	195	60	0	60	45			360
2	180	75	0	120	45			420
3	180	0	0	25	58			263
4	180	30	0	52	38			300
5	240	60	0	90	30			420
6	240	15	10	70	110	20		465
7	274	15	10	60	110	240		709
8	300	0	10	25	95	335		765
9	345	30	25	45		320		765
10	195	30	15	15		180		435
11	0	0	0	210	30	480		720

Table 3.1.2. Curriculum hours taken by each student

	Lectures	Seminars	Supervised self-learning	Lab. and desk-based work	Non-clinical animal work	Clinical animal work	Other	Total
	A	B	C	D	E	F	G	H
<b>Basic subjects</b>	<b>210</b>	<b>30</b>		<b>105</b>				<b>345</b>
<i>Medical physics</i>	30							30
<i>Chemistry (inorganic and organic)</i>	75			60				135
<i>Animal biology, zoology and cell biology</i>	60							60
<i>Feed plant biology and toxic plants</i>	30	30		15				75
<i>Biomedical statistics</i>	15			30				45

<b>Basic Sciences</b>	<b>1034</b>	<b>165</b>		<b>372</b>	<b>206</b>			<b>1777</b>
<i>Anatomy, histology and embryology</i>	165			75	165			405
<i>Physiology</i>	105			20	10			135
<i>Biochemistry</i>	90			27	3			120
<i>General and molecular genetics</i>	30	30						60
<i>Pharmacology, pharmacy and pharmacotherapy</i>	105			40	28			173
<i>Pathology</i>	105			30				135
<i>Toxicology</i>	30							30
<i>Parasitology</i>	75			60				135
<i>Microbiology</i>	60			60				120
<i>Immunology</i>	30			30				60
<i>Epidemiology</i>	10							10
<i>Information literacy and data management</i>	19			30				49
<i>Professional ethics and communication</i>	30	60						90
<i>Animal health economics and practice management</i>	30							30
<i>Animal ethology</i>	15	30						45
<i>Animal welfare</i>	60	15						75
<i>Animal nutrition</i>	75	30						105
<b>Clinical Sciences</b>	<b>585</b>	<b>15</b>	<b>35</b>	<b>90</b>	<b>325</b>	<b>1395</b>		<b>2445</b>
<i>Obstetrics, reproduction and reproductive disorders</i>	110			15	10	30		165
<i>Diagnostic pathology</i>	60		30	15	120			225
<i>Medicine</i>	155			20	100	50		325
<i>Surgery</i>	135			20	75	30		260
<i>Anaesthesiology</i>	30				20	10		60
<i>Clinical practical training in common animal species</i>						1200		1200
<i>Preventive medicine<sup>1</sup></i>	30	15	5	10				60
<i>Diagnostic imaging</i>	35			10		45		90
<i>Therapy in common animal species<sup>1</sup></i>								
<i>Propaedeutics of common animal species</i>	30					30		60
<b>Animal Production</b>	<b>195</b>	<b>60</b>				<b>180</b>		<b>435</b>
<i>Animal Production, including breeding, husbandry and economics</i>	75	30						105
<i>Herd health management</i>	120	30				180		330
<b>FSQ, VPH and One Health Concept</b>	<b>305</b>	<b>45</b>	<b>35</b>	<b>205</b>	<b>30</b>			<b>620</b>
<i>Veterinary legislation including official controls and regulatory veterinary services, forensic veterinary medicine and certification</i>	90		10	70				170
<i>Control of food, feed and animal by-products</i>	45	15	15	30				105

<i>Zoonoses</i>	80	30	10	45				165
<i>Food hygiene and food microbiology</i>	60			30	30			120
<i>Food technology</i>	30			30				60

<sup>1</sup>Included in all courses dealing with diseases and health care of various animal species.

Table 3.1.3. Practical rotations under academic staff supervision (excluding EPT)

Types	List of practical rotations	Duration	Semester of program
Intramural clinics (VTH)	1. Internal medicine clinical rotation (companion animals)	60 h /semester	7-10.
	2. Surgery clinical rotation (companion animals)	40 h / semester	7-10.
	3. Obstetrics clinical rotation (companion animals)	20 h / semester	7-10.
	4. Equine medicine clinical rotation	60 h / semester	7-10.
	5. Clinical practical block I. <sup>1</sup>	160 h	11.
	6. Clinical practical block II. <sup>1</sup>	160 h	11.
Ambulatory / HHM	1. Ambulatory clinics (mobile clinic)	60 h / semester	7-9.
	2. Clinical practical block III. <sup>1</sup>	160 h	11.
FSQ & VPH	1. Food hygiene practical block	80 h	11.
	2. State veterinary medicine practical block	80 h	11.
	3. Laboratory diagnostics practical block	80 h	11.
Electives	Elective courses are not included in practical rotations.		

<sup>1</sup>In the 11<sup>th</sup> semester, students must take at least one block of food animal medicine (Clinical practical block III., 160 h), and the remaining two clinical blocks (160 h each) can be chosen from equine, food animal, companion animal and exotic animal medicine (Clinical practical block I-II).

As of the 1<sup>st</sup> of September 2022, the number of elective and optional subjects in English, German and Hungarian altogether was over 450. The elective and optional courses are divided into two groups: B subjects (electives) are closely connected to the classical veterinary activities and optional C courses can have a looser, wider scope. Both B and C courses have 2 credits, but out of the total credit being acquired from elective and optional courses over the 10 semesters max. 40% can come from elective C courses.

Table 3.1.4. Curriculum hours taken as electives for each student\*

	Lectures	Seminars	Supervised self-learning	Lab. and desk-based work	Non-clinical animal work	Clinical animal work	Other	Total
	A	B	C	D	E	F	G	H
Basic subjects	15							15
Basic Sciences	120		30					150
Clinical Sciences	45		15			45		105

Animal Production	15					15		30
FSQ, VPH and One Health Concept	30		15	15				60

\*Total number of electives and optional subjects offered by UVMB. Students can choose from a wide variety of elective and optional subjects; hence the indicated curriculum hours provide only an approximate count and might be modified depending on the individual choices. During the entire curriculum, a minimum of 30 ECTS credit must be collected totally from the elective (type B) and optional (type C) courses.

The list of elective subjects is in Appendix 3.2.

Table 3.1.5. Optional courses proposed to students (not compulsory)

See Appendix 3.3.

Optional courses (type “C” subjects) mostly cover soft skills of the veterinary profession, such as communication and personal skills, lifelong learning, etc., or they cover information concerning scientific topics not closely related to core veterinary medicine, with the aim of improving constructive thinking and widening the students’ knowledge on various natural science areas. Each optional subject counts 2 ECTS credits and should be considered together with the electives (type “B”) to achieve the required 30 ECTS credits totally, but their total share cannot exceed 40% of the 30 ECTS.

There are several core clinical exercises, practical trainings, and seminars prior to the start of the clinical rotations:

- In semesters 1 to 4, students spend one on-duty week (40 hours) per semester at the TF in Üllő, studying the practical principles of animal handling and care. The students can focus on one farm animal species in each semester, including horse, pig, cattle, sheep, and poultry. These farm weeks provide a solid practical basis for the future clinical studies and subjects related to herd health management.
- The basics of animal handling and care are delivered on the practical courses of several subjects dealing with living animals. For instance, during Topographic Anatomy practical training students learn to work with horses, while in Physiology and Biochemistry labs the procedures of taking blood samples and applying injections are studied on live laboratory animals. Further, Pharmacology practical training provides possibility of studying a wide variety of basic clinical skills (such as various methods of drug administration, monitoring anaesthetized patients etc.).
- All manual skills studied and improved throughout the practical training of basic sciences must also be registered in the Logbook of the students together with the future clinical practical interventions. This Logbook is used to confirm that the student has achieved the required practical D1C during the university years, and it should be checked at the end of the 11<sup>th</sup> semester.
- Students can use the Skills Labs to learn and practice the major clinical skills from the beginning of their studies. The labs provide practical hands-on training with mannequins and simulators. The practical work of the students is supported by tutors, but Skills Labs are also an important platform of the self-directed learning.
- The core clinical subjects of Small Animal Medicine and Equine Medicine start in the 6<sup>th</sup> semester, at first focusing on the core issues and diagnostics of the studied animal species, as well as clinical biosafety measures. The practical courses in this semester mostly contain work with healthy university-owned animals, where students are introduced to the principles of the clinical examination (from general to specialised clinical examinations), and their manual skills can be improved. Having exams on subjects of this first clinical semester is prerequisite of starting clinical rotations from the 7<sup>th</sup> semester.
- Veterinary professional training, including ethical or communicational training, is provided during lectures and seminars of various courses, as well as in the frame of optional subjects specialised on veterinary soft skills.

The practical clinical education consists of several different forms of training (small group clinical practical in dry and wet labs, core clinical rotations, emergency service, summer clinical practice, and clinical blocks of the 11<sup>th</sup> practical semester) in the field of small animal medicine, equine medicine, exotic and wild animal medicine and food animal medicine.

As part of the curricular clinical education, students are scheduled to take part in small group clinical practical labs (in average 16 persons) performing and training diagnostic and therapeutic procedures on models (see Skills Labs) and healthy dogs as well as including ‘cadaver wet labs’ when they practice fundamental operative procedures (laparotomy, gastrotomy, enterotomy, cystotomy, etc.) on animal cadavers. From the 6<sup>th</sup> to the 9<sup>th</sup> semester these sessions are weekly time-tabled on a particular ‘clinical day’ throughout the study period which is exclusively dedicated to clinical teaching. These practical hours provide an indispensable basis for the core clinical rotations starting from the 7<sup>th</sup> semester.

In the present system, in the 4<sup>th</sup> and 5<sup>th</sup> year (from 7<sup>th</sup> to 10<sup>th</sup> semesters) students have 720 hours of clinical work during core clinical rotations, from which 240 hours are belonging to internal medicine, 160 hours to surgery and 80 hours to obstetrics of small animals (neutering program, see below), while 240 hours are spent in equine medicine. Further, 180 hours of clinical practice are delivered in the frame of the mobile clinic as well. In addition to the clinical rotations, a 4-week-long (160 hours totally) summer hands-on clinical practice has to be completed following the 4<sup>th</sup> year (see below).

In the framework of the core clinical rotation, students are allocated to the different units (internal medicine, surgery, obstetrics) and then are directly involved within the daily clinical routine of that units of the clinic (e.g. discipline consultations, diagnostic imaging, anaesthesia, assisting in operating rooms, actively working at the intensive care unit [ICU], etc.) as well as in the 24-hour emergency service and the night shifts supervised by the academic teaching staff according to a strict schedule:

#### **Small Animal Clinic:**

Daytime	(08:00–20:00)	12 students
Night-time	(20:00–08:00)	4 students
Total number:	16 students/day (exam period: 2x2 students)	

#### **Equine Clinic:**

Daytime:	(08:00–16:00)	5-7 students (weekends: 8:00–18:00 and 18:00–8:00)
Night-time:	(16:00–08:00)	5-7 students
Total number:	10-14 students/day (exam period: 2x1 student)	

The neutering program is operated by the Department of Obstetrics and Food Animal Medicine Clinic. Approximately 5 to 6 female or male dogs per day belonging to animal shelters in contractual relationships with UVMB are admitted and hospitalised at the clinical unit for a short period to be neutered by the students under direct supervision by the teaching staff. Before and after the surgery these dogs undergo diagnostic examinations (blood examination, urinalysis, ultrasonography, postoperative rechecks) and basic therapeutic procedures (deworming, postoperative analgesia) which are performed by the students. The Department of Internal Medicine also contributes to the program. The programme is free of charge for the shelters. The costs of the treatments are supported by UVMB and the government.

The mobile clinic (ambulatory clinic) provides an ‘on-farm’ hands-on learning possibility for the students in the 7<sup>th</sup>, 8<sup>th</sup>, 9<sup>th</sup> and 10<sup>th</sup> semesters. It is mainly organised by the Department of Animal Hygiene, Herd Health, and Mobile Clinic but the Department of Obstetrics and Food Animal Medicine Clinic is also involved in the supervision of the practical training. Multiple farms take part in the program, dealing with different species such as dairy cattle, beef cattle, small ruminants, swine, and poultry. Each week of the semester two or three groups of 5-6 students travel to different farms, accompanied by the teaching staff. This practical training predominantly focus on clinical aspects of herd health, regular reproductive examinations (pregnancy examination, management of infertility, synchronisation programs and pathologic conditions), handling and management of diseases, taking

part in eradication programs (blood sampling for different tests, tuberculosis testing, other kinds of sampling, vaccinations) managing surgical disorders of food animals, taking part in claw trimming activities and milk hygiene examinations of cattle. The trainings are mostly carried out using the equipment and facilities of the farms, but teaching staff bring specific equipment for some of the procedures (e.g., portable ultrasound, surgery equipment). The students participate in the activities supervised by university staff and on-farm personnel.

As part of the intramural clinical training, 4<sup>th</sup>-year students currently must fulfil at least two weeks at UVMB clinics in the framework of the 4-week-long summer hands-on clinical practical together with the currently scheduled 11<sup>th</sup>-semester students. The rest of the time is spent at external clinical places.

The last and most intense period of the undergraduate intramural clinical training is the 11<sup>th</sup> semester when three 4-week clinical blocks must be fulfilled by the students (480 hours of clinical hands-on practice). Clinical blocks are devoted to farm animal, equine, small animal and/or exotic animal medicine. At least one of the 3 blocks must be food animal medicine. The remaining 2 blocks can be 2 or 1 of each type of companion animal medicine including equine medicine. The students must spend 1 or 2 blocks at UVMB clinics if they choose 2 companion animal blocks to fill their intramural places, but some high-level practices accredited by the clinical departments are involved in the system with their teaching staff being part-time employed by UVMB. Students scheduled at UVMB clinics are allocated to the different divisions (internal medicine, obstetrics, surgery) and rotate between the different units of the clinics (e.g., discipline consultations, diagnostic imaging, operating rooms, ICU, etc.) as well as 24-hour emergency and night shifts supervised by the academic teaching staff. The students are obliged to fulfil requirements prescribed by the clinical departments and the clinical activity is evaluated by the clinic. The students must take a practical OSCE exam at the end of the clinical block(s) at UVMB clinic. The final grade consists of the grade of the practical activity and the exam (Fig. 11).

Fig. 11. Structure of the curriculum

Semesters	Subjects	Learning objectives
11 <sup>th</sup>	Rotation (clinical work, food hygiene, veterinary public health, state veterinary administration)	Clinical knowledge and competence, competence in infectious diseases, food hygiene, veterinary public health, state veterinary administration
9 <sup>th</sup> – 10 <sup>th</sup>	Infectious diseases, food hygiene, veterinary public health, state veterinary administration, clinical work	Clinical knowledge and competence, knowledge and competence in infectious diseases, food hygiene, veterinary public health, state veterinary administration
7 <sup>th</sup> – 8 <sup>th</sup>	Species-specific clinical subjects, clinical work	Clinical knowledge and competence
5 <sup>th</sup> – 6 <sup>th</sup>	Pathology, pathophysiology, microbiology, pharmacology, immunology, animal husbandry, nutrition, parasitology, clinical subjects	Diseased functions, therapy, animal production, propaedeutics
3 <sup>rd</sup> -4 <sup>th</sup>	Physiology, biochemistry, topographic anatomy, virology	Structure and functions of healthy animals, virology
1 <sup>st</sup> -2 <sup>nd</sup>	Basic subjects, anatomy, histology	Basic veterinary knowledge, structure and functions of healthy animals

Since 2020, UVMB has introduced significant changes in organising food systems safety and veterinary public health education and research through setting up new units, amending the training curricula and generating international research collaboration in the field. The focus had been shifted towards a modern, risk based, systematic approach to assess, manage, and communicate risk, associated with

the agri-food chain processes. We are also extending this concept beyond 'classic' food safety: social sciences and consumer engagement, sustainability and food waste, complexity sciences, and data analysis form an integral part of education and research activities. In these recent years the staff has become a team of theoretical and practical experts with international professional networks, and bring in many European research projects, with an opportunity to become an internationally recognised research and education centre.

The comprehensive subject of Food Hygiene aims to teach the theoretical knowledge and skills indispensable for veterinarians to ensure and control adequate safety and quality of the whole food chain (from the primary production, through food processing, distribution, and sale, to the consumers). Special emphasis is placed on the paramount protection of human health (VPH) in a One Health approach, the importance of the risk analysis framework (risk assessment, risk management and risk communication), the risk-based self-check programs of the food business operators, and the general and specific requirements of official controls at all stages of the food chain from the farm to fork. Students gain knowledge about the relationship between food hygiene and applied food science, including sustainable development goals and challenges in the food chain. This subject also investigates the social framework of risk analysis and especially food chain safety control in order to promote a higher level of public health protection. Types of training in food hygiene include lectures (120 hours), laboratory and desk-based work (60 hours) in the 5<sup>th</sup> year, and obligatory practical work (80 hours) in the 11<sup>th</sup> semester.

The laboratory and desk-based work is performed in groups of 16 to 20. Labs are aimed to familiarise students with the main assessment and evaluation methods of food safety and quality and to provide them essential hands-on experience in food microbiology, chemical food safety, food spoilage and preservation, technology and technological hygiene of main foodstuffs (milk, meat, egg, fish etc.), risk analysis framework, risk assessment, risk management (including risk-based self-check programs of the food business operators and the official control of establishments) and risk communication. Students perform manual work where possible and/or the practical aspects are discussed using a problem-solving approach. Practical aspects of the production technology of foodstuffs of animal origin are taught during the 10<sup>th</sup> semester in the teaching laboratory of the Department of Food Hygiene.

In the 11<sup>th</sup> semester, 80 hours (2 weeks) are spent in the fields of food hygiene and technology as well as the official control of food, feed, and animal by-products. Students are familiarised with the entire process of official veterinary control of animals for slaughter and meat production in a sequential form. Hence, a major part of this practical block is spent in one or more slaughterhouses out of which at least 40 hours must be accomplished in a pig and/or cattle, and slaughterhouse of other food-producing animals (small ruminants, poultry, rabbit), or at a game-processing establishment. It is organised in co-operation with the External Department of Food Chain Safety. The training is supervised by a state veterinarian and controlled by members of the Department of Food Hygiene.

This mandatory extramural course also includes practical courses on official hygiene control in processing facilities (meat, milk, egg, or other foods) and in wholesale, retail, restaurant, and catering establishments respectively. Each training site involved in the 11<sup>th</sup> semester practical program is supervised by the External Department of Food Chain Safety, where the main aspects of assessing suitability include the presence of adequate facilities for hands-on practical training in ante- and post-mortem meat inspection and in the official control of approved food processing establishments. Additionally, the extramural training sites should also provide facilities for basic practical skills on the official control of distribution and sale.

Besides the obligatory course of Food Hygiene, the new organisational units offer a variety of elective courses to students. The main purpose of these is to introduce and familiarise the students with the VPH aspect of the veterinary profession as early as possible, and to provide a deeper insight into some of the important topics.

In the framework of the 11<sup>th</sup> semester students have a 2-week-long laboratory diagnostic practical at certain departments of UVMB (Department of Microbiology and Infectious Diseases, Department

of Parasitology and Zoology, Department of Pathology) or at the External Department of the Food Chain Safety. During this 2-week-long practical, students can see and practice the most important laboratory methods used in the diagnostic work (postmortem examination, histology, bacteriology, virology, immunology, parasitology, etc.). Special emphasis is placed on differential diagnostics of animal diseases and diagnostics of notifiable diseases.

As part of the practical course in the 11<sup>th</sup> semester, a mandatory extramural training in State Veterinary Medicine/Administration is organised in co-operation with the national food chain control authority. The training period is 2 weeks (80 hours), is supervised by the official veterinarian responsible for the districts or counties where the training takes place and controlled by the members of the Department of Veterinary Forensics and Economics. The students must prepare a report presenting their activities during the practice (approximately 10 to 20 pages) and at minimum 7 of the listed 10 official activities (70%) must be completed, which shall be certified by the supervisor/responsible official veterinarian in the Logbook and then submitted to the Department of Veterinary Forensics and Economics. During the practice, the students have to get familiar with the official control measures, veterinary and animal welfare checks, and the control and eradication of notifiable animal diseases. At the end of the 2-week obligatory extramural training there is a written exam at the Department of Veterinary Forensics and Economics, which includes practical questions relating to the completed activities based on the previously prepared and submitted student report.

In the credit-based curriculum students have the right to freely organise their individual study plans and to select elective and optional subjects which they are interested in. The number of elective/optional courses is continuously increasing, so students can choose from a wide variety of subjects according to their interests. The majority of the already more than 450 elective and optional subjects are directly related to veterinary science (See Appendix 3.2. and 3.3.). Beyond the 270 credits of mandatory subjects of semesters 1 through 10, students are required to collect 30 credit points from elective (type “B”) and optional (“type C”) subjects in total, but “C” may account for maximum 40% of the 30 credit points. Students can freely select any elective subjects if they fulfil the prerequisites (if any) of the elective subject in question. Highly motivated students are allowed to collect more than 300 credit points; however, the total amount of credits that can be acquired free of charge is 330. Elective subjects are offered in either the fall or spring semester (half-year) and are held if at least 5 to 15 students have registered for the given subject. Several specialisation tracks are offered, which are composed of the elective courses fitting to the appropriate field of veterinary science (such as Food Animal Medicine and Herd Health Management, Laboratory/research oriented veterinary science, Equine medicine etc). A special track of electives deals with Wildlife management and wild animal health, which can be completed in a given sequence, and students fulfilling the requirements of the track receive a certificate in addition to their veterinary diploma. Students having Marek József Scholarship must enrol certain elective subjects related to food producing animals. Enrolment of elective and optional subjects happens on a first come, first served basis.

A Logbook has been introduced to confirm that the students have successfully completed all the required practical tasks to achieve DIC and to promote self-directed learning. The Logbook mostly contains the major manual clinical procedures studied and practiced on the curricular clinical practical training, at clinical rotations, in the practical blocks of the 11<sup>th</sup> semester, and on extramural practical training. Furthermore, specific activities related to certain basic sciences (such as anatomy, pharmacology, virology) and to veterinary legislation, food hygiene, and safety are included in the Logbook. All items indicated in the Logbook must be fulfilled and signed by the supervisor by the end of the 11<sup>th</sup> semester to prove that the student is familiar with the given procedures of the veterinary profession.

**Standard 3.2: Each study programme provided by the VEE must be competency-based and designed so that it meets the objectives set for it, including the intended learning outcomes. The qualification resulting from a programme must be clearly specified and communicated**

**and must refer to the correct level of the national qualifications framework for higher education and, consequently, to the Framework for Qualifications of the European Higher Education Area.**

**The VEE must provide proof of a QA system that promotes and monitors the presence of an academic environment highly conducive to learning including self-learning. Details of the type, provision and updating of appropriate learning opportunities for the students must be clearly described, as well as the involvement of students.**

**The VEE must also describe how it encourages and prepares students for self-learning and lifelong learning.**

The learning objective of veterinary training in Hungary is defined by Ministerial Decree No. 65/2021 (XII. 29.) of MIT. It is based on the European Directives 2005/36/EC and 2013/55/EU and the D1C. Learning outcomes have been defined for each subject to ensure that the educational aims are met by the study program. The learning outcomes of the given subject are formulated by the subject leader, also considering the opinion of stakeholders. Learning outcomes must fit to the D1C related to the subject. Outcomes are documented in the online Neptun system (freely available for attending students and teaching staff), and CBlue curriculum mapping software and they are assessed through formative and summative examinations. The continuous review and improvement of learning outcomes is indispensable, being based on assessment results and the constant feedback from internal and external stakeholders (see Standard 1.4). The coherence of the curriculum is analysed by VRSA and the EC. There is an ongoing evaluation based on PDCA cycle to ensure that the objectives are met (see Standards 1.4. and 3.1).

The curriculum was designed to provide competence-based education with well-defined learning outcomes to reach the required D1C. Student-centred teaching is an important principle of our education, including the motivation of students to actively participate in knowledge transfer and research projects, as well as addressing the increasing role of self-directed learning. The interdisciplinary, evidence-based approach of veterinary education promotes the effective teaching, scientific discourse, and lifelong learning. Practical training in small groups enables active individual manual work as well as providing an ideal framework for networked learning that deal with scientific/clinical cases and problem solving. It should be emphasised that the compact size of UVMB contributes to especially good partnerships between teachers and students, ensuring mutual interaction and feedback from both directions.

Promoting self-learning is an important principle of the curriculum. This is reflected by the numerous supervised self-learning activities initiated in certain subjects (such as students preparing their own presentations, essays, literature reviews, case reports, journal clubs, special students' colleges etc). The Moodle e-learning system was introduced at UVMB in the recent years, providing a proper platform for online self-learning, and self-tests. The electronic contents of the courses (lecture slides and videos) are available on the Moodle platform. All lectures are recorded, and the videos are fully available for students during the semester, ensuring a solid background for self-learning and preparation for exams. Self-learning activities effectively promote the problem-based discussion of different scientific topics and clinical cases. Several optional courses (type "C" subjects) have been introduced to deal with lifelong learning and to improve veterinary soft skills.

### **Standard 3.3: Programme learning outcomes must:**

- **ensure the effective alignment of all content, teaching, learning and assessment activities of the degree programme to form a cohesive framework**
- **include a description of Day One Competences**
- **form the basis for explicit statements of the objectives and learning outcomes of individual**

### **units of study**

- **be communicated to staff and students**
- **be regularly reviewed, managed and updated to ensure they remain relevant, adequate and are effectively achieved.**

The objective of the program is to train veterinarians who, based on their high-level professional and general training and economic skills, can identify, and prevent animal diseases, and provide medical treatment for animals. Furthermore, they can undertake duties in the various branches of agriculture, animal husbandry, and public administration in even 40-50 years. The program aims to provide students with the appropriate mixture of knowledge and skills using evidence-based medicine necessary to achieve the D1C that can serve as a basis for developing the professional experience of graduates and maintaining their interest in lifelong learning. Special emphasis is given on professional ethics and animal welfare issues during the entire study. Learning outcomes are clearly defined for each course, being accessible for students in the Neptun system. In this aspect the teaching and learning methods used at UVMB enable the students to achieve the intended learning outcomes and required competences. The coherence of the curriculum is followed in the CBlue curriculum mapping software and in the Neptun system applying a PDCA cycle (see Standard 3.1).

Maintaining a professional and supporting environment to promote close and good relationships between teachers, students and field veterinarians is also a central aim of UVMB, including providing a cohesive framework and community. In the frame of this partnership, students can participate in collaborative projects with our educational partners and interact with practitioners from Hungary and abroad. Numerous educational partners have been integrated into curriculum delivery as external departments, such as Veterinary Medical Research Institute, National Food Chain Safety Office, National Stud Farm and Educational Farm (Mezőhegyes), Budapest Zoo, Museum of Natural History, and Hungarian Dairy Research Institute (Mosonmagyaróvár). The constant active discussion with the Hungarian Veterinary Chamber (HVC) is also indispensable, especially to get feedback on the achieved D1C of the freshly graduated veterinarians, and to improve the curriculum to fulfil the expectations of the field praxis.

The learning outcomes of each subject are prepared together with the D1C to which the given course contributes. They are available in the CBlue software and in the Neptun system. Based on discussion with the teaching staff, it is the duty of the subject leader to formulate the learning outcomes as the major educational aims of the course, and to prepare the list of the D1C related to the subject. Special emphasis should be given during the improvements of the study program on the harmonisation of the teaching methods, the delivered theoretical and practical knowledge with the learning outcomes and the D1C. All this information of the given course (general aims, learning outcomes, D1C, detailed schedules and topics of lectures and practical training) are uploaded as a syllabus to the online Neptun system. Furthermore, CBlue curriculum mapping tool has been introduced to offer complex insight towards the interrelationship of different subjects, and to monitor how the D1C are achieved during subsequent courses of the curriculum.

It is an especially important aim of UVMB to prepare the graduating veterinarians for practical work. In the new curriculum more emphasis has been placed on clinical work, non-clinical practical work, and communication skills, which is reflected by the increased number of practical hours and the obligatory 15 hours communication course within the subject of Animal Health Economics and Communication. The practical education of all subjects is performed in small groups, and hands-on manual work is emphasised from the basic sciences (e.g., dissections in Anatomy, laboratory work in Chemistry, Physiology and Biochemistry, diagnostic necropsies in Pathology etc.) to the clinical subjects, through state veterinary medicine and food hygiene, and including clinical rotations and the practical blocks of the 11<sup>th</sup> semester. The Logbook helps to follow the activity of students in this procedure. Particular attention is continuously given on the proper implementation of the curriculum, which is continuously upgraded by regular assessment procedures based on feedback and assessment results.

The VRSA and the EC analyse whether the learning outcomes include the D1C on a semester basis, and report to the Senate. The whole process is controlled by the QAMC (see Standard 3.1).

The VRSA and the EC recommend the learning outcomes of the complete program, and these are adopted by the Senate. The learning objectives are outlined in the relevant EU directives and the national laws. Syllabi of the subjects are prepared by the subject leaders based on discussion with the teaching staff and the feedback received from students, teaching staff and stakeholders (see above). The VRSA and the EC are dedicated to monitoring the syllabi. The required changes in learning outcomes are usually prepared together with curriculum changes, which must be confirmed by the EC, the Senate, and finally approved by the BT of the maintaining MJF. Students participate in all phases of preparing and improving study programs via student delegates who are members of the EC, and the Senate. The feedback from students is always considered for curricular changes. All major changes in the curriculum are announced through the regular information channels of UVMB (General Assembly, homepage, Univet Magazine, e-mails etc.).

The evaluation of teaching feedback from recent graduates is also important to assess learning outcomes. The Career Monitoring System of Graduates follows up on the employment and career progress of graduates through online questionnaires directed at recent graduates within a year after graduating and subsequent follow-up surveys every third year. Data on the employment of recent graduates have been collected every year since 2010. The responders have given valuable remarks and suggestions for improving the curriculum.

**Standard 3.4: The VEE must have a formally constituted committee structure (which includes effective student representation), with clear and empowered reporting lines, to oversee and manage the curriculum and its delivery. The committee(s) must:**

- **determine the pedagogical basis, design, delivery methods and assessment methods of the curriculum**
- **oversee QA of the curriculum, particularly gathering, evaluating, making change and responding to feedback from stakeholders, peer reviewers and external assessors, and data from examination/assessment outcomes**
- **perform on going and periodic review of the curriculum at least every seven years by involving staff, students and stakeholders; these reviews must lead to continuous improvement. Any action taken or planned as a result of such a review must be communicated to all those concerned**
- **identify and meet training needs for all types of staff, maintaining and enhancing their competence for the ongoing curriculum development.**

The Rector is responsible for the program, while the executive tasks of the teaching program and study affairs are the obligation of the VRSA. Compilation and modification of the curriculum are prepared by the VRSA and the EC taking into account feedback from teachers, students and stakeholders. The committee allocates the hours among the various subjects, determines the ratio of theoretical lectures and practical work, assigns credit points of the subjects, determines the type of exams, and accredits the electives, thus, it prepares the model curriculum. The whole process is done after an intensive discussion with the heads of departments. Elaboration of the contents of courses is mainly the task of the subject leaders and the department heads in co-operation with their colleagues. The contents of subjects which are linked to each other are discussed regularly between the departments. Proposals from the teaching staff or students to change the model curriculum are discussed by the EC. The program accepted by the EC is submitted to the Senate for discussion and adoption.

The structure and the content of the curriculum are regularly discussed by the EC and the Senate, and the necessary changes are implemented as described above. (See Standard 3.1.). The model curriculum for each year is published in the Students' Guide and on the website.

**Standard 3.5: External Practical Training (EPT) is compulsory training activities organised outside the VEE, the student being under the direct supervision of a non-academic person (e.g., a practitioner). EPT cannot replace the core intramural training nor the extramural training under the close supervision of academic staff (e.g., ambulatory clinics, herd health management, practical training in FSQ and VPH).**

**Since the veterinary degree is a professional qualification with Day One Competences, EPT must complement and strengthen the academic education inter alia by enhancing student's professional knowledge.**

The practical training aims to provide the students with relevant, up-to-date knowledge regarding the current situation and the level of everyday practice of different subjects. There are obligatory summer EPTs in animal husbandry (after 2<sup>nd</sup> year), animal nutrition (after 3<sup>rd</sup> year) and in equine, small and/or exotic animal clinical practice (after 4<sup>th</sup> year). These are organised in contractual co-operations with external units having colleagues who can provide accredited and controlled practical knowledge to our students. These practical trainings are designed and supervised by the relevant departments. Students are obliged to submit a written report on their practical work and to complete the relevant assignments in the Logbook.

Students' attendance and adequate performance during EPTs (summer practices) are under control of UVMB, while monitored and acknowledged by the local practitioners recommended by the Hungarian Veterinary Chamber.

Table 3.5.1. Curriculum days of External Practical Training (EPT) for each student

<i>Fields of Practice</i>	<i>Minimum duration (weeks)</i>	<i>Year of programme</i>
<i>Production animals (pre-clinical)</i>	4	2 <sup>nd</sup> and 3 <sup>rd</sup>
<i>Companion animals (pre-clinical)</i>	-	-
<i>Production animals (clinical)</i>	-	-
<i>Companion animals (clinical)</i>	4	4 <sup>th</sup>
<i>FSQ &amp; VPH</i>	-	-
<i>Others (specify)</i>	-	-

The aim of the animal husbandry and animal nutrition EPTs (2 weeks each) is to understand the everyday practice of animal breeding and nutrition, as well as its rules, considerations, habits, strategies, trends, and the proper role of the veterinarian in this field. A training agreement must be signed by the farm manager and the student at the end of the semester, and it shall be sent to the appropriate department. Practical work on two different animal species is required. The farm shall be a large-scale facility, preferably dealing with dairy cattle, pigs, sheep, goats, or fish. Horse and beef cattle farms are also accepted. Small family farms, zoos or minor breeding businesses are not accepted. During the time of EPT students need to be employed in the routine daily work of the farm, and work according to the directions of the supervisor or farmer. A diary must be kept about all the activities day by day. This should be signed by the supervisor or the owner of the farm at the end of the practical and shall be included as a chapter of the report. Students have to summarise their experiences and observations collected during the practical in a report (35 to 40 written pages, preferably illustrated by photos, figures and tables). Submission of the report is a prerequisite for the exam in the two disciplines (Animal Breeding and Animal Nutrition II). The responsible departments evaluate the reports, and a grade (from 2 to 5) will be included in the scores of the final examination. After the 4<sup>th</sup> year students have a 2-week-long EPT in addition to the 2 intramural weeks. The external clinical practice must be fulfilled in different acknowledged external places according to a detailed guideline including all the requirements. A report on the clinical cases with short clinical records and

a detailed case report are to be submitted to the Department of Internal Medicine that is responsible for the entire administration of this summer EPT. The grade of this report is taken into consideration at the final clinical examination.

**Standard 3.6: The EPT providers must have an agreement with the VEE and the student (in order to state their respective rights and duties, including insurance matters), provide a standardised evaluation of the performance of the student during their EPT and be allowed to provide feedback to the VEE on the EPT programme.**

**There must be a member of the academic staff responsible for the overall supervision of the EPT, including liaison with EPT providers.**

Collaboration agreements are signed individually between the EPT providers and UVMB. The EPT providers are informed about the objectives and requirements of the practical training in details before the onset of the practice, and the responsible UVMB departments provide continuous support for them during the practice. The presence and performance of attending students are directly controlled by the supervisor, who should also confirm if the student successfully fulfilled the requirements of the practical training. Feedbacks of EPT providers and students to the corresponding UVMB departments provide useful information for UVMB on how to improve EPTs and the curriculum.

*Name of the academic person(s) responsible for the supervision of the EPT activities*

- Animal Husbandry: András Gáspárdy, Head of Department of Animal Breeding and Genetics
- Animal Nutrition: István Hullár, Head of Department of Nutrition Science and Clinical Dietetics
- Companion Animals Clinical Practice: Ferenc Manczur, DVM Head of Department of Internal Medicine

**Standard 3.7: Students must take responsibility for their own learning during EPT. This includes preparing properly before each placement, keeping a proper record of their experience during EPT by using a logbook provided by the VEE and evaluating the EPT. Students must be allowed to complain officially and/or anonymously about issues occurring during EPT. The VEE must have a system of QA to monitor the implementation, progress and then feedback within the EPT activities.**

The responsible department provides a list of supervisors on the website, and students should contact the EPT providers themselves. During the EPT, students must prepare a daily diary covering the activities conducted, which is signed by the practical instructor at the end of the EPT. Students are required to write a report according to the department's requirements and submit it to the department for evaluation. The Logbook must also be used, because several practical activities can be performed during the EPTs, which must also be confirmed by the supervisor.

In case of any complaints, students can contact the responsible teacher (EPT coordinator) of the department at any time, student representatives of each class, the head of the department, or in more severe cases, the VRSA. Concerns are addressed on a case-by-case basis, and students are informed about the solution as soon as possible.

### Comments on Area 3

Being the only veterinary school of the country, it is the responsibility of UVMB to develop the national veterinary training program. International collaborations (bilateral connections, VetNEST, EAEVE Education Day) are used compare the curriculum with that of other VEEs.

A substantial increase of hands-on clinical hours has been achieved by establishing the Skills Labs. A further considerable achievement was the introduction of species-specific subjects (Small Animal

Medicine, Equine Medicine, Food Animal Medicine) in the newest curriculum, by which the clinical training in the 4<sup>th</sup> and 5<sup>th</sup> years has been further extended.

The number of electives with topics of veterinary soft skills has considerably increased and the communication course (15 hours) has become a mandatory subject for the 5<sup>th</sup> year students.

The neutering program offers every student an opportunity to spay an animal as a first surgeon before the end of the 5<sup>th</sup> year.

The Mobile Clinic has been developed in terms of both instrumentation and personnel.

### **Suggestions for improvement in Area 3**

Further emphasis should be laid on quality assurance and quality control, especially in the field of subject co-ordination.

Extension the practical (11<sup>th</sup>) semester is on the agenda of discussions with MIT. If it can subsidise extension of the program, UVMB has plans for another, 12<sup>th</sup> practical semester.

Thanks to informatic developments in UVMB the role of the webinars, self-directed learning, and digital training in UVMB education are planned to increase.



*Area 4.*

**Facilities and equipment**

## Area 4. Facilities and equipment

**Standard 4.1: All aspects of the physical facilities must provide an environment conducive to learning, including internet access. The veterinary VEE must have a clear strategy and programme for maintaining and upgrading its buildings and equipment. Facilities must comply with all relevant legislation including health, safety, biosecurity, accessibility to people with reduced mobility, and EU animal welfare and care standards.**

UVMB is located in the centre of Budapest and also has a field station in Üllő. The main campus of UVMB was built in 1881 at the edge of Budapest but it is now in the centre of the city. The buildings are under architecture protection. There are some more premises within a radius of a few kilometres. The field station can be found in a rural environment about 35 km from Budapest.

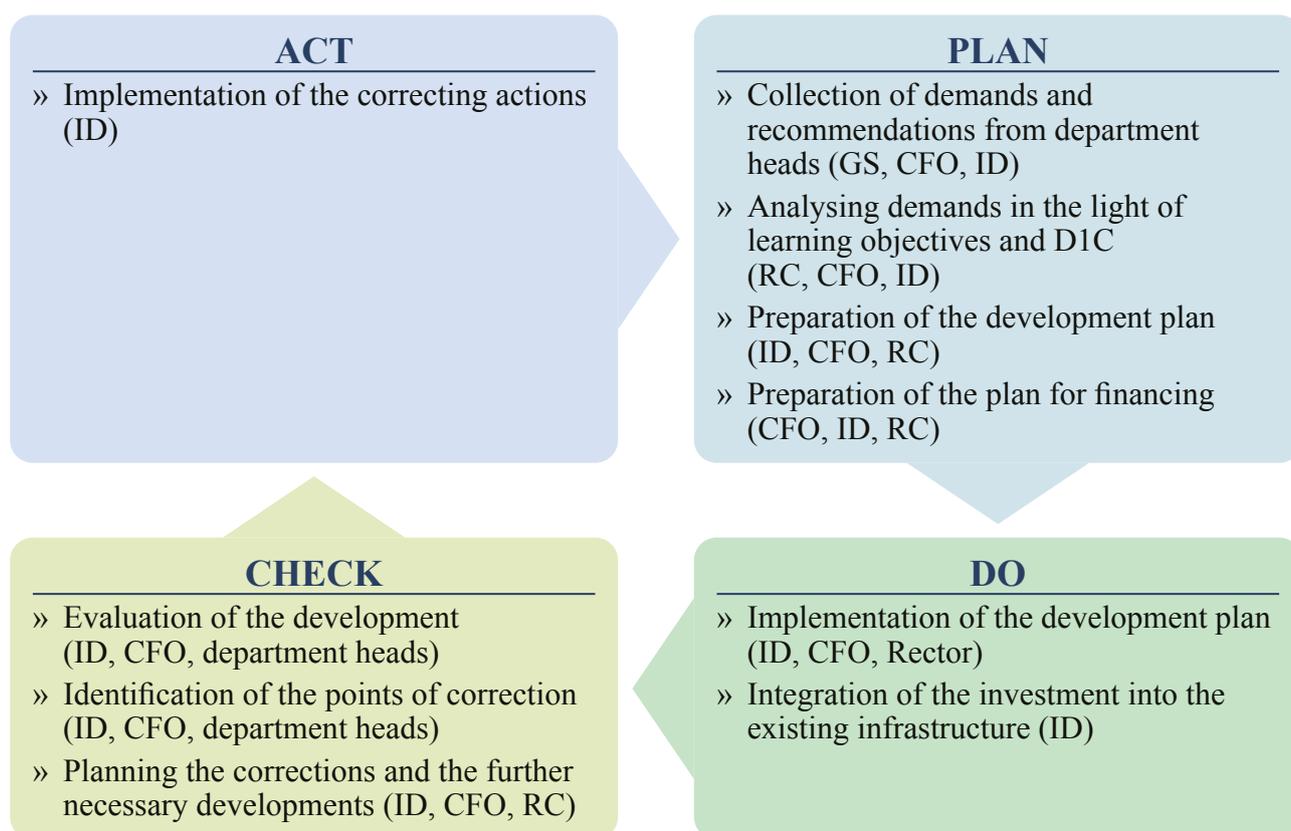
The central administration and most of the units dealing with theoretical education and research, as well as the Small Animal Clinic can be found in the historical locations in Budapest, while the field station is ideal for the TF, the Department and Clinic of Equine Medicine, and the units of the Department of Obstetrics and Food Animal Medicine and the Department of Pathology.

An infrastructure development at UVMB started in 2018. The reconstruction of the Food Animal Medicine Clinic (1,600m<sup>2</sup>) and the students' dormitory in Üllő was completed in 2022. The reconstruction program of the Budapest campus (4,400 m<sup>2</sup>, 190.5M €) started in January 2023. Some units have had to move into temporal facilities for the duration of the renovation.

Address	Units	Area (m <sup>2</sup> )
Budapest VII., 2. István Str.	Main campus	35,337
Budapest VII., 50. Rottenbiller Str.	Institute of Biology, Department of Botany, Department of Nutrition Science and Clinical Dietetics	3,746
Budapest XIV., 23-25. Hungária Str.	Department of Microbiology and Infectious Diseases	11,187
Budapest XIV., 59. Mogyoródi Str.	Students' dormitory	11,547
Budapest VII., 31. Bethlen Gábor Str.	Surgery and Physiology labs	420
Üllő, Teaching Farm	Department and Clinic of Equine Medicine, units of the Department of Obstetrics and Food Animal Medicine and the Clinic and Department of Pathology, Teaching Farm	319,272
Martonvásár	Bos-Genetic. Ltd. Artificial Insemination Centre	4,551

The buildings and the infrastructure used by the UVMB are on property management of the university, so proper maintenance and development are its responsibility. The strategy and program for maintaining and upgrading the facilities are outlined in the Development Plan of UVMB. The main directions of the development plan are discussed and prepared in different committees of UVMB (Rector's Council (RC), and Innovation Committee (RIC), Clinical Council, AQMC) and then is accepted by the Senate. Investment in equipment is suggested by department heads, and this is also discussed in the above committees then the final decision is made by the Rector (Fig. 12).

Fig. 12. PDCA cycle of programme for maintaining and upgrading the current facilities and equipment and/or acquiring new ones



The CFO and the SG are responsible for compliance with all relevant legislation, which is controlled by the different national authorities (Labour Inspectorate, Fire Department, veterinary authorities, public health authorities etc). The Rector issues orders on different topics (occupational safety, biosafety, accidents, risk assessment, personal protection methods, waste management, cleaning and disinfection, vaccinations, fire prevention, radiation, animal experiments etc.) that regulate the everyday operation of UVMB. The regulations are available on the homepage. There are compulsory online courses with exams (occupational safety, biosafety, fire prevention, animal experiments) for staff members and some of which (occupational safety, biosafety, fire prevention) are also compulsory for students.

**Standard 4.2: Lecture theatres, teaching laboratories, tutorial rooms, clinical facilities and other teaching spaces must be adequate in number, size and equipped for the instructional purposes and must be well maintained. The facilities must be adapted for the number of students enrolled. Students must have ready access to adequate and sufficient study, self-learning, recreation, locker, sanitary and food service facilities.**

**Offices, teaching preparation and research laboratories must be sufficient for the needs of the academic and support staff.**

Theoretical education takes place in 13 lecture halls (floor area: 80 to 208 m<sup>2</sup>), there are 4 computer laboratories (32 to 62 m<sup>2</sup>), several seminar rooms, laboratories, and dissection rooms where students can perform practical tasks (Tables 4.1.- 4.4.)

Table 4.1. Lecture halls

Name	Size (m <sup>2</sup> )	Capacity
Tolnay Sándor	140	112
Zlamál Vilmos	149	112
Tormay Béla	149	130
Zimmermann Ágoston	111	113
Marek József	143	105
Kemény Armand	156	148
Magyary-Kossa Gyula	97	97
Urbányi László	156	120
Kotlán Sándor	100	106
Plósz Béla	108	94
Hetzel Henrik	208	132
Exotic clinic lecture hall	80	100
Equine Clinic lecture hall	130	100

The lecture halls are equipped with central display device(s) of appropriate power for their size and darkness, consisting of a laser projector capable of projecting an image onto a screen facing the students for frontal teaching and, if necessary, large repeating monitors to assist viewers seated at a distance or in a fixed position. The maximum number of computers that can be connected to the Teams-based education system is 250, so through the digital connection and stable internet access, lectures can be accessed from outside the classroom, thus enabling hybrid education with active collaboration. WIFI access points are installed in the halls to help student computers connect to the wireless network. The lectures are recorded and transmitted by automatic cameras installed in the classrooms. The teacher is followed and recorded by a specially configured robotic camera. The speaker's sound enters the central unit via an adjustable microphone system, from where it is converted, mixed, reamplified and then passed to the listeners. The audio received in the central system is stored together with the corresponding visual material and made available for students using the Moodle platform. System components installed in special needs areas may differ from the basic configurations depending on the function of the area.

Table 4.2. Computer laboratories

Name	Size (m <sup>2</sup> )	Capacity
Department of Biostatistics 1	62	20
Department of Biostatistics 2	46	20
Department of Biostatistics 3	32	25
Department of Biostatistics 4	32	20

Table 4.3. Premises for group work, seminars

Name	Size (m <sup>2</sup> )	Capacity
N/3	93	20
N/4	93	20
Department of Obstetrics and Food Animal Medicine Clinic L	64	35
Department and Clinic of Equine Medicine	30	30

Department of Botany	48	32
Department of Botany	35	12
Foreign language laboratory 1	28	12
Foreign language laboratory 2	31	12
Foreign language laboratory 3	30	12
Foreign language laboratory 4	32	15
Department of Animal Hygiene, Herd Health and Mobile Clinic	64	35
Department of Animal Breeding and Genetics	48	25
Department of Obstetrics and Food Animal Medicine Clinic (Üllő)	72	55

Table 4.4. Laboratories

Name	Size (m <sup>2</sup> )	Capacity
Department of Microbiology and Infectious Diseases	50	16
Department of Botany	24	10
Library	35	12
Histology laboratory Guzsál Ernő	111	30
Histopathology laboratory Department of Pathology	89	50
Electron microscopy laboratory Department of Pathology	34	20
Histology laboratory Department of Anatomy and Histology	51	30
Department of Clinical Pathology and Oncology	53	30
Examination laboratory 1 Department of Anatomy and Histology	26	5
Examination laboratory 2 Department of Anatomy and Histology	30	5
Dissection room Department of Pathology	62	66
Dissection room Department of Anatomy and Histology	75	50
Department of Pharmacology and Toxicology	48	21
Department of Chemistry (students' lab, under reconstruction)	87	30
Department of Chemistry 1	21	4
Department of Chemistry 2	31	5
Department of Internal Medicine	71	50
Department of Internal Medicine Mócsy room	32	8
Department of Parasitology and Zoology (students' laboratory)	43	30
Department of Parasitology and Zoology (microscopy room)	19	15
Department of Physiology and Biochemistry (biochemistry)	59	18
Department of Physiology and Biochemistry (physiology)	22	15
Department of Internal Medicine (students' laboratory)	56	20
Department of Animal Breeding and Genetics	48	25
Department of Food Hygiene 1 (students' practical room)	36	20
Department of Food Hygiene 2 (students' food technological laboratory)	64	20
Department and Clinic of Equine Medicine	105	60
Department and Clinic of Equine Medicine	40	20

Department of Obstetrics and Food Animal Medicine Clinic (Üllő)	85	55
Department of Obstetrics and Food Animal Medicine Clinic (Üllő)	82	50
Department of Obstetrics and Food Animal Medicine Clinic (Üllő)	81	50
Dissection room Department of Pathology (Üllő)	125	40
Department of Internal Medicine (Building M)	32	25
Dissection room Department of Pathology	33	20
Oncology laboratory	77	10
Surgery practical room (under reconstruction)	92	30
Surgery practical room 1	48	25
Surgery practical room 2	34	10
Surgery practical room 3	28	10
Surgery practical room 4	29	10
Department of Chemistry (Students' lab 1)	50	15
Department of Chemistry (Students' lab 2)	50	15

The practical Skills Labs at UVMB was started in September of 2020 as a fully student-run project with the goal of providing students with additional opportunities to learn clinical skills, as well as specific topics not covered in a standard veterinary education. It was originally staffed by the Skills Lab Director, and a team of student demonstrators from the clinical years, 3<sup>rd</sup> and above – and those students who have extensive experience outside of school. At the same time, dry labs at the Department of Internal Medicine and at the Department of Surgery started involving phantoms, models, and other artificial materials as teaching materials. Currently the Skills Lab activity at UVMB has 3 venues. The Small Animal Skills Lab (SASL) is located in the Nádaskay Hall in the main campus. The Equine Skills Lab (ESL) as well as the Food Animal Skills Lab (FASL) activity is in Üllő. The SASL has a variety of models, some homemade, that allow simulation of cardiopulmonary resuscitation, intubation, injections, cystocentesis, IV catheterisation, urinary catheterisation, patient positioning, and skin suture. Hospital equipment is also available for student training including fluid pump, auto injector, anaesthetic machine, and two ultrasound machines. The large animal space includes cattle and sow reproductive models for palpation and artificial insemination training. The Skills Lab instrumentation and facilities have constantly been renewed and developed by acquiring custom made or ordered/purchased models and phantoms (see also Standard 6.3.).

Study and self-learning premises are purpose built; WIFI is available on the whole campus. Lockers for general use were bought by UVMB, and they are managed by the SC. There are further lockers at units where changing clothes is necessary. Accommodation with appropriate sanitary facilities is provided by UVMB for students who are on night shift in the different clinics or completing on-duty Farm practice. A bistro, cafeteria, and several vending machines are available to students, staff, and visitors. There are also several restaurants, fast food restaurants, and kiosks in the immediate vicinity of the main campus of UVMB. UVMB has a dormitory with a capacity of 300 beds, and there are many renting options available throughout Budapest. The main meeting places for students are the Students' Centre, the Library, the Equus club, and the campus park. The library has a floor area of nearly 900 m<sup>2</sup> and study room has been built in the Equus club where students can study independently or together. There is a gymnasium with one large hall and some smaller rooms for sport on the main campus, and there are also sport facilities in the field station in Üllő and in the students' dormitory.

Staff offices and laboratories meet the general regulations of Hungary regarding size and environmental conditions, these are regularly checked by the Security Department. Research laboratories are fit for research and meet the needs of the certain research area.

**Standard 4.3: The livestock facilities, animal housing, core clinical teaching facilities and equipment used by the VEE for teaching purposes must:**

- be sufficient in capacity and adapted for the number of students enrolled in order to allow safe hands-on training for all students
- be of a high standard, well maintained and fit for the purpose
- promote best husbandry, welfare and management practices
- ensure relevant biosecurity and bio-containment
- be designed to enhance learning.

Housing of the animals is in accordance with current EU animal welfare laws. The premises are continuously updated in order to follow regulations. The staff is educated about animal welfare practices and work safety regulations via regular in-person, and E-learning sessions that are followed by an examination. Only those who have successfully completed the exam can participate in animal and laboratory work.

Livestock (cattle, sheep, pigs, poultry) are kept on the TF under semi-extensive technology (pasture with paddocks for handling for cattle, pasture and stables for sheep and pigs). For the duration of the practical training, they are moved to the stables of the Food Animal Medicine Clinic.

UVMB has 10 healthy horses for teaching. Six of these animals are kept at the Department and Clinic of Equine Medicine, where six standard stalls (12.68 m<sup>2</sup> each) are maintained for them, and a large paddock (917 m<sup>2</sup>) is also available. Four horses are kept at the TF in boxes with paddock.

Beagle dogs owned by UVMB are also used for teaching. As living with a foster provides these animals better circumstances regarding several animal welfare aspects (socialisation and contact with people and other animals, environmental stimuli, attachment bonds, etc.), placement at fosters is preferred over keeping practical animals on campus. Students voluntary foster dogs, and they are taken to the hospital if the need arises. Nevertheless, housing of dogs and cats for teaching purposes is also possible at the campus. There are two kennels (7 m<sup>2</sup> each, with heating and ventilation) attached with similar sized (7 m<sup>2</sup>) outdoor runs which may be used to house six dogs (with a maximum of three dogs per kennel and run). Cats may be housed in one 3 m<sup>2</sup> large room equipped with cat shelves and an attached outdoor area (with a maximum of two cats).

There is also an apiary at the TF that currently has 5 bee colonies, kept in hives according to classic beekeeping practice.

At the Food Animal Medicine Clinic, there are 4 different stables, which can be separated entirely if needed for isolation purposes. Three stables are designed with boxes appropriate for cattle, sheep, goats, or pigs, and the fourth stable is designed for sows with piglets containing 8 farrowing units.

Table 4.5. Facilities for food animals

	Stalls	Type of stall	Area/stall (m <sup>2</sup> )	Species
Stable 1	5	General	12.5	Cattle
Stable 2	6	General	10.5	Cattle, sheep, goats, swine
Stable 3	5	General	3	Cattle
Stable 4	8	Farrowing unit	10	Swine

Research animals are kept in the laboratory animal houses of some departments (Department of Anatomy and Histology, Department of Pharmacology and Toxicology, Department of Physiology

and Biochemistry, Department of Microbiology, and Infectious Diseases). There are also some animals for research in the stables of the Food Animal Medicine Clinic. These animals are isolated from hospitalised and those used in practical.

For hospitalised patients, the equine hospital has four large and one small stables. The overall number of stalls is 57, including four isolation stalls. The sizes of these stalls vary from 11.33 m<sup>2</sup> to 12.68 m<sup>2</sup>. One large stable is used for internal medicine cases, one for surgical patients, one for non-surgical orthopaedic cases, and one for reproductive/obstetric cases. The small stable (two stalls) is used only when all other stables are full. Turnout is also possible for those hospitalised cases which do not require stall rest in six paddocks (overall area is 1202 m<sup>2</sup>; individual areas: 436 m<sup>2</sup>, 295 m<sup>2</sup>, 111 m<sup>2</sup>, 180 m<sup>2</sup>, 90 m<sup>2</sup> and 90 m<sup>2</sup>). (Table 4.6.).

Table 4.6. Facilities for horses

Name of Equine Unit	Number of boxes
Internal medicine, intensive care, and isolation	14 (including 4 for isolation)
Surgery	15
Orthopaedics	13
Reproduction and obstetrics	13
Small isolation	2

There are modular cages of different size in the Small Animal Hospital (Table 4.7.).

Table 4.7. Facilities for companion animals

Unit	Species	Number of cages	Total size (m <sup>2</sup> )
Internal medicine	dog	9-13	14.2
	dog/cat	8	4.6
	cat	6-14	2.4
Surgery, ophthalmology	dog	19	23
	dog/cat	11	5.5
Obstetrics	dog/cat	12	14
Isolation unit	dog	2	2.5
	dog/cat	5	4
	cat	3	1.2

Hospitalised farm animals are kept in the stables of the Food Animal Medicine Clinic and are separated from research animals and those used in practical trainings (Table 4.5.).

The Department of Exotic Animal and Wildlife Medicine provides clinical patient care for reptiles, exotic birds and exotic small mammals but does not receive hospitalisation patients.

The Department and Clinic of Equine Medicine provides clinical activities in internal medicine, anaesthesiology, soft tissue, and orthopaedic surgery, theriogenology, ophthalmology, orthopaedics, diagnostic imaging, and dentistry. Clinical work is done in a large, central examination room, two smaller examination rooms (one for orthopaedics, and another one for ophthalmology), and a separate area with three additional stocks for internal medicine and dental cases. In the stable for reproductive cases, separate stocks are used. Two surgical theatres are available, one for colic, and another one for sterile surgeries. Horses are anaesthetised for surgeries in a padded drop-down box and recovered in a separate padded recovery box. Most laboratory examinations for patients are done at an in-house

laboratory, though external laboratories are also used for some tests. Necropsy and histopathology for equine patients are provided by a unit of the Department of Pathology housed in proximity of the equine hospital.

The Small Animal Hospital, the Department of Internal Medicine is located in three different buildings (A, B and M), with a total surface area of 265 m<sup>2</sup>. The main units are the Internal Medicine Ambulance (building A and B, 70 m<sup>2</sup>), the Internal Medicine Hospital (86 m<sup>2</sup>) including the Intensive Care Unit (building A), the Infectious Unit (building M; 52 m<sup>2</sup>), and the Instrumental Diagnostic Unit (ICU, building A; 42 m<sup>2</sup>). In the ambulatory unit three general consultation rooms and a treatment room are available for emergency, general internal medicine, and speciality consultations and treatments (gastroenterology, endocrinology, hepatology). A designated dermatology consultation room is located in building B. Hospitalised patients are placed in two wards depending on their need for close observation and treatments (Intensive Care Unit or Internal Medicine ward 1), or in the Infectious Unit's wards. The Internal Medicine Hospital also has a consultation room and a haemodialysis room. In the Instrumental Diagnostic Unit two ultrasound rooms are available for ultrasound, cardiology, and nephrology speciality consultations, and one room for endoscopic and otology examinations.

The Department and Clinic of Surgery has a total surface area of 270 m<sup>2</sup> within the Small Animal Hospital (main building) including two surgical suites (soft tissue and orthopaedic), anaesthesia preparatory and recovery rooms, a hospital ward for dogs, and a ward for cats, a hospital treatment room, an isolation ward for animals for suspected or confirmed wound infections, a dental treatment room, three separate exam/consultation rooms. There is also an integrated diagnostic imaging facility including radiography, CT scanning premises, and image reading rooms. A room for morning rounds and journal club meetings is also located in the main building. Ophthalmic examinations are performed in a separate building including an ophthalmology consultation room and a diagnostic room for ophthalmic ultrasonography and other specialised diagnostics (slit lamp exams, ophthalmoscopy, and intraocular pressure testing).

The Small Animal Obstetrics Unit has a total surface area of 104 m<sup>2</sup> within the Small Animal Hospital including a surgical suite, anaesthesia preparatory and recovery room, a separate exam/consultation room, a hospital ward and two rooms for diagnostic examinations equipped to perform ultrasound examinations and vaginal/transcervical endoscopy.

The Food Animal Medicine Clinic has a practical/examination room (85.25 m<sup>2</sup>), an operating room (82.67 m<sup>2</sup>) and a separate room with stocks for rectal examination (130.32 m<sup>2</sup>). The rectal palpation room has stocks for 18 animals. There are also rooms for storage and preparation of medications (12.18 m<sup>2</sup>), storage of medical equipment (12.42 m<sup>2</sup>), two rooms for storage of husbandry tools (13.59 m<sup>2</sup> and 13.7 m<sup>2</sup>) and a separate scrubbing area (12.18 m<sup>2</sup>). There is a Skills Lab (81.09 m<sup>2</sup>) adjacent to 5 laboratory rooms (9.08 to 21.62 m<sup>2</sup>).

The clinical patient care of the Department of Exotic Animal and Wildlife Medicine is currently carried out in two examination rooms, where patients are received, anamnesis taken, basic clinical examinations conducted, and non/minimal invasive procedures performed. Dental treatments take place in the larger examination room. For imaging examinations, there is a licensed X-ray room and an X-ray device that uses digital imaging technology. A small operating room for invasive surgical procedures is available, equipped with an endoscope.

In addition to the clinical diagnostic work several departments provide diagnostic services to external clients.

The Department of Pathology provides comprehensive diagnostic service (diagnostic necropsies and histopathological examinations on mammalian species and poultry, histopathological analyses on biopsies, diagnostic immunohistochemical examinations with 32 different antibodies, electron microscopy on tissues, cell culture supernatants, molecular real-time and end-point PCR based detection of pathogens including wide range of porcine, canine, feline and poultry viruses, sequence analyses and phylogenetic tests, RNA based *in situ* hybridization on various viruses) as well as forensic investigations and expert opinions in judicial cases.

The Food Animal Medicine Clinic offers physical examination, ultrasonography, and basic laboratory diagnostic tests (haematology and biochemistry) for cattle, small ruminants, and swine. The clinic also offers a wide range of reproduction services, such as cycle diagnostics and reproductive treatments (rectal palpation, ultrasonography, insemination). There are also possibilities for advanced assisted reproduction (e.g., laparoscopic insemination of small ruminants, embryo transfer). The clinic is appropriate for performing the common surgeries done in farm animals, as well as experimental surgeries.

In the Department of Microbiology and Infectious Diseases, besides the classical, cell-culture based viral culture techniques, real-time PCR and other molecular methods allow the direct diagnosis of viral diseases of farm and companion animals. Bacterial pathogens are identified using culture, biochemical tests, serotyping, and real-time PCR. Basic antimicrobial resistance tests are also done routinely. Genomic mapping of certain viruses and bacteria is performed as needed. At the department, several types of serological diagnostic tests are applied for the indirect diagnosis of animal diseases and zoonoses, such as ELISA and western blot.

The Department of Clinical Pathology and Oncology offers complete blood count, as well as clinical biochemical and endocrinological examinations. Metabolic profiles of food animals are examined at the Department of Animal Hygiene, Herd Health, and Mobile Clinic, in addition to antimicrobial susceptibility testing of samples derived from milking cattle. The Department of Pharmacology and Toxicology performs regular antimicrobial susceptibility investigations on phenotypic and genotypic levels, in association with pharmacokinetic/pharmacodynamic analyses. The Department of Parasitology and Zoology performs regular protozoological, endo- and ectoparasitic diagnostic work with classic sedimentation and flotation techniques, while genetic assays are also included in the department's portfolio.

The Equine Hospital is equipped with state-of-the-art equipment. Two ultrasound machines with nine transducers are available for all types of ultrasonography. Three flexible video endoscopes including one overground unit are used for respiratory, gastrointestinal, and urinary endoscopy. Besides echocardiography, a telemetric and Holter electrocardiograph, and transvenous electrical cardioversion are also available for cardiology cases. Two equine anaesthesia machines with monitoring devices are also available. A full arthroscopy and laparoscopy unit is used for minimally invasive surgeries. All standard equipment for fracture repairs is also available, and a diode laser unit is used for upper airway and other surgeries. Diagnostic imaging equipment includes digital radiography (two X-ray generators), computed tomography with a large gantry diameter which is suitable for both standing and recumbent examinations of different body regions, and a Hallmark standing MRI unit for orthopaedic examinations. A high-speed treadmill is in place for select orthopaedic and respiratory investigations. Equipment for ophthalmology includes direct and indirect ophthalmoscopes, slit lamp biomicroscopes, and a device for intraocular pressure measurement. A dental rigid video endoscope unit facilitates the examination of dental cases. The in-house laboratory is used for routine examinations (haematology, biochemistry, blood gas analysis, measurement of coagulation parameters, urinalysis, faecal analysis, and analysis of bodily fluids).

Main equipment used at the Department of Internal Medicine

- Internal Medicine Ambulance: infusion pumps, otoscopes, UV lamp, laryngoscopes, ECG, secretion suction machine, blood and infusion heater, centrifuge (SMC 6 plus Sarstedt), microscope (Dermatology consultation room)
- Internal Medicine Hospital (incl. Intensive Care Unit and Infectious Unit): infusion pumps, injection/perfusion pumps, oxygen cage, oxygen concentrator, laryngoscopes, microhematocrit centrifuge, secretion suction machine, EPOC acid-base analyser, Eppendorf centrifuge, Vet HDO monitor, blood collection monitor, ventilator (Northern meditec CRIUS V6), thermostat, ultrasound machine (esaote My Lab 40 vet), haemodialysis machine (Fresenius Cordiax 5008), and water treatment machine (Fresenius Aqua WTU)

- Instrumental Diagnostic Unit: ultrasound devices (Mindray DC 80-A, Mindray DC-70), ECG devices (Schiller AT-1, Schiller AT-2 plus), Vet HDO monitor, video bronchoscopy device (Karl Storz 11900 BP), video gastroscopy device (Karl Storz 60914 PKS), fiber bronchoscopy device (Karl Storz V60003VB1), patient monitor (Eickemeyer LifeVetM), infusion pump (SK-600 I).

Equipment used at the Department of Surgery:

- Soft tissue and ophthalmic theatre: Drager Primus anaesthetic machines and patient monitors, laparoscopy tower, tissue sealing device, electrosurgical devices, surgical microscope.
- Orthopaedic theatre: Drager Primus anaesthetic machines and patient monitors, arthroscopy tower, electrocautery.
- Dentistry: anaesthetic equipment, dental radiography unit, and dental machine (drill, polish, etc.).
- Radiology: Control-X direct digital X-ray unit.
- CT unit: Drager Primus anaesthetic machines and patient monitors, Revolution ACT 16-slice computed tomography scanner.
- MRI: there is no on-site device, the requests are fulfilled with external contracting partner (VetScan).

The main equipment of the Small Animal Obstetrics Unit includes Drager Primus and Drager Julian anaesthetic machines and patient monitors, electrocautery, Mindray DC-70 ultrasound machine, Minitube TCI FlexiLock endoscope, *light microscopes*, and *Dr. Fritz Video-Compact-System*.

The Food Animal Medicine Clinic is equipped with stocks designed specifically for optimal restraint for examination and standing surgeries. There are surgery tables for small ruminants, and tilting stocks for cattle, as well as automated infusion pumps for liquid therapy and anaesthesia. There are artificial cows for teaching purposes (solving different dystocia cases).

The clinic is equipped for *per os* and parenteral drug administration, and different sample collection methods.

In the Department of Exotic Animal and Wildlife Medicine the equipment used for clinical services are the following:

- Three traditional anaesthesia machines (isoflurane)
- Dental Dremel set for dental interventions.
- Otoscope.
- Scales for determining body weight.
- X-ray source and digital development technology, IT background.
- Endoscope device and auxiliary equipment.
- Light microscope for the examination of routine, native samples.
- Equipment for operating environment (operating table, low power operating lamp).
- Manual instrument sets required for performing surgeries are designed for different groups of animals.
- Electrocautery.
- Surgical monitor.
- Autoclave.

The Institute of Food Chain Science conducts a complex intramural and extramural practical teaching for students to ensure the translation of theoretical knowledge into practical competences.

The following premises support the intramural food hygiene practical training of the students:

- An accredited microbiological laboratory and a students' practical room with 20 seats for students. These capacities serve the students as they gain practical knowledge and hands-on experience with classical microbiological detection methods (plate pouring method, spreading method, end point dilution, membrane filtration, MPN method) using different equipment and instruments

(laminar box, redox-potential meter, autoclave, vortex mixer, Bunsen-burner etc.). This capacity is used beyond regular trainings, as a site of experiments supporting thesis and PhD research.

- A students' food technology laboratory, which offers the students an in-depth understanding of technological risks, especially in field of milk hygiene, dairy products (butter, sweet cream, and dairy based frozen dessert), cheese, and hygiene of meat products (cured meat products, stuffed meat products: raw smoked, fermented, cooked, smoked meat products). The food technological laboratory is equipped with dryer, vacuumizer, ice maker, ice cream maker, deep fryer, smoker, meat mincer, knife sterilizer, manual sausage filler, combined oven, bowl cutter, pasteurizer, cheese ripening equipment, cheese vat, cheese press, moisture analyser, colorimeter, milk analyser, milk separator, thermostat, butter churner, water activity meter. This laboratory is also open for extra-curricular student research activities.
- A food-toxicological laboratory (including preparation rooms, scale room, instrument room). Its primary function is to demonstrate the analysis of certain components and chemical contamination (e.g., drugs, pesticides, amines, PAH, nitrosamine etc.), measured by HPLC-FL and LC/MS-MS in different foods. This laboratory also supports experimental student projects and contributes to the academic research activities of the Department.

The intramural food hygiene practical training is organised to demonstrate the practical aspects of veterinary public health, and to complete and deepen the theoretical knowledge provided during the lectures. The manual exercises with technological procedures related to the most important food products contribute to understanding of the importance and practical aspects of the HACCP system, and lead to a way of complex thinking about food chain safety.

The following extramural premises are involved in the food hygiene practical teaching:

- Pig, cattle, and other animal (sheep, goat, poultry, rabbit etc.) slaughterhouses, where the students must perform meat inspection to complete their corresponding intramural training.
- Several food business operators from various areas of the food chain are also visited during the practical training to offer a complex view on the food chain safety related challenges and good practices for the students. The following sites are visited:
  - A site of primary production (dairy cattle farm, swine farm, poultry farm, fish farm), which is subject of a HACCP and a food safety control exercise during the practical training.
  - A food processing establishment (bakery, meat processing establishment, milk processing establishment, game processing establishment, coffee roastery etc.), being subject to a food safety inspection (a demonstration of an official control procedure).
  - A catering establishment (restaurant, cooking kitchen, heater kitchen etc.), being subject to a food safety inspection.
  - A wholesale storage unit being subject to a food safety inspection.
  - A retailer (market hall including e. g. butchery, cheese shop, milk shop, shop with fresh fruit, vegetable, fishery shop, bakery etc.), being subject to a food safety inspection.
  - A small-scale food producer, being subject to a food safety inspection.

A total of 35 supervisors in Hungary and about 60 supervisors in other EU countries (depending on the number of students) are involved in the on-site practical training activities. Most of the supervisors have supported the practical training of students for many years, however, we continuously work on refreshing the selection of the sites to offer the students a broad scale of practical experience from traditional small-scale family-owned producers to large-scale factories equipped with the latest technology and integrated in the international supply chain. The on-site training courses always end with an oral exam to share and discuss experiences.

**Standard 4.4: Core clinical teaching facilities must be provided in a veterinary teaching hospital (VTH) with 24/7 emergency services at least for companion animals and equines.**

**Within the VTH, the VEE must unequivocally demonstrate that standard of education and clinical research are compliant with all ESEVT Standards, e.g., research-based, and evidence-based clinical training supervised by academic staff trained to teach and to assess, availability for staff and students of facilities and patients for performing clinical research and relevant QA procedures.**

**For ruminants, on-call service must be available if emergency services do not exist for those species in a VTH.**

**The VEE must ensure state-of-the-art standards of teaching clinics which remain comparable with or exceeding the best available in the private sector.**

**The VTH and any hospitals, practices and facilities (including EPT) which are involved with the curriculum must meet the relevant national Practice Standards.**

The VTH consists of species-specific referral clinics, receiving patients not only from Hungary, but also from the surrounding countries. The Equine and the Small Animal Clinics provide constant 24/7 medical and surgical patient care (hospital and Intensive Care Unit) including emergency services which are directly integrated within the clinical education for students (day and night shift on-duty service). The Small Animal Clinic and the Equine Clinic accept patients coming directly to the hospital without referral, mostly as emergencies. The Food Animal Medicine Clinic is active mostly in the framework of ambulatory (mobile) clinic and take students to the farms according to a schedule. However, on-call service is also available using a central phone number seen on the website. The Clinic of Exotic Animal and Wildlife Medicine provides consultations as well as medical and surgical care 5 days a week, 8 hours a day, working together with Budapest Zoo as contractual partner.

The service portfolio of VTH and ambulatory clinic according to species is seen in the table below:

Equine Clinic	Diagnostic imaging: X-ray, ultrasound, endoscopy, CT, MRI. Internal medicine: general internal medicine, dermatology, cardiology, neurology. Anaesthesiology: perioperative care, pain management. Surgery: general traumatology, orthopaedics, gait analysis (treadmill), regenerative medicine, physiotherapy, ophthalmology, dentistry, soft tissue surgery including colic surgery, oncology. Gynaecology, andrology, assisted-reproductive technologies, obstetrics, and neonatology
Small Animal Clinic	Internal medicine: general internal medicine, cardiology, dermatology, endocrinology, hepatology, nephrology, oncology. Anaesthesiology: preoperative consultation, perioperative care, pain management. Diagnostic imaging: x-ray, CT, teleradiology, ultrasonography, endoscopy. Although MRI does not exist on site, but a contractual partner (VetScan) has been providing education (elective course) and imaging service for UVMB. Surgery: Soft tissue, orthopaedic and neurosurgery, minimally invasive surgery. Obstetrics, reproduction, andrology, shelter neutering program.
Food Animal Medicine Clinic	Internal medicine and surgery, herd health management focusing on fertility, calf, and piglet health. Gynaecology, andrology, assisted-reproductive technologies, obstetrics, and neonatology
Clinic of Exotic Animal and Wildlife Medicine	Small mammal medicine and surgery, avian and reptile medicine, with diagnostic imaging facility, wild animals: contractual educational partnership with Budapest Zoo.

Within the VTH and ambulatory clinic, research-based (e.g., students are directly involved in clinical research project through thesis workings) and evidence-based concept (e.g., case discussions based on literature review, journal club sessions with students) have been established and practiced and are directly integrated in the hands-on clinical education. The VTH clinics have been regarded as

“top referral institutions” among practitioners in the country for providing high level state-of-the-art clinical service exceeding the level of the private sector regarding both the number of European and national specialists and the clinical instrumentation.

VTH and ambulatory clinic are operated in harmony with the students’ theoretical and hands-on clinical training schedule starting with Equine and Small Animal Medicine in the second semester of the 3<sup>rd</sup> year ending with the practical 11<sup>th</sup> semester in the 6<sup>th</sup> year. Students are fully involved in emergency critical care, rounds, journal clubs, specialist consultations, and hospital treatments. This includes activity at the ICU, assisting surgery, and performing post-operative care, according to the timetable of clinical rotation (equine, small animal internal medicine, surgery and obstetrics, mobile ambulatory clinic, one week per each clinic) in the framework of day and night shifts in a 24/7 manner. Small groups of 2 to 3 students are allocated by clinical scenarios. In addition, there is a 4-week-long summer clinical practice after the 4<sup>th</sup> year, 2 weeks of which are obligatory to be spent at VTH. The hands-on clinical training is continued in the 11<sup>th</sup> semester by a 4 or 8-week block also accomplished at VTH.

Although the overall clinical activity of VTH and ambulatory clinic is by law not controlled by the Hungarian Veterinary Chamber (HVC) (Act No. CXXVII/2012), UVMB has always cherished a mutually flourishing and professionally fair relationship with the HVC, and clinician experts of UVMB were involved in the establishment of the Directive of Practice Standards of the Chamber. The clinical activity of VTH and the ambulatory clinic not only meets these national standards and directives, but exceeds them, which is why the VTH receives many referral cases.

**Standard 4.5: The VEE must ensure that students have access to a broad range of diagnostic and therapeutic facilities, including but not limited to: diagnostic imaging, anaesthesia, clinical pathology, intensive/critical care, surgeries and treatment facilities, ambulatory services, pharmacy and necropsy facilities.**

In the framework of different clinical subjects and clinical work students not only have access to the different clinical facilities but also learn how to properly use them. Students start clinical subjects in the 6<sup>th</sup> semester, and they participate in clinical work until the end of their studies. Clinical training and clinical work are done in small groups, so there is access to hands-on practice under the supervision of the clinical staff of UVMB. Standard 4.3 gives detailed description regarding the facilities and equipment available for access.

**Standard 4.6: Appropriate isolation facilities must be provided to meet the need for the isolation and containment of animals with communicable diseases. Such isolation facilities must be properly constructed, ventilated, maintained and operated to provide for animal care and for prevention of spread of infectious agents. They must be adapted to all animal species commonly handled in the VTH.**

There are isolation units for companion animals at the main campus in Budapest, for horses in the Equine Clinic (Üllő) and for food producing animals also in Üllő.

Unit	Species	Number of cages/boxes	Total size (m <sup>2</sup> )
Small Animal Hospital	dog (safety level 4)	2	2.5
	dog/cat (safety level 4)	5	4
	cat (safety level 3)	3	1.2

Equine Clinic	horse (safety level 3)	3	12
	horse (safety level 4)	4	12
Food Animal Clinic	cattle/pig/sheep/goat (safety level 4)	4	6

The isolation facilities meet the requirements of biosecurity. The Biosafety SOP (<https://univet.hu/wp-content/uploads/2023/03/SOP-ver-1.0-ENG.pdf>) is available in three languages and describes the measures to be followed in the isolation facilities.

**Standard 4.7: The VEE must have an ambulatory clinic for production animals or equivalent facilities so that students can practise field veterinary medicine and Herd Health Management under academic supervision.**

At UVMB, 4<sup>th</sup> and 5<sup>th</sup> year students take part in ambulatory (mobile) clinical practical training at livestock farms. In one academic semester, this includes approximately 60-70 Hungarian and 70-80 English students from semesters 7 through 9. Each student participates for a duration of 60 hours in a block. The students' time schedule is announced at the beginning of the semester in groups of 5. At these practical training different tasks arise during the routine therapeutic and preventive animal health care of farm livestock (ruminants, pigs, poultry species) which provide opportunities for students to familiarise themselves with, and practice real life health care situations under the guidance of university instructors, in real working conditions. The practical location is provided by various livestock farms through a cooperation with UVMB. The details are written in Standard 3.1. Herd health management practice (Farm visit) is also obligatory for each 4<sup>th</sup> and 5<sup>th</sup> year student taking the core subject Animal Hygiene and Herd Health 1 and 2 to obtain their signature for the subject. Each student participates for a duration of 15 hours, of which 12 hours are farm visits and 3 hours are plenary exercises. The schedule of the students' farm visits is announced in groups of 2 to 8 people, and the specific practice locations are determined the week before the practice. During these farm visits, students gain knowledge and practice related to the health protection of farm livestock (ruminant, pig, or poultry), herd health management, health monitoring procedures, and disease prevention of animal farms in a working environment under the guidance of their university instructors.

The mobile clinic uses 4 vehicles with 5 or 7 seats. They are equipped with the necessary instruments, as detailed in the Table below.

Diagnostic instruments and tools used in Mobile Clinic	No.
Ultrasound Scanner 1.5/7.5 Mhz (Agroscan, France)	1
i-STAT Abbott Point of Care Handheld Diagnostic Blood Analyser (gases, chemistries and electrolytes) (USA)	1
Testo 206 Versatile Pocket-Size pH/C° meter (USA)	3
D384M Infraray Thermal Camera (China)	1
BHB-Check handheld blood ketone tester (Thailand)	4
ZOOM H4nPro Handy Recorder for Audio Recording (China)	1
Milwaukee MA871 Digital Refractometers for Colostrum and Plasma Brix % measurements (USA)	3
PS 1000 Animal Scale	1
DeLaval DCC milk somatic cell counter (Sweden)	1
Single and multiple use medical tools and materials (digital thermometers, syringes, catheters, samplers, gastric tubes, cool boxes etc.)	

Renco back fat measuring ultrasound (USA)	1
Mindray General Imaging ultrasound systems (China)	1
MS Schippers Multiscan digital 5.0 MHz (Netherlands)	1
Dr. Fritz laparoscopy set (Germany)	1
Eickemeyer Handheld Refractometer (Germany)	1
BCF Easi-Scan Go IMV Imaging (Ireland)	1
Environmental and herd diagnostic and measuring instruments for farm visits	
Kestler 5400 Cattle Heat Stress Tracker (USA)	2
Drager Xam 8000 portable gas detector (Germany)	1
Drager Xam 7000 portable gas detector (Germany)	1
Trotec PC220 Particle Counter (Germany)	2
MicroBio MB2 Bioaerosol Sampler (England)	1
Testo 480 Multifunction climate measuring instrument (USA)	2
Penn State TMR Particle Separator (USA)	2
Nasco Digestion Analyser (USA)	2
Leica Disto TM D2 laser distance meter (Germany)	1
Yukon Laser Rangefinder Extend LRS-1000 (USA)	2
Voltcraft DL-181HP Temperature and Humidity Data Logger (Germany)	1
Voltcraft DL-210HP Temperature and Humidity Data Logger (Germany)	1
Hobo Pedant Data Loggers (Great Britain)	20

**Standard 4.8: The transport of students, live animals, cadavers, materials from animal origin and other teaching materials must be done in agreement with national and EU Standards, to ensure the safety of students and staff and to prevent the spread of infectious agents.**

UVMB has a significant fleet of vehicles. Including but not limited to 10 cars (4 to 7 seats), 4 trucks, 5 buses (9 to 50 seats) and nearly 20 other vehicles (agricultural tractors, animal transporters, sniffers, trailers, etc.). There is a scheduled bus service to the field station in Üllő using a UVMB owned bus with 50 seats. In case of need additional busses are hired.

Diseased animals are transported by the owners to the VTH, healthy animals are sometimes transported within the TF using own trucks.

Cadavers and organs are transported by external partners having the required license. Transportation of cadavers and organs within the premises of UVMB (using drip-free handcarts, plastic bags, forklift for large animal carcasses) happens according to the rules of the Biosafety SOP.

**Standard 4.9: Operational policies and procedures (including e.g., biosecurity, good laboratory practice and good clinical practice) must be taught and posted for students, staff and visitors and a Biosafety manual must be available. The VEE must demonstrate a clear commitment for the delivery of biosafety and biosecurity, e.g., by a specific committee structure. The VEE must have a system of QA to monitor and assure clinical, laboratory and farm services, including a regular monitoring of the feedback from students, staff and clients.**

Good Laboratory Practice and Good Clinical Practice are included in the teaching objectives of the different subjects.

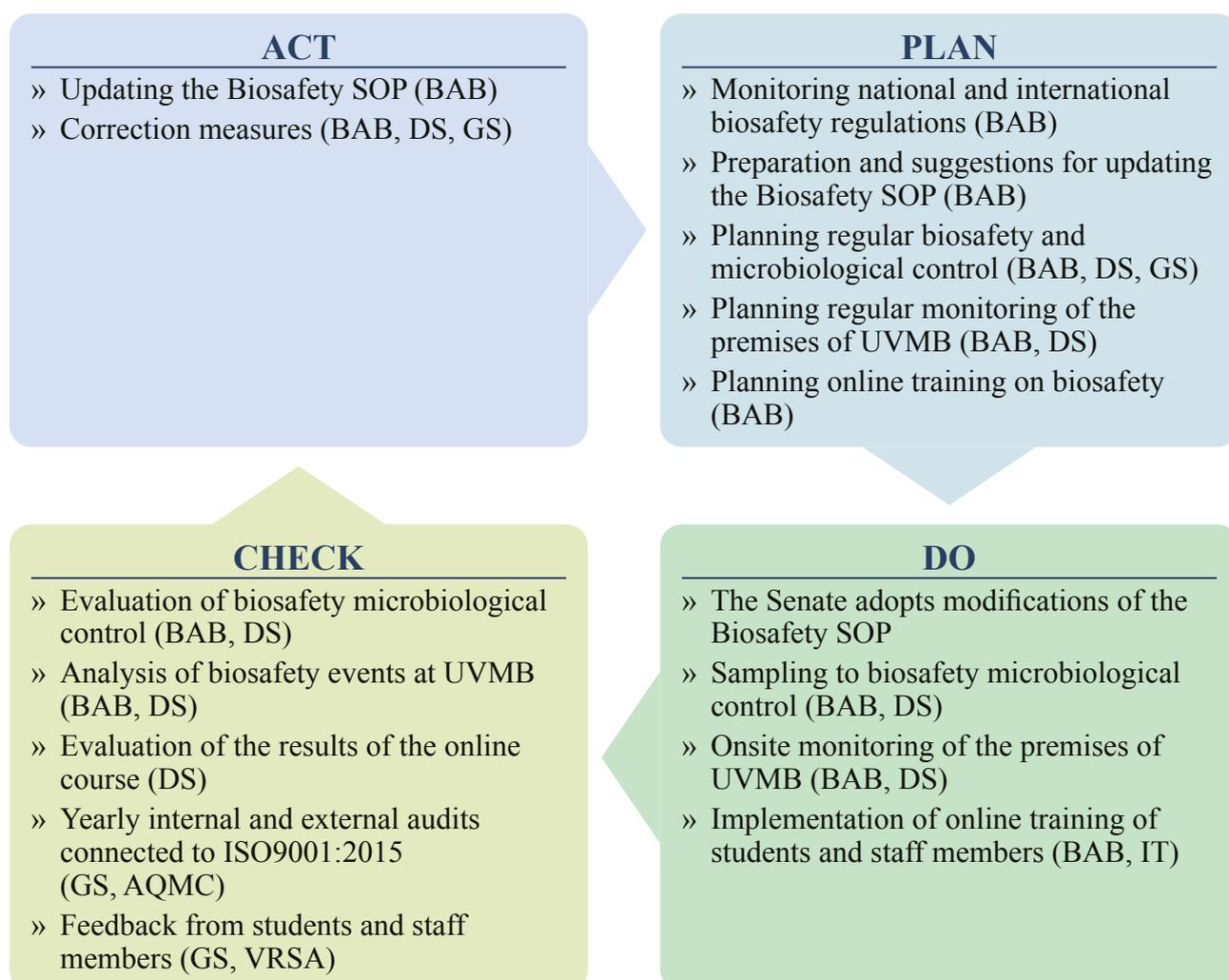
In order to protect staff, students and clients from exposure to zoonotic pathogens, and to create an

environment where the care of animal patients can be optimised by minimising the risk of nosocomial infection and transmitting infectious agents from the premises, UVMB places great emphasis on increasing the level of biological safety and security in its facilities. As a major part of this, UVMB makes efforts to expand students' knowledge of biosecurity and infection control by demonstrating appropriate infection prevention, control, and disease surveillance procedures, as well as providing information to clients and other members of the public about animals and humans in relation to the control and prevention of infectious and parasitic diseases. Ultimately, this activity also serves to protect the operational capabilities of UVMB. Signposts and pictograms in lecture halls, laboratories, and clinics focus on biosafety measures.

For this purpose, all units have a safety coordinator appointed by the Rector who is responsible for biosafety and biosecurity. Their activities are coordinated by the Biosafety Advisory Board (BAB). Its task is to establish appropriate biological safety guarantees, it performs preparatory, analytical, evaluation and control tasks related to biological safety, promotes the biosafety policy of UVMB, regularly revises policy, monitors compliance with current legislative requirements, and operates the biological safety communication channels. In the event of an epidemic, it proposes temporary emergency measures and rules. BAB rules of procedure are available on the intranet.

Staff members and students must pass an online training and exam. At the start of practical training in all departments, as part of occupational health and safety training, they receive in-person training on department-dependent specific rules. The Biosafety SOP is available in Hungarian, English and German on the homepage (Fig. 13.)

Fig. 13. PDCA cycle of Biosafety SOP



Feedback is regularly collected from clients; they are evaluated following the guidelines of ME-09.

### **Comments on Area 4**

Some departments have had to move at the beginning of January 2023 due to reconstruction works. The temporary teaching and research facilities meet the minimum requirements and keeping biosecurity measures in these interim locations has remained a key issue.

Building of the Centre for Comparative Medicine and Experimental Animal House (21 000 m<sup>2</sup>) will be started in 2024. It will provide the opportunity to create an outstanding research centre for animal health and healthcare developments with a high market value.

### **Suggestions for improvement in Area 4**

Reopening the restaurant (university canteen) after the reconstruction is requested by students and staff members.

Installation of electronic sockets in the old lecture halls would be useful.



## *Area 5.*

**Animal resources  
and teaching material  
of animal origin**

## Area 5. Animal resources and teaching material of animal origin

**Standard 5.1: The number and variety of healthy and diseased animals, cadavers, and material of animal origin must be adequate for providing the practical and safe hands-on training (in the areas of Basic Sciences, Clinical Sciences, Pathology, Animal Production, Food Safety and Quality) and adapted to the number of students enrolled.**

**Evidence must be provided that these data are regularly recorded and that procedures are in place for correcting any deficiencies.**

In terms of using healthy and diseased animals for teaching and research purposes UVMB is fully committed with the required special animal welfare approval being in accordance with the relevant internal and external regulatory authorities according to EU Directive 2010/63. Use of cadavers and materials of animal origin is controlled by Biosafety SOP.

Animals and carcasses are used also in the case of basic sciences. Large number of fresh carcasses are used at the anatomy practical training, and live laboratory animals are used in the courses of Physiology, Biochemistry, and Pharmacology, however UVMB tries to replace (e.g., by using artificial laboratory mice) them when possible.

The major strategy of clinical teaching is to provide state-of-the-art hands-on clinical training and research-based graduate and postgraduate education so students acquire D1C and fulfil knowledge and skills according to Article 38(3) of Directive 2005/36/EC.

In the framework of preclinical education students are taught how to handle and care for domestic animals (e.g., on-duty farm practice, propaedeutics etc.). The clinical structure has been organised by animal species and treating enough patients both for graduate and postgraduate training and research. The schedule of the clinical education provides both small group thematic practical trainings (labs) and hands-on clinical practice where students are involved in the everyday routine of the clinics, both in terms of emergency and elective special patient care. All the major clinical fields are represented in the rotating system to provide both intra- and extra-mural activity. Beyond the scheduled shifts, Skills Lab is also available for students as they can take part in organised workshops or can get appointments in a timetable to practice their manual skills under supervision.

Clinical teaching does not stop at the fence of the university, and students are obliged to get acquainted with external partner-institutions (clinics) during compulsory summer practices as well as in the framework of the fully practical 11<sup>th</sup> semester. This possibility is especially important for our English-speaking students who are encouraged to visit practices in their own countries.

The fundamental strategic guarantee of proper and professional clinical training is the current curriculum that includes all sufficient preclinical and clinical subjects in a logical order that is in accordance with point 5.4.1 of Annex V to Directive 2005/36/EC. The second element of the concept is the obligation of each student to fulfil the listed competencies of different fields by using the Logbook, which is the prerequisite of entering the final exam. This document serves as evidence that the most important skills have been taught, practiced, and successfully performed under close supervision of the relevant teacher. The Small Animal Clinic and the Equine Clinic of UVMB provide balance between first opinion and referral cases; however, those skills are allowed to be fulfilled extramurally according to the collaboration with the above-mentioned partners, significantly extending the number of first opinion cases available to students. For food animals the mobile (ambulatory) clinic is the major framework to teach clinical skills in cooperation with external practitioners and farms. The balance between species, disciplines, acute or chronic, first opinion or referral cases are mostly provided by the clinical rotations of different clinical fields and mobile clinic visits as well as by the supervising clinical staff members being responsible for the daily program with small groups of eight

to ten students. These students can be subdivided into smaller groups within the given clinical field.

Animal welfare is a major focus of UVMB in regard to both the teaching of animal welfare principles and their implementation in everyday work.

The very first opportunity of first-year students to get acquainted with welfare of animal is the on-duty farm practice at the TF when they start with equine care. Parallely, first year students also have a mandatory subject of Animal Welfare summarising the most important knowledge in this field within the curriculum, managed by the Department of Laboratory Animal Science and Animal Welfare. Students receive an organised training about how to handle, and care for animals at the first clinical thematic practical training organised by the internal medicine units and students must sign a document that serves as evidence of being taught. Furthermore, the first training of other specific fields (e.g., radiology) also provide training about safety measures. Additionally, students being on the particular clinical rotation (shift) are strictly coordinated and instructed according to the specific field (e.g., anaesthesiology, surgery) on how to handle and care for patients.

The most important and potent body at the field of animal welfare at UVMB is the Animal Experimentation and Welfare Committee (AEWC). It is the major guard over procurement and handling of animals used for education and research. Official committee approval and a detailed plan is necessary to perform any kind of activity with animals. The AEWC organises courses for staff members who are working with animals, and a successful exam is the precondition of animal work. UVMB as one of the most significant actors to serve as guard animal welfare in a wider sense and has several other manifestations. The Centre for Animal Welfare (for animal protection law, analysis, and methodology) was founded at UVMB in January of 2021. This was established to provide scientific background for the theoretical and practical aspects of animal welfare helping the governmental authority, veterinarians, and animal protection organisations in making their decisions, as well as providing the society with scientifically relevant information in this field. The first major achievement of the Centre was the Hungarian Code of Animal Welfare. For the first time in the history of animal protection in Hungary state and government agencies, authorities and professional organisations, and representatives of science, civil animal welfare organisations, and the animal service sector signed a joint declaration at the initiative of UVMB on the 4<sup>th</sup> of October 2021, World Animal Day. The Code is an ethical declaration of intent on animal welfare, as well as a growing community that any organisation that deals with animals or communicates about them may join if it is concerned with animal welfare and is willing to act in their interest.

UVMB is also active in the postgraduate education of animal protection. The first class of the „Veterinary expert in animal protection” course was started in 2022. The Centre for Animal Welfare contributes to the postgraduate specialisation of animal protection in the framework of a cooperation with the Faculty of Law at Miskolc University.

Cadavers and materials of animal origin for anatomy are provided by practitioners of Budapest and the surrounding areas who send or bring these teaching materials accompanied by an official veterinary document including the signalment and all the relevant clinical data of the animal or material. These cadavers are provided by practitioners free of charge for UVMB, since our institution takes over the cost of body destruction. Although the number of carcasses fluctuates, a massive freezing capacity is available both at the Department of Anatomy and Histology and the Department of Pathology to store the education material. Documents are archived at the departments, and cadavers and materials of animal origin are taken away and destroyed after use by a contractual state-owned company.

The sources of cadavers and materials of animal origin in Pathology are the VTHs, (accompanied by standardised, filled, and undersigned document forms registered as hard copy and recorded within the clinical computer system Doki for Vets), external practices (which send the teaching material with relevant documentation), and animal owners whose animals (registered and recorded at the department) are taken and delivered to UVMB by the veterinarians or the owners themselves. Swine, poultry, and rabbit cadavers are also directly sent or brought in by external contractual partners

(farms). The cadavers and materials of animal origin are taken away and destroyed by a contractual state-owned company.

Table 5.1.1. Cadavers and material of animal origin used in practical anatomical training

Species	2022/2023	2021/2022	2020/2021	Mean
Cattle	4	4	4	4
Small ruminants	2	2	2	2
Pigs	30	30	6	22
Companion animals	1,172	1,143	850	1,055
Equine	6	6	6	6
Poultry & rabbits	220	210	30	153
Aquatic animals	0	0	0	0
Exotic pets	0	0	0	0
Others (specify)	0	0	0	0

Table 5.1.2. Healthy live animals used for pre-clinical training (animal handling, physiology, animal production, propaedeutics, ...)

Species	2022/2023	2021/2022	2020/2021	Mean
Cattle	120	120	184	141
Small ruminants	420	420	420	420
Pigs	43	43	67	51
Companion animals	6	10	6	7
Equine	20	19	23	21
Guinea pigs	8	0	8	5
Mice	24	0	24	16
Poultry	859	843	846	849
Rabbits	105	43	112	87
Rats	96	27	96	73

Table 5.1.3. Number of patients\*\* seen intra-murally (in the VTH)

Species	2022/2023	2021/2022	2020/2021	Mean
Cattle	641	604	82	442
Small ruminants	137	136	41	105
Pigs	317	324	344	328
Companion animals	25,586	20,977	25,069	23,877
Equine	908	997	1 371	1 092
Poultry & rabbits	0	0	0	0
Exotic pets	926	1,267	1,648	1,280
Others (specify)	0	0	0	0

\*\* Each patient has to be officially recorded and has to be individually examined/treated by at least 1 student under the supervision of at least 1 member of staff. Each live animal affected by one specific clinical episode is counted as 1 single patient, even if it has been examined/treated by several departments/units/clinics.

Table 5.1.4. Number of patients\*\* seen extra-murally (in the ambulatory clinics)

Species	2022/2023	2021/2022	2020/2021	Mean
Cattle	47,903	55,072	23,154	42,043
Small ruminants	414	0	0	138
Pigs	19,911	16,272	6,995	14,393
Companion animals	0	0	0	0
Equine	0	0	0	0
Poultry & rabbits	81,256	24,457	1,867	35,860
Exotic pets	0	0	0	0
Others (specify)	0	0	0	0

\*\* Each patient has to be officially recorded and has to be individually examined/treated by at least 1 student under the supervision of at least 1 member of staff. Each live animal affected by one specific clinical episode is counted as 1 single patient.

Table 5.1.5. Percentage (%) of first opinion patients used for clinical training (both in VTH and ambulatory clinics, i.e., tables 5.1.3 &amp; 5.1.4)

Species	2022/2023	2021/2022	2020/2021	Mean
Cattle	9	10	12	10
Small ruminants	58	62	55	58
Pigs	26	28	31	28
Companion animals	18	22	15	18
Equine	22	25	28	25
Poultry & rabbits	87	90	91	89
Aquatic animals	0	0	0	0
Exotic pets	75	82	76	78
Others (specify)	0	0	0	0

Table 5.1.6. Cadavers used in necropsy

Species	2022/2023	2021/2022	2020/2021	Mean
Cattle	69	72	69	70
Small ruminants	41	38	33	37
Pigs	860	601	551	671
Companion animals	697	583	655	645
Equine	148	138	104	130
Poultry & rabbits	4,675	4,426	6,546	5,216
Aquatic animals	0	0	0	0
Exotic pets***	8	10	12	10
Others (specify)	0	0	0	0

\*\*\*Exotic pets are dissected both at the Department of Pathology and at Department of Exotic Animal and Wildlife Medicine

Table 5.1.7. Number of visits in herds/flocks/units for training in Animal Production and Herd Health Management

<i>Species</i>	<i>2022/2023</i>	<i>2021/2022</i>	<i>2020/2021</i>	<i>Mean</i>
<i>Cattle</i>	266	143	121	177
<i>Small ruminants</i>	0	0	0	0
<i>Pigs</i>	55	35	34	41
<i>Poultry</i>	46	35	34	38
<i>Rabbits</i>	0	0	0	0
<i>Aquatic animals</i>	0	0	0	0
<i>Others (specify)</i>	0	0	0	0

Table 5.1.8. Number of visits in slaughterhouses and related premises for training in FSQ\*\*

<i>Species</i>	<i>2022/2023</i>	<i>2021/2022</i>	<i>2020/2021</i>	<i>Mean</i>
<i>Ruminant slaughterhouses</i>	1-2	1-2	1-2	1-2
<i>Pig slaughterhouses</i>	2-3	2-3	2-3	2-3
<i>Poultry slaughterhouses</i>	2	2	2	2
<i>Related premises*</i>	5	5	5	5
<i>Others (specify)</i>	0	0	0	0

\* Premises for the production, processing, distribution or consumption of food of animal origin

\*\* Number of days (8 hours/day) spent on the different premises in the 11<sup>th</sup> semester

The number of healthy animals needed for teaching is defined by the subject leader in agreement with the head of the department. In the case of pre-clinical training the Head of the Department of Anatomy approves the type and the quantity of training materials according to the provided number of training hours and topics, either ordering materials of animal origin from slaughterhouses, or allocating frozen or fresh cadavers provided by veterinarian partners (see Standard 5.1). Healthy live teaching animals (horses, cattle, sheep, pigs, poultry) used in animal care practices in Üllő are located on site and belong to the TF. The director of the TF is responsible for providing animals for teaching. Healthy live animals for Physiology are organised by the head of department according to the topics of physiological practical trainings. Contractual partners (farms) also help the Department of Pathology by sending cadavers and/or teaching materials arranged and supervised by the head of the department. Healthy beagle dogs belonging to UVMB are available for clinical trainings supervised by the head of the Department of Internal Medicine.

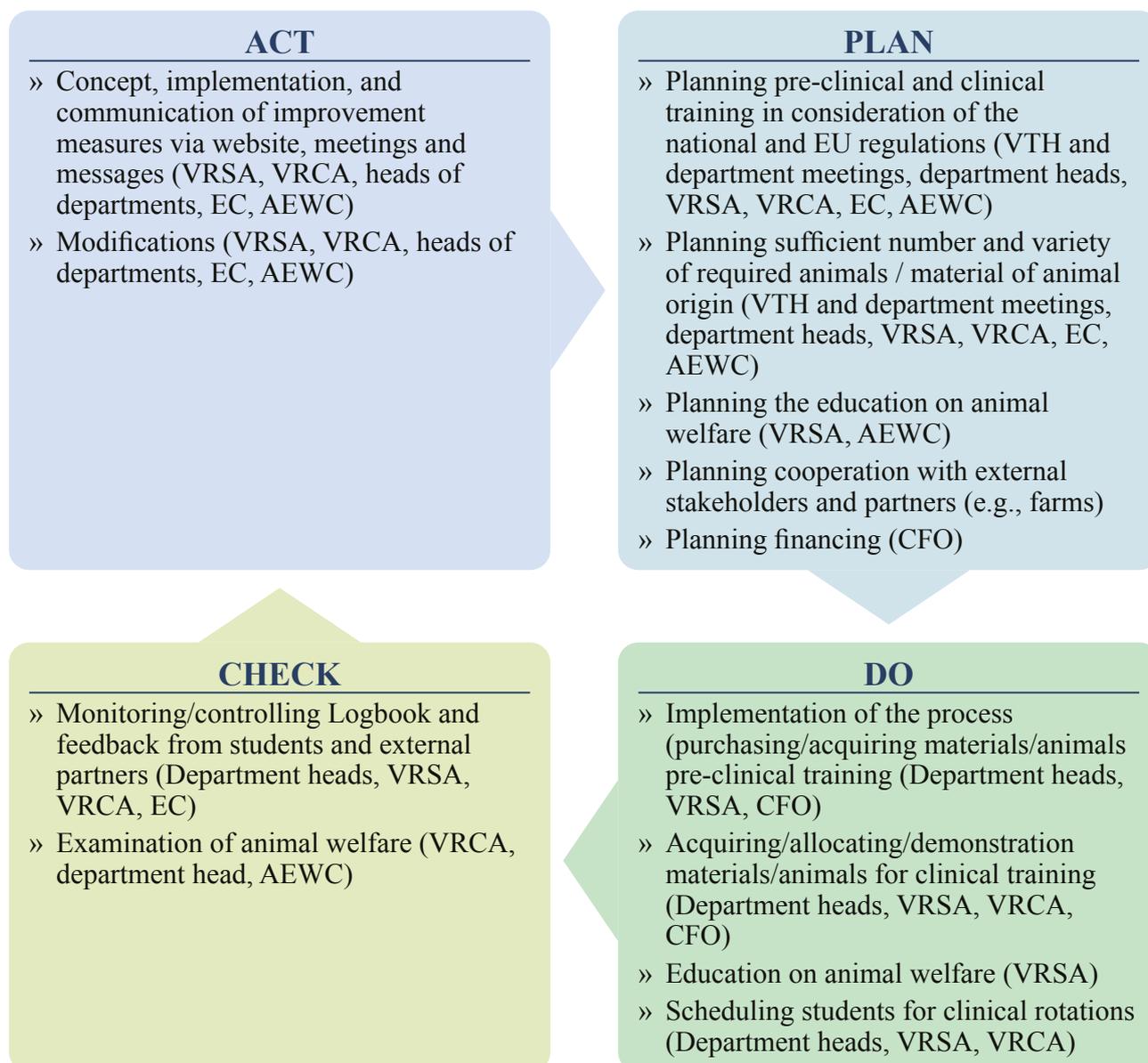
Patients seen in the VTHs are fully available for teaching purposes based on an appointment system. This provides enough animals per day and per discipline in the framework of first opinion patient care, specialist consultations, and surgical procedures. The electronic clinical schedule is shown in the electronic patient recording system and/or Google tables available for staff members and seen by students. The clinics are available for emergencies 24/7 thus students on day or night shifts regularly encounter acute clinical cases. The unit leaders and the heads of clinical departments are responsible for operating the clinical schedule.

Mobile clinic and Herd Health Management visits are organised by the concerned heads of departments with the active cooperation of contractual partners (farms), who organise the appropriate number of healthy or sick animals and involve small group of students in the daily routine of the veterinary activity. FSQ teaching mostly relies on partner slaughterhouses visited by students in the 11<sup>th</sup> practical semester fulfilling Logbook competencies.

The assessment of appropriateness of teaching animal provisions is constantly and/or regularly

assessed by the concerned heads of departments by communicating with staff members and students at rounds, with unit leaders at department meetings, or activating other formal (e-mail, letter) or informal (personal discussion) channels with extra-mural partners. The heads of departments are also responsible for the revision of the so far best practice, extending the circle of extra-mural partners, and finally, contacting the VRCA or directly the Rector, who discuss the issues at regular leadership meetings (Fig. 14).

Fig. 14 PDCA cycle of Animal resources of animal resources and teaching material of animal origin



**Standard 5.2: In addition to the training provided in the VEE, experience can include practical training at external sites, provided this training is organised under direct academic supervision and following the same standards as those applied in the VEE.**

The TF of UVMB in Üllő is approximately 35 kilometres from Budapest. The farm covers 1,146 hectares (ha) of which 81 ha are forest, 768 ha arable, and 159 ha are pasture. The TF works in cooperation with departments, is involved in the undergraduate education, and keeps different animal species such as horse, cattle, small ruminants, swine, poultry, and bees, and produces feed for the animals of UVMB. The teaching staff of the TF consists of 2 veterinarians and 3 agricultural experts,

and an additional 13 technicians care for the animals as well as assist practical trainings.

The on-duty Farm Practice of students in 1<sup>st</sup> to 4<sup>th</sup> semesters where they get acquainted with the everyday routine of professional activities with different species (horse, cattle, small ruminants, swine, poultry, and bee) takes place in the TF provides background for the practical training of animal husbandry (digital body scoring), breeding, nutrition, and offers placement for summer practices of animal husbandry and nutrition.

The TF provides animals for teaching, castration, vasectomy, rectal examination of ruminants, assisted reproduction, caesarean section of cows and sows, care of calves, care of piglets, cryptorchidectomy in pigs, examination of pregnancy, etc.

The TF produces the animals' roughage and grain forage itself; it also possesses a developing and appropriate machine park. Thus, students can experience and study the process of forage production as the necessary associate of animal husbandry.

**Standard 5.3: The VTH must provide nursing care skills and instruction in nursing procedures. Under all situations students must be active participants in the clinical workup of patients, including problem-oriented diagnostic approach together with diagnostic decision-making.**

Initial skills are taught in the framework of the subject Animal Welfare in the 2<sup>nd</sup> semester. Students spend one week in each semester 1<sup>st</sup> to 4<sup>th</sup> in the TF where they learn practical animal care dealing with different animal species. Students gain further nursing skills on later clinical courses such as Small Animal Medicine I, Equine Medicine I, and Food Animal Medicine I, they are also constantly practicing these competencies during clinical shifts and rotations under the supervision of staff members on duty and experienced veterinary nurses. Before starting activity at the clinic, students are taken on a tour as well as provided with a course of how to handle animals, how to apply biosecurity and biosafety measures, and, how to prevent and avoid accidents. Students must undersign an official document that they have received the training.

Group sizes differ depending on the type of the clinical training. In intramural type of training (on clinical days) and in thematic practical training (scheduled in timetable) students form groups of approximately 15 persons. There are 6 to 8 students per discipline (e.g., internal medicine, surgery etc.) per week in clinical rotations, however they are divided into smaller subgroups of 2 to 3 students. In extramural training (e.g., mobile clinic) 5 students are taken to the farm and work together as a team.

Proper hands-on practice is done during the clinical rotation (equine medicine, small animal internal medicine, surgery and obstetrics, mobile clinic) where students directly join as a member of the clinical team. This small unit involves the on-duty vet (intern, resident, clinician, or the specialist), and the student actively taking part in taking history, performing physical examinations, taking blood or other samples, and assisting in radiographic, ultrasonographic, or endoscopic procedures. Anaesthesia, pre-anaesthetic examinations, iv. catheterisation, premedication, ET intubation, induction, maintenance, monitoring etc. are mainly done by a student closely supervised by the responsible clinician. At the surgery practice hands-on work with the student includes pre-operative owner education, discussion on the procedure beforehand, scrubbing in, assisting, suturing, and post-operative monitoring. Students participate night shifts at the ICU of the Small Animal Clinic as well as at the Equine Clinic and are fully involved in emergencies and critical care. Clinical recording by students is allowed only under supervision of the responsible staff member.

The 11<sup>th</sup> practical semester when students are allowed to spend clinical blocks at practitioners recognised and approved by UVMB either in Hungary or (especially for English-speaking students) abroad also plays crucial role in hands-on teaching.

The basic evidence of coping with clinical D1C during hands-on practices is the Logbook in which students must show that they have fulfilled the skills prescribed in the document while supervised by the member of the teaching staff.

There is a huge responsibility of the clinical staff working with students on rotation to provide balanced, but professional circumstances for them to deepen the knowledge, skills, and understanding, acquired during clinical rotations and/or shifts. Round table discussions with the team start the active clinical day and talk about the expected clients, procedures, and tasks. Continuous case discussions should be part of the diagnostic/therapeutic process to give the students the chance to ask questions or state concerns. Explanations of differential diagnosis and creating the problem lists are also crucial parts of the clinical teaching. At the end of the day, students are encouraged to double check the diseases and procedures at home and can be questioned again the next day to reinforce the knowledge they have gained. If the discussion with the owner happens in Hungarian, the information is always summarised by the veterinarians for the English-speaking students.

**Standard 5.4: Medical records must be comprehensive and maintained in an effective retrieval system (preferably an electronic patient record system) to efficiently support the teaching, research, and service programmes of the VEE.**

UVMB uses a bilingual (Hungarian and English) electronic patient recording system software (Doki for Vets). All clinics and the Department of Pathology are included in the network. The system can register and retrieve patient records, operate the waiting list, and the appointment chart of different disciplines, handle all the diagnostic results, and is connected to the laboratory devices, so direct e-mails with attachments can be sent to the client. Pathologic results are also listed among the reports. The system is mostly used by the staff members, though students are allowed and invited to use it under the veterinarian's supervision. This system makes it possible for students to check the list of appointments, the signalment, the records so far, and findings of cases to prepare to fulfil their Logbook skills. Doki for Vets can also handle diagnostic imaging software (e.g., Radiant) enabling the staff and the students to display radiographs or CT images. Searching for many kinds of parameters or data is easily possible supporting retrospective studies and doctoral thesis. The system generates the items of the bill from lists of clinical fees.

## Comments on Area 5

Thanks to an agreement UVMB receives horse carcasses from the Police, and this has considerably increased the case load.

Carcasses of companion animals are frequently offered by the owners free of charge for teaching purposes.

There is continuous debate on the contradiction between animal welfare and practical training on live animals.

There was a fluctuating case load in recent years because practical training during the lockdown was postponed until the next semester.

Accepting the suggestion of the students the Skills Lab is run under coordinated supervision by teachers and students to respect the animal welfare principles and to help our students' self-learning activities in the field of clinical practice.

The intramural clinical work at the Food Animal Medicine Clinic is limited because farmers having disease free herds (IBR, BVD, Enzootic leucosis etc.) do not want to bring animals into the clinic due to risk of infections. The low number of intramural food animal cases is compensated by the mobile clinic activity, and purchasing animals (e.g., pregnant cows or sheep) for scheduled practical trainings.

## Suggestions for improvement in Area 5

After completing the reconstruction more exotic animal cases can be expected





*Area 6.*

**Learning resources**

## Area 6. Learning resources

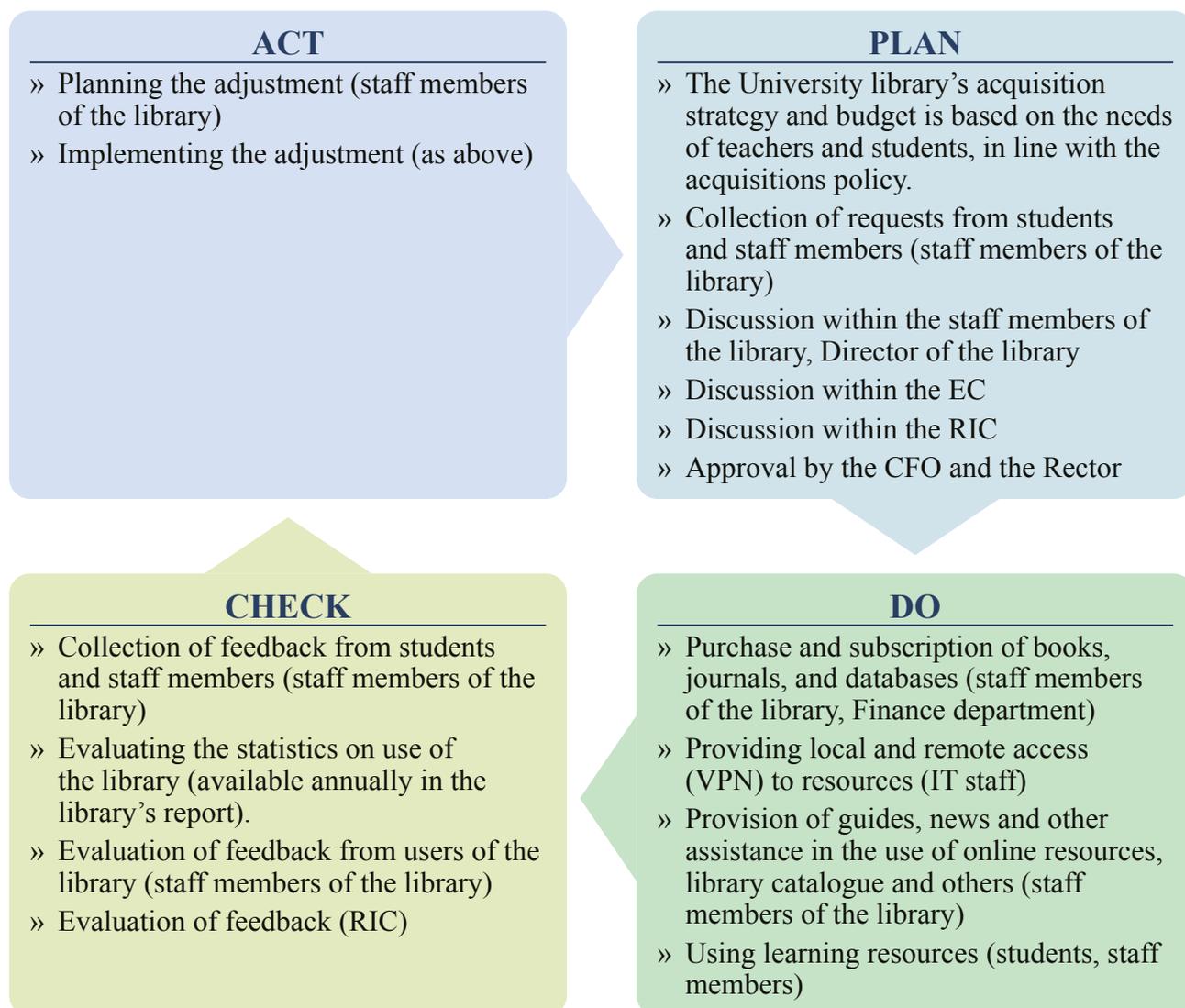
**Standard 6.1: State-of-the-art learning resources must be adequate and available to support veterinary education, research, services and continuing education. When the study programme is provided in several tracks/languages, the learning resources must be available in all used languages. Timely access to learning resources, whether through print, electronic media or other means, must be available to students and staff and, when appropriate, to stakeholders. State-of-the-art procedures for bibliographical search and for access to databases and learning resources must be taught to undergraduate students.**

UVMB's strategy objective is to ensure that students and staff members have continuous access to the necessary high-level learning resources including teaching material, books, journals, and databases. Through the library, UVMB provides remote and local access for everyone to electronic and paper-based resources (books, lecture notes, journals, etc.). With the help of WIFI there is access to internet, and Eduroam network throughout the entire campus. With a VPN service, electronic learning resources of UVMB are also available from home to all university citizens. The e-learning system maintained by UVMB (<https://elearning.univet.hu/>) and the repository (huveta.hu) offer broad access to the available course materials and documents. The EC assists the library in commenting on and evaluating proposals for the writing of notes for publication, while the Research and Innovation Committee (RIC) helps the library to formulate its strategy and support its science policy.

On the Orientation Day organised before the academic year, freshmen receive a Students' Guide, which includes information on the availability and services of the library, and information can also be found on the Neptun system. All freshmen take part in an introductory library lesson in the first month of the semester, when they learn about the available services and resources, basic search interfaces and online aids. In addition to formal training courses, the library also provides informal training courses on the use of the library, search engines, and electronic resources immediately upon request. The IT group manages and helps solve any emerging IT problems. The librarian-held course on thesis writing is mandatory for every 4<sup>th</sup>-year student in the curriculum of the veterinary education.

The University library's acquisition strategy and budget is based on the needs of teachers and students, in line with the acquisitions policy. Purchases of the university library that require significant investment (e.g., electronic journal subscriptions) are made with the support and agreement of the RIC. In all cases, the library organises the acquisitions based on The Rules of Collection and with a special regard to the current needs of students, university professors, researchers, and practitioners. All printed or electronic journals and books are requested and purchased through the university library and the documents purchased in this way are added to the university's collection (Fig. 15). The library regularly shares information about the available learning resources on its website, Facebook and Instagram pages. More than 92% of the books in the reading room can be borrowed. It is also possible for all university citizens to access electronically subscribed books and periodicals from home using VPN.

Fig. 15. PDCA Cycle of Learning Resources



**Standard 6.2: Staff and students must have full access on site to an academic library administered by a qualified librarian, an Information Technology (IT) unit managed by an IT expert, an e-learning platform, and all the relevant human and physical resources necessary for the development of instructional materials by the staff and their use by the students.**

**The relevant electronic information, database and other intranet resources must be easily available for students and staff both in the VEE's core facilities via wireless connection (Wi-Fi) and from outside the VEE through a hosted secured connection, e.g., Virtual Private Network (VPN).**

The Hutýra Ferenc Library, Archives, and Museum of UVMB is the only public veterinary and animal health library in Hungary. It has a wide collection of books and journals in Hungarian and the main languages of the university, including English and German. Computers, printers, and scanners are at the disposal of library users ([https://konyvtar.univet.hu/?page\\_id=34&lang=en](https://konyvtar.univet.hu/?page_id=34&lang=en) ).

The staff of the library consists of 5.5 FTE trained librarians with MSc degrees and the library is managed by a library director. Their work is helped by 3 support staff persons.

The reading room is open 48 hours a week from Monday to Friday during study and exam periods. The study room in the Equus club is open from 7.00 am to 10.00 pm (See details in Standard 6.3).

Annual budget (€)	2022/2023	2021/2022	2020/2021	Mean
	279,283	215,630	261,154	252,022

The library is located on the campus, in building D, with a total of 1,133 m<sup>2</sup>, of which 600 m<sup>2</sup> is reading space. There are 106 seats in the reading spaces and 90 seats in the study room. A total of 15 computers and approx. 50 sockets are available for students in the main reading room.

The library catalogue can be searched through the open public access catalogue (OPAC) interface of the Liberty Library Management System.

There are departmental libraries in almost every department. The main library is responsible for ordering, purchasing, and processing materials for departmental libraries, thus every new volume is included in the OPAC of the library. It has an up-to-date list of all holdings of subsidiary libraries and regularly checks the material (stock-taking) at the departments. Except for a few manuals used daily at laboratories, books are available for borrowing or lending from the departments as well. Students or other libraries requiring materials from the departments may do so via the central library, which co-operates with the departments in managing the interlibrary or student lending.

There are 11 employees at the IT department, out of which two are study technicians and three are IT specialists who help in personal education. The e-learning support is provided by three contracted persons. There are 4 employees who are responsible for the university network and server infrastructure. The IT department provides services and support to students and other employees, including an online error management system and remote assistance for students and colleagues via phone, online or in person. UVMB has 1500 digital endpoints, 700 clients, and 110 printers. A high-capacity printer for students was installed in the library. There is full WIFI coverage at the main campus with 140 access points (APs), with 35 APs in the dormitory and 15 APs at Üllő campus. Students can have access to Eduroam network through this WIFI.

UVMB provides a full Microsoft 365 licence to all employees and students. This licence contains all the Office applications for mobile and desktop, and they get an official university e-mail address that they can use with Microsoft Outlook. The main benefit of this licence is that the teachers and students can use modern and helpful software programs in their education work (e.g., OneNote, Microsoft Teams, OneDrive cloud storage). The 13 large university lecture halls were designed to be able to provide hybrid education by giving lectures with personal attendance and live stream at the same time. A three-dimensional projection system for live streaming is installed in the Anatomy lecture hall to project and share anatomy subjects with the students during teaching. This system gives a new perspective for demonstration and makes the subject of veterinary anatomy more 'visible' and understandable. Students not attending in person have live online access to the lectures, and all the lectures are recorded and can be viewed later by the students in the university e-learning system. The online journals and databases provided by the library are accessible from outside the campus via VPN service. Access is given to students and employees upon prior registration. UVMB has 4 computer labs with 85 PCs available and in the exam period another 180 e-exam laptops are available in 3 lecture halls to facilitate digital examination.

UVMB employees and students have a university e-mail address, and students also have a Neptun ID, which enables the use of the information network of the university (Moodle, MS Teams, etc.).

**Standard 6.3: The VEE must provide students with unimpeded access to learning resources, internet and internal study resources, and equipment for the development of procedural skills (e.g., models). The use of these resources must be aligned with the pedagogical environment and learning outcomes within the programme and have mechanisms in place to evaluate the teaching value of changes in learning resources.**

At the end of 2022, the collection of the library consisted of 66,072 documents (e.g., books, booklets) and more than 30,000 periodicals. At present, almost 5,000 current electronic journals and 42,000 e-books provide access to the latest scientific results. Approximately 15% of the available materials are from the field of veterinary medicine or from other related fields. Data of the library are presented in Appendix 6.1.

UVMB records the students' study data in the Neptun system. In this system, the student can be informed about his/her results at the subject level as well as at the level of the overall study and keep in touch with the teachers or vice versa. In the last three academic years, UVMB has increased the number and availability of digital platforms. There are three digital interfaces available: Moodle, Unipoll (part of Neptun) and Teams (part of MS Office), plus the intranet site of UVMB through which the students can get access to educational materials, such as lecture notes, digital textbooks, recorded and streamed lectures, e-learning materials, and exams. The primary, most used platform is Moodle, through which students can complete self-learning. On this service, it is possible to store and share online documents, and teachers also can share assessments with the student. The MS Teams service is mainly used to record and stream theoretical lectures. The recorded lectures are available to students at any time on video via a cloud service. The Neptun Unipoll service is one of the most suitable platforms for administering testing and exams. Both Moodle and Neptun Unipoll make the self-learning process possible by allowing practice of the learning materials to be mastered and answering follow-up questions. With these services, it is also possible to check student knowledge and evaluate it. Using the above platforms, UVMB also allows students to study clinical cases retrospectively through case studies. Students can access all imaging recordings through UVMB's internal network. During the pandemic, the case centre service (3D Histech) was introduced, to make online histology education possible. This service is available to students, and they can study the learning materials on their own. In order to ensure the proper self-learning of students, UVMB has made a significant investment in IT, thus allowing services like the recording of lectures and their availability online.

The SASL is located in Nádaskay Hall at the main campus. The ESL as well as the FASL activity is located at the field station in Üllő. In order to fulfil and maximise the education capacity of the labs, there are 3 types of activities. (1) Scheduled clinical dry labs of the Small Animal, Equine or Food Animal Medicine subjects requiring and practicing manual skills are organised and held at the Skills Labs supervised by the concerned faculty member. (2) Thematic manual workshops advertised among the students are also held at the SASL organised by the Skills Lab Director working with her team of student demonstrators. These sorts of Skills Lab workshops are also supervised by a faculty member who is specialised in the concerned field. (3) The rest of the time available for the students is timetabled in the framework of an appointment system when students can use the manual facilities of the lab under supervision by the demonstrator team (see also Standard 4.2.).

## **Comments on Area 6**

Thanks to the previously invested IT technology UVMB could continuously work during the COVID-19 lockdown. The pandemic gave an impetus to the fast development of IT infrastructure of UVMB.

UVMB has largely developed its informatic and digital infrastructure which made it possible to record all the lectures and most of the practical trainings. Students can watch (and listen) to the recorded materials until the end of the exam period to get better prepared for their exams.

The number of laptops was enhanced, and it significantly increased the available seats for the written exams in the exam period.

## **Suggestions for improvement in Area 6**

Further development and integration of the use of the Skills Labs are planned.





## *Area 7.*

**Student admission,  
progression and welfare**

## Area 7. Student admission, progression and welfare

**Standard 7.1: The VEE must consistently apply pre-defined and published regulations covering all phases of the student “life cycle”, e.g., student admission, progression and certification.**

**In relation to enrolment, the VEE must provide accurate and complete information regarding all aspects of the educational programme in all advertisings for prospective national and international students.**

**Formal cooperations with other VEEs must also be clearly advertised.**

All aspects of the academic lives of students are regulated by Rules of the Admission Procedure (RAP), Study and Examination Rules (STER) and the document of outcome competencies, they are available on the homepage. UVMB uses multiple channels to inform prospective students about the pre-defined expectations by outlining these complex regulations. All necessary data are available on the website in three languages (<https://univet.hu/en/education/admission/>), and open days are regularly organised at UVMB, but guided tours can also be requested. At these events the veterinary profession, carrier-options, courses, and admission requirements are introduced, as well as specific questions addressed. UVMB involved in higher education fairs, and social media, and staff members arrange visits to secondary schools. A student-friendly selection of the relevant information about the admission is also available online at the following link: <https://www.vethungary.com/>.

Preparatory courses in Hungarian and English (<https://univet.hu/en/education/admission/online-preparatory-program/>) are offered to our prospective students. These are designed to give the necessary professional knowledge for a successful entrance examination as well as to prepare them for life as a university student. The main goal of UVMB is to find motivated, determined, focused students who can clearly see their life as a veterinarian and are up for the challenge that awaits them at the veterinary school and in veterinary profession.

To reach the best-possible prospective students, UVMB also has a contract with a recruitment company that is directly in touch with the VRIA. The recruitment company sends us yearly feedback and there is a continuous bidirectional information exchange to find the best applicants.

In order to facilitate enrolment of first-year students and the start of the semester all necessary information can be found on the website of the SD (<https://univet.hu/en/education/students-secretariat/first-steps-of-our-freshmen/>). Besides having all information available online, the students receive a printed Students' Guide that contains all must-have information on their academic life.

**Standard 7.2: The number of students admitted must be consistent with the resources available at the VEE for staff, buildings, equipment, healthy and diseased animals, and materials of animal origin.**

Table 7.2.1. Number of new veterinary students admitted by the VEE

Type of students	2022/2023	2021/2022	2020/2021	Mean
Standard students	116	118	121	118
Full fee students	297	292	245	278
Total	413	410	366	396

Table 7.2.2. Number of veterinary undergraduate students registered at the VEE

<i>Year of programme</i>	<i>2022/2023</i>	<i>2021/2022</i>	<i>2020/2021</i>	<i>Mean</i>
<i>First year</i>	380	373,5	326,5	360
<i>Second year</i>	338,5	293	358,5	330
<i>Third year</i>	204	304,5	297	268.5
<i>Fourth year</i>	287,5	278	249,5	271.7
<i>Fifth year</i>	279,5	250	210	246.5
<i>Sixth year</i>	110,5	104,5	118	111
<i>Total</i>	1600	1603,5	1559,5	1587,7

Table 7.2.3. Number of veterinary students graduating annually

<i>Type of students</i>	<i>2022/2023</i>	<i>2021/2022</i>	<i>2020/2021</i>	<i>Mean</i>
<i>Standard students</i>	79	104	109	97
<i>Full fee students</i>	142	109	121	124
<i>Total</i>	221	213	230	221

Table 7.2.4. Average duration of veterinary studies

<i>Duration</i>	<i>% of the students who graduated on 2023/2022*</i>
<i>+ 0**</i>	79.2%
<i>+ 1 year</i>	16.7%
<i>+ 2 years</i>	3.2%
<i>+ 3 years or more</i>	0.9%

\*\* The total duration of the studies matches the minimum number of years of the programme (e.g., 5 or 6 years)

Table 7.2.5. Number of postgraduate students registered at the VEE

<i>Programmes</i>	<i>2022/2023</i>	<i>2021/2022</i>	<i>2020/2021</i>	<i>Mean</i>
<i>Interns</i>	9	9	9	9
<i>Residents</i>	4	2	1	2
<i>PhD students</i>	87	73	71	77
<i>Others (specify)</i>	0	0	0	0

**Standard 7.3: The selection and progression criteria must be clearly defined, consistent, and defensible, be free of discrimination or bias, and take into account of the fact that students are admitted with a view to their entry to the veterinary profession in due course. The VEE must regularly review and reflect on the selection processes to ensure they are appropriate for students to complete the programme successfully. If the selection processes are decided by another authority, the latter must regularly receive feedback from the VEE.**

**Adequate training (including periodic refresher training) must be provided for those involved in the selection process to ensure applicants are evaluated fairly and consistently.**

UVMB seeks Hungarian and international applicants with appropriate academic qualifications, and strong motivation to study and practice veterinary medicine. There is an entrance examination that students need to pass in order to be admitted. The entrance examination aims to test competencies in relation to the academic subjects (Biology and Chemistry). The RAP at UVMB is based on national

legislations on higher education.

Students coming from Hungarian secondary education must apply through the national application system, and the entrance examination is organised by the national Office of Education (advanced level graduation exam in chemistry and biology is necessary). The institutional processes of the admission procedure are supervised and coordinated by SD under the direction of the VRSA. The applicant can file an official statement of claim to the national Office of Education against the decision.

The Marek József Scholarship program was introduced for Hungarian students with a focus on the food producing animals in 2021. If the student is admitted to the fee-paying status, he/she can apply for the Marek József Scholarship provided by the MJF. Information about the application, requirements, and call for applications can be found on the homepage. The application criteria are the same as regular applicants, but students supported by the Marek József Scholarship must make a commitment that they will work in the field of food producing animals, food safety and quality, or veterinary administration at least for 10 years after graduation.

International students can directly apply to UVMB, and the admission procedure is also regulated by our RAP and supervised by UVMB under the coordination of the Admission Board (AB). During the admission process we examine whether the pre-qualification of a foreign student is adequate for the Hungarian education system and if they are expected to be able to graduate from our university. In the case of the English class the admission exam consists of a written and an oral part. The written part of the entrance examination is a computerised test in chemistry, biology, and English, which is automatically evaluated, and the results can be revised manually if necessary. The oral part is either in-person or carried out using the MS Teams system. The examiner is always a UVMB teacher who has finished a multi-step one-on-one tutorial with the VRIA or with a senior examiner. At the end of the tutorial, the newly appointed examiner will carry out several entrance exams with supervision, and even after that their performance is monitored by checking the video recordings (if available). Predetermined criteria are always used at the oral exams to make sure that the applicant has adequate professional knowledge in biology and chemistry, can express his/her knowledge coherently, has English language skills and motivation, and whether his/her previous studies are sufficient to join our curriculum. The oral examinations are recorded, and the members of the AB jointly decide on the student's admission, considering the written and oral results, while also paying special attention to the evaluation of the documents submitted by the applying students.

In the case of the German class, the system is like in Germany. Admission to our German course is based on the applicant's high school graduation results, where special attention is paid to professional subjects (biology, chemistry) and the high school graduation average. If the student's readiness cannot be judged in this way, he/she will be placed in the admission system developed for English-speaking students.

As the admission is organised at the level of the VRIA, appeals can be sent directly to the rector of UVMB, who reviews (alone or in a committee) the admission process of the students in question.

All prospective students can apply to UVMB to avoid any form of discrimination. However, the applicants must have a medical certificate on their suitability and fitness for the purpose of applying to the veterinary studies. In case of the Hungarian applicants the certificate is issued by occupational health specialists, while international students can download a blank certificate sample that can be filled by any medical professional in their country. The inconclusive certificates are discussed and evaluated by the AB on an individual basis.

The application criteria are shown on our website and in our official brochure (online and printed): <https://univet.hu/en/education/admission/application-and-admission-requirements/>

Following the admission process, the students will receive their result via e-mail. In case of successful application, the e-mail contains some useful information about the next steps to help the students in their transition. In case of unsuccessful application, the main reasons for this are included in the e-mail (e.g., insufficient knowledge in any of the subjects).

The number of admitted students is revised yearly based on the feedback of our students, teachers and clinicians and finalised by the Senate. The main factors are the capacity of our teaching hospitals and the predicted number of the drop-out students. The numbers are set around 160 Hungarian, 140 English speaking and 120 German speaking students (the latter is of lesser importance as our German curriculum covers only the basic subjects in the first two years). No major change can be expected in the number of new students admitted by UVMB in the next years.

**Standard 7.4: There must be clear policies and procedures on how applicants with disabilities or illnesses are considered and, if appropriate, accommodated in the programme, taking into account the requirement that all students must be capable of meeting the ESEVT Day One Competences by the time they graduate.**

The number of students with disabilities is very small at UVMB but constantly increasing, most of whom have psychological developmental and learning disorders (typically dyslexia, dysgraphia, and dyscalculia). All support required by law is guaranteed, and UVMB also has a committee to help students with special needs that determines the range of support and discounts based on the student's request.

Several learning support services have been introduced for students with disabilities, such as the demonstrator system, a mental health program, and assistance provided in everyday administration and communication is listed in the STER.

For students with disabilities, upon request, UVMB may set requirements that are partially different from the curriculum and/or exam requirements based on the findings of the expert opinion confirming the disability. The major options to help these students are

- providing individual consultation opportunities,
- providing at least 30% longer preparation time before exams,
- providing at least 30% longer time for exams with extra breaks if needed,
- providing a written exam instead of an oral exam, and vice versa,
- providing extra exam opportunities separated from other students,
- describing or repeating the questions several times, breaking down complex questions into sub-units, help to clarify expectations and questions,
- providing a personal assistant for institutional administration.

Furthermore, new elective subjects concerning education methodology were to develop their life skills (Learning Strategies and Techniques in Medical Training, Life Skills for Veterinarians).

**Standard 7.5: The basis for decisions on progression (including academic progression and professional fitness to practise) must be explicit and readily available to the students. The VEE must provide evidence that it has mechanisms in place to identify and provide remediation and appropriate support (including termination) for students who are not performing adequately.**

**The VEE must have mechanisms in place to monitor attrition and progression and be able to respond and amend admission selection criteria (if permitted by national or university law) and student support if required.**

The expected progress of students is regulated by the STER. This information is also available on our website, clearly communicated by the colleagues of the SD, and in our peer-mentoring program (SAM-buddy). The integration of first-year students is aided by numerous programs organized by SC. Thus, the Freshman Meeting is organised for the admitted students, followed by the Freshman Camp at the beginning of September, and the Freshman Week in the first week of the semester. During these programs, the senior students – with the cooperation of the instructors – try to pass on as much

information necessary for successful years as possible, via varied programs and meaningful lectures. Foreign students' integration is also helped by the staff of the SD by maintaining constant contact, organising various team building and leisure programs from the moment they enrol (freshers' week, then 3-4 programs per semester). A "Freshmen-package" is always prepared to facilitate the start of the academic year (in print and online).

In the veterinary curriculum, the individual subjects are typically built on each other, and students can sign up for a given subject in electronic study management system only if its prerequisites have been met. It is possible to take two repeat exams for each subject in the given exam period, and if the subject is not passed, the student can enrol it one more time, and he/she also has three exam opportunities in that semester. Our electronic study management system (Neptun) provides all the study and financial administration, registration, and information system of educational and educational-organisational tasks.

In the international study programs the pre-requisite system works the same way, but due to the different qualifications of the students, students can sign up the given subject without fulfilling the pre-study requirements, but they have the opportunity to take the exam only after passing the exams of the subject(s) considered as a pre-study requirement. However, since the individual curriculum units are built on each other, we had to introduce a so-called "firewall system": without successful completion of all the compulsory subjects of the first 4 semesters (preclinical subjects), as well as the subjects of the 5<sup>th</sup>-8<sup>th</sup> semesters, students cannot continue to the 5<sup>th</sup> and 9<sup>th</sup> semesters, respectively. Furthermore, the 11<sup>th</sup> (practical) semester can only be started after successful completion of all compulsory subjects of the 9<sup>th</sup> and 10<sup>th</sup> semesters. Students stopped by any of these firewalls are provided with an extra inactive academic year with extra exam opportunities to work out their missing obligations. To accommodate all these personal and professional challenges requires a huge effort from the international students, therefore before the first firewall, UVMB offers an extra exam period, in which the 2<sup>nd</sup> year and inactive students get 2 extra chances to successfully finish all subjects required to pass the first firewall.

Besides these major milestones of the curriculum, we encourage students to follow their weekly progress by using our e-learning system, which contains all the necessary study materials. Here, the students can indicate if they have finished smaller chapters/exercises, and this is summarised visually as a progress bar. Also, students must attend practical training in person, where the tutor of the group follows the academic progress of the attendees and guides their academic progress towards successfully finishing the given subject.

The outcome competencies are monitored by a computer program (CBlue; univet.cbluesoftware.com), which is primarily used for curriculum mapping by the EC and the VRSA. These competencies are comprehensively tested in the final exam. The examination system has been significantly reorganised in the veterinary studies, and the previous subject-specific final exam (Epidemiology, infectious diseases, Food Hygiene, Veterinary Administration) has been replaced with a complex final exam. The purpose of this is to comprehensively assess the output competencies and general veterinary awareness of future veterinarians. In the final exam, based on the complex oral exam, the committee evaluates the student's professional knowledge and ability to apply it, as well as the achievement of the competencies specified in the training and output requirements.

Assessment of the Chair's Opinions at every final exam gives us useful input about the strengths/deficiencies of the curriculum and individual subjects. The results are used as feedback for the institutes/departments and the conclusions are presented on the EC meeting, through which the responsible teachers of affected subjects and the head of departments can improve the subject regulations and requirements.

UVMB continuously monitors drop-out data to support our students with the most effective measures, to motivate the teaching staff, and to improve the courses, especially regarding foreign language courses. The first level of data analysis is conducted by the SD which produces aggregated data queries based on the data stored in the electronic study management system, which can serve as a basis for the next phase of data analysis. UVMB also organises exit interviews to further specify the

main causes of drop out. The results are discussed and evaluated within the EC. After analysis action plans are constructed and executed by the Senate. Due to their diverse educational backgrounds, the foreign students show a higher rate of attrition, therefore most of the changes are designed with a focus on the international students, though they positively affect the Hungarian classes, as well. Some of the recent changes at UVMB, include the improvement of mental health counselling (as a support service), as well as numerous thematically initiated group sessions for students, and a pedagogical workshop to develop the openness and sensitivity of the instructors.

The admission criteria, procedure and the number of the Hungarian state-funded students are defined by MIT, while that of fee-paying students are decided by UVMB. After discussions within the EC and the AB the final decision is made by the Senate. The details are described in Standard 7.3.

**Standard 7.6: Mechanisms for the exclusion of students from the programme for any reason must be explicit.**

**The VEE's policies for managing appeals against decisions, including admissions, academic and progression decisions and exclusion, must be transparent and publicly available.**

The specific reasons for student exclusion are explicitly listed in our STER. In this case the exclusion is automatic:

- if the student was accepted by another higher education institution,
- if the student announces that he/she is terminating his/her studentship,
- if the student cannot continue his/her studies as a state-funded students and does not wish to continue as a fee-paying one,
- if the student has become medically unfit to continue his/her studies,
- due to payment arrears (following the unsuccessful negotiation with the student),
- due to disciplinary decision,
- if student does not fulfil his/her obligations related to progress in his/her studies as indicated in the STER,
- if student did not register for the next academic semester for the third time in a row,
- if the student has completed less than 60 credits after the four active semesters following enrolment,
- if the combined credit index of the first four active semesters is less than 2.00,
- if the student failed to pass the exam during the second course admission,
- exam retakes in the same subject reaches five,
- if the student cannot pass all subjects at any of the firewalls in this/her extra academic year,

The legal appeal of students is regulated by the STER. The student may take legal action against UVMB's decision or action within fifteen days of the communication. In practice, students can submit their application through the Neptun study system or via e-mails. Institutional appeals are conducted by the Student Appeals Committee.

**Standard 7.7: Provisions must be made by the VEE to support the physical, emotional and welfare needs of students. This includes, but is not limited to, learning support and counselling services, career advice, and fair and transparent mechanisms for dealing with student illness, impairment and disability during the programme. This shall include provision of reasonable adjustments for disabled students, consistent with all relevant equality and/or human rights legislation.**

**There must be effective mechanisms for resolution of student grievances (e.g. interpersonal conflict or harassment).**

Due to the compact size of UVMB, informal information transfer is very efficient. It is primarily carried out by the staff of the SD, where the administrators handle the students' affairs, they provide all necessary front and back-office services. UVMB hires a coordinator for the electronic study management system (Neptun), who can be reached by the students directly and through the SD. Furthermore, the SC, teacher-student, and student-student interactions (class representative students) are also significant factors besides the more formal and classical ways of guidance.

Since the fall of 2014, confidential and free counselling for students has been provided in Hungarian and English. Counselling is a support service where students can attend individual and group sessions, as well as workshops (i.e., re-integration of inactive students). The counselling service also covers a Study-Buddy-Finder (a web interface) whereby entering basic parameters students are helped to find a study group or study partner ([www.studygroups.hu](http://www.studygroups.hu)). A peer mentoring system (SAM-Buddy) has been introduced to support the integration and academic progress of students. The SAM-Buddy program is for recently admitted students (primarily from abroad) to receive support during the critical initial period by involving an upper-year student partner with similar experiences, thus reducing the uncertainty of acclimatisation, as well as helping to develop a new lifestyle that is well-adjusted to the intense academic pace of medical training. In the process, it offers participants (both mentor and mentee) an experiential experience, strengthens practical self-awareness, and encourage independence (psychological self-care). In addition to individual counselling and mentoring, UVMB helps to decide the students' actual professional commitment in the first or second year by introducing Veterinary Profession and Nursing Practice to the curriculum. Furthermore, students can choose from several elective and optional subjects, which help the development of learning methods, communication, stress management, and other life-skills (Learning Techniques, Physiology of Learning, Life Skills for Veterinarians, Self-awareness and Self-management training, Basics of Communication, Workplace Stress Management in Practice).

UVMB has active community and vibrant student life. In addition to the long-standing events (Equus days, Marek days, Freshmen's ball), at the beginning of each academic year since 2016, a joint student-staff ox barbeque and picnic takes place on the central campus, and we also organise events every year in June for students and staff at our campus at Üllő. UVMB provides the students with extensive student mobility opportunities, primarily within the framework of the Erasmus, Erasmus+ and CEEPUS programs, as well as the bilateral relations of UVMB.

The Veterinary Medicine Job Fair has been a tradition for several years and offers our students excellent opportunities to get to know their future employers directly. On the web pages of these events, we can also upload available job offers for new graduates (<https://univet.hu/en/job-fair-2023/>). Physical education is an obligatory subject at UVMB, so veterinary students are required to attend physical education classes for five semesters. In addition, the Department of Physical Education ensures the physical conditions of leisure sports activities and helps the sports association of UVMB in organising various training opportunities for both students and employees. A sport hall is available on campus for playing ball games. In addition, the sports centre has a smaller room of 90 square meters and a mirrored room of a similar size. They are open from 8 a.m. until evening, and, if there are no organised activities in the premises, they can be used freely and free of charge.

UVMB has an appointed a students' well-being coordinator and a harassment officer to initiate the official response to complaints. The process for resolution of any grievances is explained in detail in Standard 7.8. Shortly, the problem is handled by the vice rectors on an individual basis. In serious cases, they can initiate a session with the Student Disciplinary Committee, or any other committees they see fit.

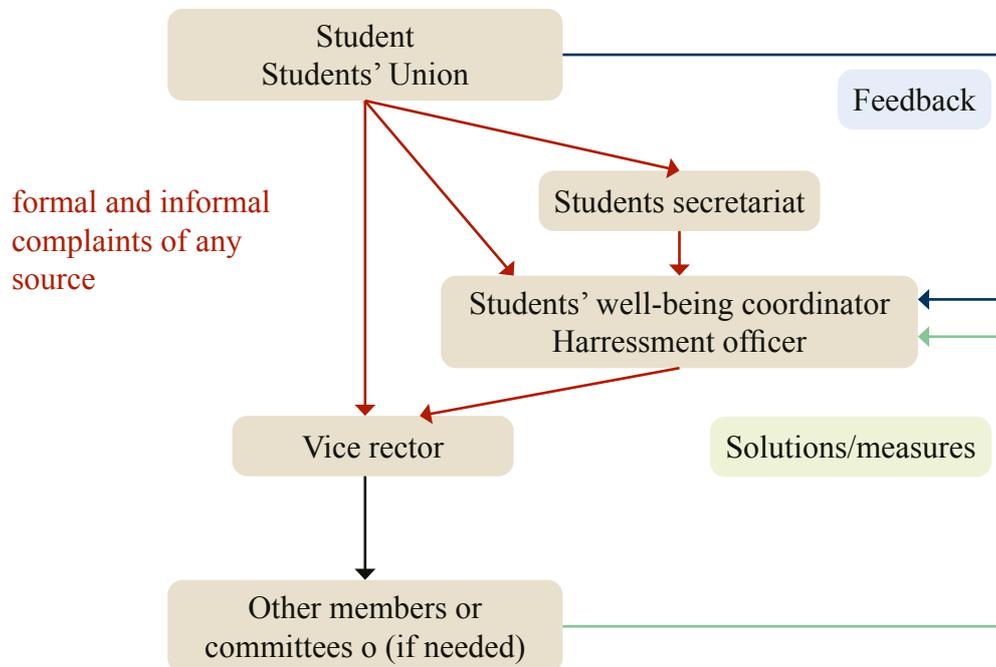
**Standard 7.8: Mechanisms must be in place by which students can convey their needs and wants to the VEE. The VEE must provide students with a mechanism, anonymously if they wish, to offer suggestions, comments and complaints regarding compliance of the VEE with national and international legislation and the ESEVT Standards.**

Complaints and comments can reach UVMB several ways: we have an appointed Students' well-being coordinator at the SD and a harassment officer (academic staff) for individual complaints, but the SC and class representatives also present collective complaints and feedback yearly. There is a suggestion box for written complaints and ideas, and online student evaluations of teachers. Furthermore, UVMB conducts regular annual satisfaction surveys based on anonymous participation, as part of which we ask about the experiences and impressions of students regarding discrimination. Summaries and internal reports are prepared on the surveys, which are presented at the vice rector level.

Besides these official ways, there is a student initiative (<https://www.facebook.com/UnivetConfessions>), and even it was not meant to send feedback to the university, it provides a useful informal way of knowing general complaint of the students.

Complaints are handled by the VRSA on an individual basis by involving any other member or committee of the university as he sees fit. Finally, we provide feedback to the complainant or to the students about the necessary measures taken (Fig. 16).

Fig. 16. Complains and comments of students



To better convey the most pressing needs of the students, there is student representation in the Senate and in most of the committees of UVMB.

## **Comments on Area 7**

One of the main responsibilities of any of the universities is to provide a safe and supportive environment for students, where they can fulfil their academic potential. UVMB is constantly develops its services to provide the best-possible protection for the students both physically (i.e., closed campuses), psychologically, and mentally. The main goal is to maintain a flexible and transparent system that can handle all emerging and re-emerging problems. Thanks to the small size of UVMB and the close connections between students and staff members the majority of the problems are discussed personally in an informal way, and thus solved easily.

New challenges came with the recent refurbishment of the old buildings. Even if the construction area is surrounded by fences, minor conflicts could occur between the workers, students, and staff. So far, these were handled quite effectively, as students are encouraged to report even the smallest inconveniences immediately, so we can keep things on the right track.

## **Suggestions for improvement in Area 7**

To improve student performance and develop their knowledge, as well as to optimise its own teaching capacities, UVMB is interested in notifying low-performing students of their partial results, as well as the support options that can help them improve their academic situation. The introduction of the alternative (intermediate) student partial performance notification system in the foreign and Hungarian veterinary education is recommended primarily in the critical first and second years with uniform automation of feedback for all years.

We plan to introduce an automated targeted signalling system, which uses an e-mail-based mechanism to inform students on their progress, especially when they seem to get to a danger zone. This reminder notifies the students to ask for help, offers possible solutions, and guides the students.



*Area 8.*

**Student assessment**

## Area 8. Student assessment

**Standard 8.1: The VEE must ensure that there is a clearly identified structure within the VEE showing lines of responsibility for the assessment strategy to ensure coherence of the overall assessment regime and to allow the demonstration of progressive development across the programme towards entry-level competence.**

The objective of the veterinary training is that the graduates must get the necessary knowledge and skills for veterinary work, so they must gain D1C. As stated in the STER, the learning objectives of the curriculum aim at giving solid theoretical and practical knowledge enabling the graduates to successfully work as a veterinarian. The focus of UVMB's assessment strategy is the evaluation of achievement of these learning outcomes. Different student-focused assessment methods are applied to reach this aim. The assessment strategy is in close connection with the teaching strategy, and they are continuously evaluated together.

Several assessment methods are used in the case of the different subjects, and the general principle is that the assessment methods have to support students in the learning process, they have to motivate them, and they must serve as feedback both to students and the subject leader. According to the assessment strategy of UVMB the points of assessment are not regarded as endpoints but benchmarks of the learning process. Achieving the components of the D1C is evaluated in competence-based summative and formative examinations.

There are two retakes of an exam in the actual exam period. If the student fails, three other retakes are allowed in the next exam period. The students cannot transfer any missed opportunities to the next exam period. Altogether 5 retakes of an exam are allowed.

Theoretical knowledge is assessed both in formative and summative examinations. Several midterm tests are held (Anatomy, Biochemistry, Physiology, Pharmacology, Parasitology, clinical subjects, Infectious diseases etc.) in order to give students chance to judge their actual knowledge level and see their progression. Summative assessments, semester-exams, and comprehensive exams are held in the six-week-long examination periods without teaching after each semester. Semester-exams are about topics encompassing the whole term's work, while comprehensive examinations cover the content of the whole subject as taught for more than one semester. Exams can be written, or oral, or a combination. In the case of certain subjects, oral exams are preferred to written exams to develop the students' ability to verbalise their thoughts and improve their communication skills. The list of exam questions is available for students at least six weeks before the exam. The comprehensive examination is held in front of an exam committee consisting of at least two staff members and the final exams are also held by a committee of external examiners. In case of the second and/or third retake of a failed exam, students may request different examiner.

Preclinical practical skills are generally evaluated in formative assessments during the semester (activity in the classes, midterm achievements, completion of tasks etc.), however in the case of certain subjects, theoretical exams are combined with practical exams (Anatomy, Histology, Pathology, Pharmacology etc.). Achievement of pre-clinical practical skills are also recorded in the Logbook. The grade of the practical exams is included in the final grade of the subject.

After taking and passing midterms and semester-exams on the study material of the theoretical lectures, seminars, and practical training (labs), students must take comprehensive exams of all clinical subjects which include oral and written parts. Clinical exams consist of a theoretical (oral) and a practical part (on animals), involving one to three examiners at the clinics. Finally, students' diagnostic and therapeutic clinical skills are examined in the framework of an in-person clinical examination at the end of the 11<sup>th</sup> practical semester. There is also a formative assessment of clinical practical skills, documented in the Logbook.

Soft skills, especially communication skills, time and pressure management skills are regularly evaluated during the workshops and practical trainings, the oral and practical exams, and, at the end of the training, on the final exam, where the candidates have to defend their thesis by presenting the results of their work (presentation skills are assessed) and answering the complex questions of the committee (knowledge synthesis and problem-solving skills, criticism). The clinical rotation and the clinical work also give a place to assess soft skills. Furthermore, a communication course (15 hours) has become mandatory in the 5<sup>th</sup> year for all students, so they can acquire knowledge of the basic principles and the different practical ways of veterinary communication.

**Standard 8.2: The assessment tasks and grading criteria for each unit of study in the programme must be published, applied consistently, clearly identified and available to students in a timely manner well in advance of the assessment. Requirements to pass must be explicit.**

**The VEE must properly document the results of assessment and provide the students with timely feedback on their assessments.**

**Mechanisms for students to appeal against assessment outcomes must be explicit.**

The examination system is part of the curriculum and is decided by the same bodies as the curriculum (See Standard 3.1.). The regulation of the assessment system is described in the STER that is available in three languages on the homepage of UVMB ([https://univet.hu/wp-content/uploads/2023/07/ATE\\_HKR\\_3a\\_TVSZ\\_20221214-ENG\\_VKAKieg-2.pdf](https://univet.hu/wp-content/uploads/2023/07/ATE_HKR_3a_TVSZ_20221214-ENG_VKAKieg-2.pdf)). Its brief version is also published in the annual Students' Guides in printed and online form ([https://univet.hu/wp-content/uploads/2022/09/Students-Guide-2022\\_23.pdf](https://univet.hu/wp-content/uploads/2022/09/Students-Guide-2022_23.pdf)). The Students' Guide contain all relevant data regarding assessment in the actual academic year, it helps the students in planning and conducting their studies. The Students' Guide also contains need-to-know information on UVMB in general.

The criteria and the assessment procedures of each subject must be sent to the VRSA before starting the semester, and these data are uploaded to the Neptun system that is available for the students and to the CBlue software. The exam dates are also made public in Neptun and students can sign up there for exams.

In addition to the information available in the above sources, the subject leader is responsible for informing the students about the exam orally at the first session of the semester, the information is also sent to the class representative, uploaded to the homepage of the department, and in some cases placed in a printed form on the unit's notice board. In case of modifications the students are notified in e-mail through the Neptun system. The VRSA and the staff of the SD are responsible for the transparency of the assessment system, they regularly check it through the Neptun and CBlue.

Grading is described in the STER. Generally, a five-grade evaluation system is used, however a three-grade one is applied in some cases. According to the STER students are given an excellent (5) grade, if they have a thorough and comprehensive knowledge of the entire course material and if they can apply their knowledge independently and confidently (above 90%); they are given a good (4) grade, if they have a thorough knowledge of the entire course material and they can safely apply their knowledge (81-90%). Students are given a satisfactory (3) grade if they have a fair knowledge of the essential parts of the course material and they can adequately apply their knowledge (71-80%). Students are given a pass (2) grade if they have an acceptable knowledge of the essential parts of the course material and demonstrate an acceptable competence in applying their knowledge (61-70%) and they are given a fail (1) grade if they do not have the theoretical and practical knowledge needed for further academic progress. The subject-specific criteria and requirements of the grades are uploaded to the Neptun system.

The curriculum may also determine a three-grade evaluation scale (excellent, satisfactory and fail which is usually applied to the evaluation of practices.

The process of awarding grades depends on the form of assessment. In the case of certain subjects where the practical application of the knowledge and the evaluation of the aptitude to such application is necessary for achieving the training objective, a practical grade is given to students based on their work during the semester. The theoretical knowledge of one semester is assessed in semester-exams while comprehensive exams are for evaluation of knowledge comprising multiple semesters from the subjects that are fundamental in terms of the training objective. Practical examination can also be part of an exam. Generally, several components result in the final grade in the case of both formative and summative exams. They include practical work, midterm tests, assays, reports etc. during the semester, and practical examination, written and oral part of the theoretical exam. The different components are assessed by different teachers.

There are no barrier assessments in the curriculum, but most of the subjects can only be enrolled if students successfully completed the prerequisite subject(s).

Results of the oral, written, and practical exams shall be published in the Neptun system within two working days after the exam's day. The students can ask for a revision of the paper or lodge a complaint within three further days. The written exams can be viewed by the students and discussed at the departments. In the case of oral exams, the results are communicated immediately after the exams. The grades are entered into the academic record book and the Neptun system. Improvement of the grade is possible according to STER.

Complaints about examination procedures and grades are also regulated by the STER. Complaints concerning formal matters must be justified and forwarded in writing to the VRSA within the given exam period. If the complaint exposes formal legal flaws, the VRSA can decide to revoke the examination. The students can complain about the decision of the VRSA to the Student Appeals Committee.

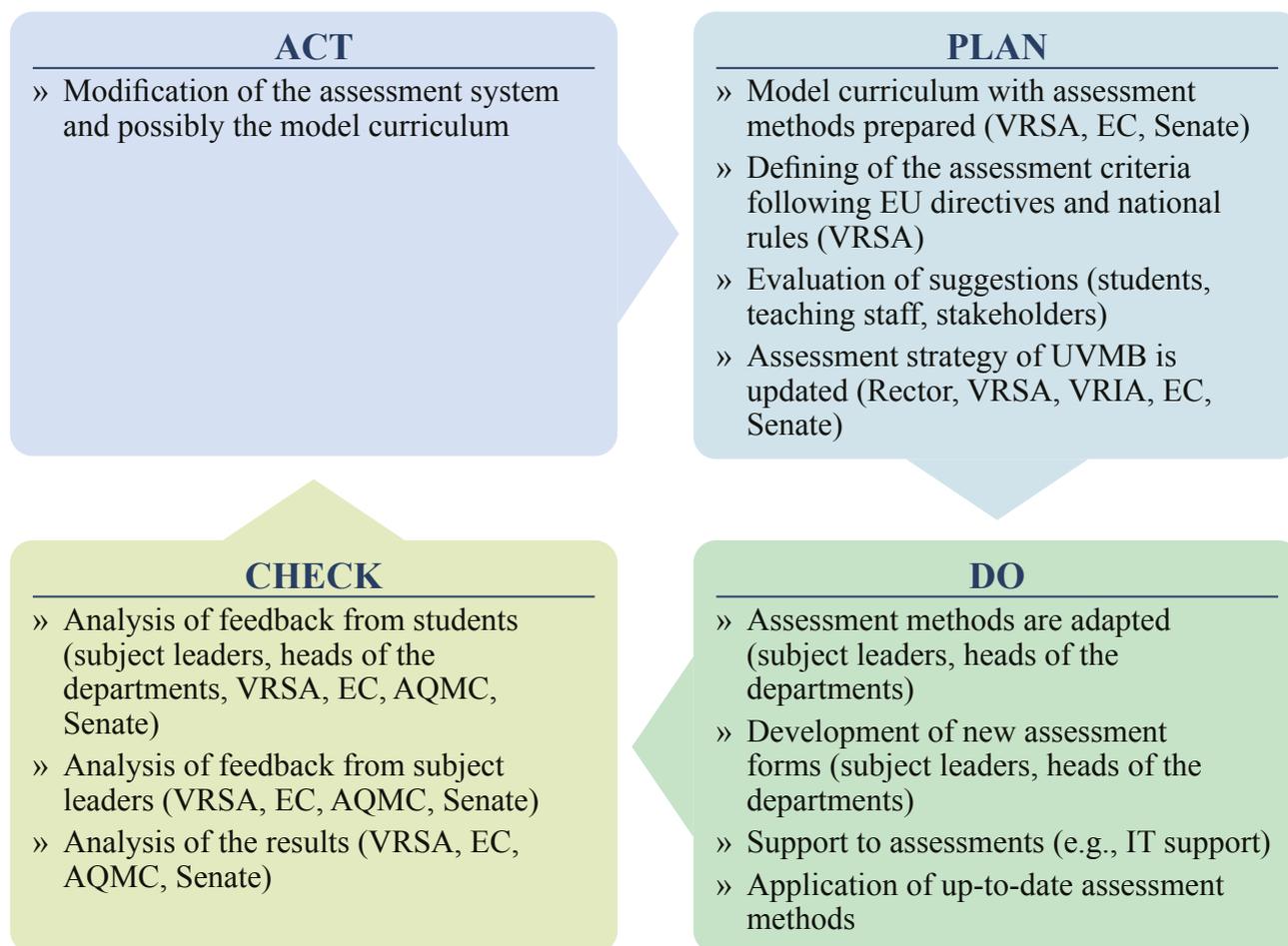
In certain cases, decisions on the evaluation of studies may also be appealed if the decision was not based on the requirements adopted by UVMB and/or if the decision was contrary to the ROO of UVMB or the STER.

**Standard 8.3: The VEE must have a process in place to review assessment outcomes to change assessment strategies and to ensure the accuracy of the procedures when required. Programme learning outcomes covering the full range of professional knowledge, skills, competences and attributes must form the basis for assessment design and underpin decisions on progression.**

The assessment system is closely connected to the curriculum, so it is decided and regularly evaluated by the same bodies as the curriculum (See Standard 3.1.). The general outline of the assessment system is planned by the VRSA and the EC on the basis of suggestions of the subject leaders and department heads and finally adopted by the Senate. The form of assessment in the case of the different subjects is the responsibility of the subject leader. The results of the assessment and recommendations regarding the assessment system are reported to the VRSA at the end of each semester indicating the planned changes. These experiences are evaluated by the EC, and results and conclusions are forwarded to the Senate.

Information on changes of the assessment strategy is communicated together with the modifications of the curriculum through the usual channels (homepage, minutes of the Senate, general assemblies, department meetings, e-mails, Univet Magazine etc.) (Fig. 17).

Fig. 17. The PDCA cycle of assessment strategy



The assessment system is designed to measure the achievement of intended learning outcomes and other program objectives, with special emphasis on D1C. For this reason, the different competence-based assessment methods focus on acquisition of research-based knowledge, skills, and professional attitude. This ensures that the graduates are well prepared to successfully start their career in any field of the veterinary profession. The CBlue curriculum mapping software and the Neptun system are used to follow-up the close link between the learning outcomes and the assessment system.

**Standard 8.4: Assessment strategies must allow the VEE to certify student achievement of learning objectives at the level of the programme and individual units of study.**

**The VEE must ensure that the programmes are delivered in a way that encourages students to take an active role in creating the learning process, and that the assessment of students reflects this approach.**

The curriculum is based on a prerequisite system. This means that students must pass certain examinations before they can start a specific subject. Knowledge of certain core subjects is a prerequisite of studying other core subjects. Instead of the subject prerequisite system, there is an exam prerequisite system in the English course when students can come to examination of core subjects, if they successfully passed the exam on the prerequisite subject(s) before (See Standard 3.1).

By completing a subject, the students acquire certain components of the D1C. The optimal way of gaining D1C is following the model curriculum. The procedure of acquisition of D1C can be seen in the CBlue program. Achievement of practical skills is also documented in the Logbook.

The progress of the students is demonstrated by the collection of credits. To remain on the course, students must collect at least 40 credit points during the first two active semesters and collect at least

120 credit points including the credit points of all the successfully completed obligatory subjects for the first four semesters of the model curriculum within a period of maximum six semesters. There is no way to enrol in curricular semester 5 and 9, or the 11<sup>th</sup> (practical) semester without having passed all requirements of semesters 1–4, 5–8 and 9-10, respectively.

Students are encouraged to play an active role in the learning process. Formative assessment at practical training, short tests, dissections, participation in experiments, hands-on clinical work, case discussions, short student presentations, competitive tests, case reports, and compulsory thesis-writing involve students in the learning process. The widespread use of electronic resources including recorded lectures, video demonstrations, lecture notes, study aids and special packages elaborated for practical work, and self-tests strengthen the students' responsibility for their own learning. Collections (anatomy, histology, pathology) of UVMB are freely available for students. By enrolling in elective and optional subjects, students can build up their own track to meet their interest.

**Standard 8.5: Methods of formative and summative assessment must be valid and reliable and comprise a variety of approaches. Direct assessment of clinical skills and Day One Competences (some of which may be on simulated patients), must form a significant component of the overall process of assessment. It must also include the quality control of the student logbooks in order to ensure that all clinical procedures, practical and hands-on training planned in the study programme have been fully completed by each individual student.**

Several methods are used to assess whether students have achieved D1C. The continuous evaluation of the curriculum using the CBlue and Neptun verifies that all D1C are achieved by the time of the graduation. The use of different examination forms, partially in combination, allows learning outcomes, theoretical and clinical skills, and D1C to be assessed according to the level of training received. All examinations are competence-based and students can sit for exams only after passing the prerequisite subjects. Meeting the preconditions of the exam (successful midterms, practical training, report etc.) certified by a final signature of the subject leader is needed before registering for an exam. Through small-group teaching, skills can be observed individually and feedback given directly to the individual (e.g. clinical studies). The aim of the introduction of Skills Labs is to introduce complex simulated scenarios that give context to the mannequins. For example: the management of acute hypovolemic shock, combining custom made vein models and computer simulation etc. The Logbook (competence list) was launched within the recent academic year from the 1<sup>st</sup> to the 11<sup>th</sup> semester. The tasks must be accomplished and verified by the concerned course leader by the end of the semesters or blocks. Students must arrive at the 11<sup>th</sup> semester block exams with the Logbook containing the verified tasks of the given subject. Furthermore, having the fully completed Logbook is the prerequisite to enter the final exam.

## Comments on Area 8

The impact of competence-based formative examinations has been continuously growing in the recent years.

The traditional teaching system (lecture and practical) is loosening up and over the past two decades substantial changes have occurred, but the old type still dominates with its advantages and drawbacks. In short, the advantage is a systematic build-up of knowledge and a continuous monitoring of progress by frequent examinations, while the disadvantage is the limited use of the large potential of students' creativity and contribution to their training. The large number of lexical requirements can cause some students to lose interest in further studies and in the problem-solving way of thinking.

Further measures are planned to improve self-learning and problem-solving methods in teaching and assessment. For this reason, teaching experiences of these methods have been collected from the

departments to analyse and share the best ones among the teaching staff of UVMB. The management has decided to reward teaching excellence based on the online system of Students' Feedback on Teachers and Subjects.

### **Suggestions for improvement in Area 8**

Improving communication skills by introduction of role play in situation exercises is planned. Further harmonisation of the subject-matters between the departments, parallel with reducing the number of lectures and increasing the tutorial and seminar work, is needed to improve the quality of education.

It is very important that teaching excellence should be adequately rewarded. Besides the research activities of teachers, another evaluation system is also needed in which teaching efforts are better appreciated.





*Area 9.*

**Academic and  
support staff**

## Area 9. Academic and support staff

**Standard 9.1: The VEE must ensure that all staff are appropriately qualified and prepared for their roles, in agreement with national and EU regulations and must apply fair and transparent processes for the recruitment and development of staff.**

**A formal training<sup>2</sup> (including good teaching and evaluation practices, learning and e-learning resources, biosecurity and QA procedures) must be in place for all staff<sup>1</sup> involved with teaching.**

**Most academic staff (calculated as FTE) involved in veterinary training must be veterinarians. It is expected that more than 2/3 of the instruction that the students receive, as determined by student teaching hours, is delivered by qualified veterinarians.**

Human resources form a focal point of the strategy of UVMB. Building employer brand, using effective recruitment, applying refined selection methods, retaining motivated staff members, competitive remuneration, continuous training of staff members, and special support to young academic staff members are the main components of this strategy.

A Human Resources Plan is prepared each year based on the strategic plan of UVMB and the needs of the units. It is approved by the Rector's Council (RC) and the Senate. The conditions, expectations, and the required competencies for employment in academic and research positions are laid out in the Higher Education Act. According to this Act the teaching staff is composed of three *de jure* different groups: academic staff, research staff and clinicians, however, their *de facto* participation in education work is not dependent on and is not reflected in the *de jure* status of a staff member. In practical terms, this means in most departments each teaching staff member has the same duties and must meet the same expectations in education. The Act forms the basis of the Regulation of Employment (RE) of UVMB. In addition to determining the requirements for filling a particular position, the RE also defines the relevant career advancement conditions. All teaching staff members of UVMB comply with the conditions for filling their position, regardless of the type of their employment contract (fixed-term, permanent, full-time, part-time). A total of 69% of the academic staff involved in veterinary training at UVMB are veterinarians.

Continuous professional development (research, publications, attending conferences, visits, international collaborations etc.) of the teaching staff is expected, and it is financially supported by UVMB and judged yearly according to the Performance Evaluation System. Outstanding performance is rewarded. A separate annual budget is available for each department to finance the participation of staff in conferences and further training. Another possibility is the use of individual grant funds for this purpose, the amount of which increases every year.

Support of development of the professionals is also a priority for UVMB. Teaching staff members are required to complete an e-learning on pedagogy (DIC, EGS, teaching, assessment methods, e-learning etc.) and quality assurance course with an exam every year. They pass the exam if their correct response rate is at least 80%. Measuring teaching excellence is based on the feedback of students.

In addition to the compulsory courses UVMB offers language courses and several optional workshops for the staff. All employees must also complete an occupational health, safety, biosafety, and fire protection course with an exam every year. Cardiopulmonary resuscitation and first aid courses are also available and are repeated each year. UVMB also regularly provides employees with IT training on various topics, which help them learn the new devices and software that will be introduced, as well as the more efficient use of the devices and software that are already in use (Fig. 18).

Upon the initiative of the head of the unit or the employee, if justified in terms of the organisation's more efficient work or the employee's further professional development, UVMB supports the employee's development within the framework of a study contract.

The following activities have been planned as part of the digital skills development of employees:

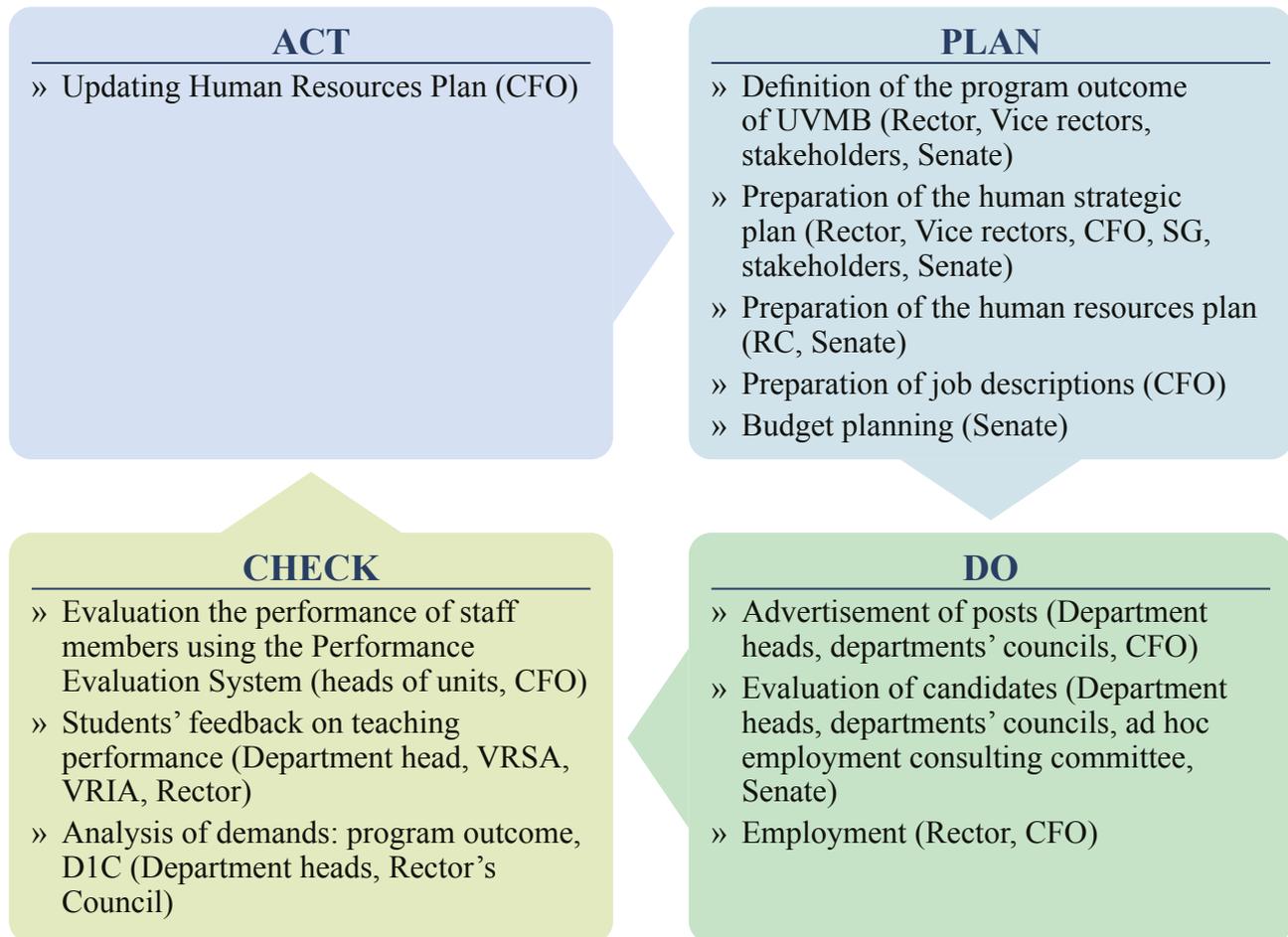
*Distance education (digital) and practical education for teaching staff:*

- Electronic learning environments, pedagogical training
- IT training (Neptune and Moodle)
- Digital skills development courses

Training of support staff

- IT training (Neptune and Moodle)
- Digital skills development

Fig. 18. PDCA in human resources management



**Standard 9.2: The total number, qualifications and skills of all staff involved with the programme, including teaching staff, 'adjunct' staff, technical, administrative and support staff, must be sufficient and appropriate to deliver the educational programme and fulfil the VEE's mission.**

**A procedure must be in place to assess if the staff involved with teaching display competence and effective teaching skills in all relevant aspects of the curriculum that they teach, regardless of whether they are full or part time, residents, interns or other postgraduate students, adjuncts or off-campus contracted teachers.**

Table 9.2.1. Academic staff\*\* of the veterinary programme

Type of contract	2022/2023	2021/2022	2020/2021	Mean
Permanent (FTE)	143.24	135.35	122.5	133.67
Temporary (FTE)	7.5	8.5	7.25	7.75
Interns (FTE)	4	3.5	3	3.50
Residents (FTE)	2	2	1	1.67
PhD students (FTE)	21.5	16.5	11.8	16.60
Practitioners (FTE)	11.5	12	13.5	12.33
Others (specify) (FTE)	0	0	0	0

\*\* All staff included in this table must have received a training to teach and to assess undergraduate students. Practitioners involved with EPT are not included in this table.

Table 9.2.2. Percentage (%) of veterinarians in academic staff

Type of contract	2022/2023	2021/2022	2020/2021	Mean
Permanent (FTE)	66.44	67.93	72.84	69.07
Temporary (FTE)	60	80	75	71.67

Table 9.2.3. Support staff of the veterinary programme

Type of contract	2022/2023	2021/2022	2020/2021	Mean
Permanent (FTE)	335.61	301.59	292.52	309.91
Temporary (FTE)	15.25	18.25	9.5	14.33
Total (FTE)	350.86	319.84	302.02	324.24

Table 9.2.4. Research staff of the VEE\*\*

Type of contract	2022/2023	2021/2022	2020/2021	Mean
Permanent (FTE)	39.25	41.75	37.25	39.5
Temporary (FTE)	3	1	3	2.33
Total (FTE)	42.25	42.75	40.25	41.75

\*\*Teaching and research staff are differentiated only *de jure*, their job is identical.

The total number of different categories of the academic and support staff meets the requirements of UVMB. It was increased by 17.2 % after becoming a foundation university, so no major changes can be expected in the near future regarding staffing, however the management and the Senate regularly analyses the state of human resources.

All posts, including new posts and staff promotions, are publicly advertised following the guidelines of RE. The objective requirements for filling each academic/research position are contained in the call for applications. After the submitted application is reviewed by the given department's council, the compliance of applicants with these conditions is evaluated through a personal interview by an *ad hoc* 3-member employment consulting committee of full professors entrusted by the Rector. After receiving supporting statements from the department and the consulting committee, the Rector may approve of employment or promotion. Applicants to academic, research, and higher administrative positions must also be supported by the Senate. Only habilitated persons can apply to senior academic positions. Teaching, presentation competencies and research activity are evaluated in the habilitation process.

There is a compulsory online pedagogical course for the whole teaching staff on teaching and assessment methods. In addition to the compulsory course, several workshops, courses, and conferences are organised at UVMB where teachers of UVMB can extend their pedagogical competences (See Standard 9.1.).

Posts for support staff are also publicly advertised. The head of the relevant unit determines the conditions, expectations, and required competencies for filling the position. The objective conditions and expectations for filling the position are listed in the call for job applications in such cases as well. During the selection process, the head of the unit, supported by the experts of the Human Resources, Wage and Labour Group (HR), verifies the professional compliance of the applicants and whether they have the necessary competencies for the job. The employee retention rate (beyond 1 year) has been 90.4% over the past years as a result of the selection process. Support staff members must also pass the occupational health, safety, biosafety, and fire protection course each year.

Conditions of outside work are described in the RE. Briefly, all outside work must be reported to the Rector, and it is permitted only in those cases when there is no conflict of interests.

**Standard 9.3: Staff must be given opportunities to develop and extend their teaching and assessment knowledge and must be encouraged to improve their skills. Opportunities for didactic and pedagogic training and specialisation must be available. The VEE must clearly define any systems of reward for teaching excellence in operation.**

**Academic positions must offer the security and benefits necessary to maintain stability, continuity, and competence of the academic staff. Academic staff must have a balanced workload of teaching, research and service depending on their role. They must have reasonable opportunities and resources for participation in scholarly activities.**

Most staff members employed as academic/researcher/instructors have permanent employment contracts (91.6% in total). The number of working hours allocated by academic and research staff to teaching and other (e.g., research) tasks is determined by legal regulations, and UVMB takes particular care to comply with them. The teaching workload per semester is individually registered. Contracts and job descriptions define the nature and distribution of the tasks of the staff between teaching, research, service, and administration. Internal policy determines the extent of their duties (min–max) and ensures balance. The length of the fixed-term contracts can vary from one to four years, and they can be converted to permanent contracts. All teaching staff members, disregarding their *de jure* position, participate in education, research, and service on the same level. Several part-time veterinarians are also involved in the extramural practical training. The head of department's primary task is to ensure the availability of suitably qualified and sufficient teaching staff. The management of UVMB – under the direction of the Rector – provides the financial resources to it.

UVMB has laid great emphasis on providing its academic, research and veterinarian employees with a competitive remuneration package and other bonuses related to the advancement of their professional careers to ensure their long-term retention. The stability and constant development of the academic and research staff also incentivises their involvement in other activities in addition to their core tasks. To achieve these goals, UVMB defined basic salary categories and bonus elements to promote the advancement of academic and research staff. The management of the academic area supports the involvement of academic/research staff in scientific projects, as evidenced by the institution's activity in tenders. The number of research projects is between 50 and 60 each year, so the academic staff has constant opportunities to gain experience in tendering and research. UVMB's management is committed to establishing research and business relations and supports employees' participation in professional events as well as their further training in scientific and support areas alike.

**Standard 9.4: The VEE must provide evidence that it utilises a well-defined, comprehensive and publicised programme for the professional growth and development of academic and support staff, including formal appraisal and informal mentoring procedures.**

**Staff must have the opportunity to contribute to the VEE's direction and decision-making processes.**

**Promotion criteria for academic and support staff must be clear and explicit. Promotions for teaching staff must recognise excellence in, and (if permitted by the national or university law) place equal emphasis on all aspects of teaching (including clinical teaching), research, service and other scholarly activities.**

UVMB encourages employees' participation in training programs that generate useful knowledge for the institution by granting study contracts and covering the expenses. In order to ensure the provision of future academic and research staff, UVMB also supports the PhD program of postgraduates who decide to work at UVMB. Academic staff members are encouraged to participate in veterinary specialisation (residency) programs, and they can attend postgraduate continuing education courses organised by UVMB partly free of charge. To evaluate employee performance and competencies, UVMB has developed a Performance Evaluation System. This enables unit heads, with the cooperation of the employee, to apply yearly pre-defined targets and methodologies to evaluate their recent performance. Considering the employee's opinion, his/her plans of personal development are set up. Based on the evaluation, professional training programs, competency development, and/or mentoring programs may be set for the employee. UVMB allocates a special budget for the implementation of such programs. This annual evaluation also allows the parties to review the results of the development projects implemented in the previous period.

The requirements for career advancement in academic and research positions are described in UVMB's RE. If the conditions are met, the affected persons may be promoted to a higher position through an application process, provided that they are qualified according to the preliminary assessment (See Standard 9.1). At present, support staff has no standardised career model, but if their professional skills are enhanced (e.g., they complete a professional course) and their unit head supports them, they can take on higher roles or even be transferred to a new position. In addition, UVMB also awards prizes and other forms of recognition laid out in the RE. Staff members are nominated for such recognition based on the proposals of their unit heads. The conditions for awarding the recognitions are determined by the RE. The Senate examines whether the relevant conditions are met, and the decision is made by the Rector based on the Senate's opinion. Awards and recognitions are presented in the ceremonial setting of a UVMB event. If a member of the UVMB's staff receives an external professional award or recognition, UVMB's community is informed accordingly via the intranet and/or a special letter from the Rector. The provisions of UVMB's Code of Conduct require unit heads to manage their respective organisations in a constructive manner with proper consideration for the opinions of their associates.

UVMB's organisational culture has been family-like and friendly for decades, as evidenced by the results of employee satisfaction surveys. If there is a need for personal support, staff members discuss their problems with the head of the unit, consult the Ethical committee or contact the Harassment Officer. UVMB provides occupational physical, health and mental health services. Problems of staff members with families and young children receive special attention of the management, and UVMB received the award of Family Friendly Institution two separate times. Disabled staff or staff members with chronic illness receive special help from HR. If necessary, adaptation of workplace to personal needs is carried out.

Both academic and support staff are involved in the decision-making processes at UVMB. All levels are represented in the Senate and in the different committees. In addition to formal participation, in

the process of an annual employee satisfaction survey staff members can provide feedback on the leaders and the decision-making processes. The General Assembly held in each semester is also an appropriate occasion to ask questions or take recommendations.

**Standard 9.5: A system for assessment of teaching staff must be in operation and must include student participation. Results must be available to those undertaking external reviews and commented upon in reports.**

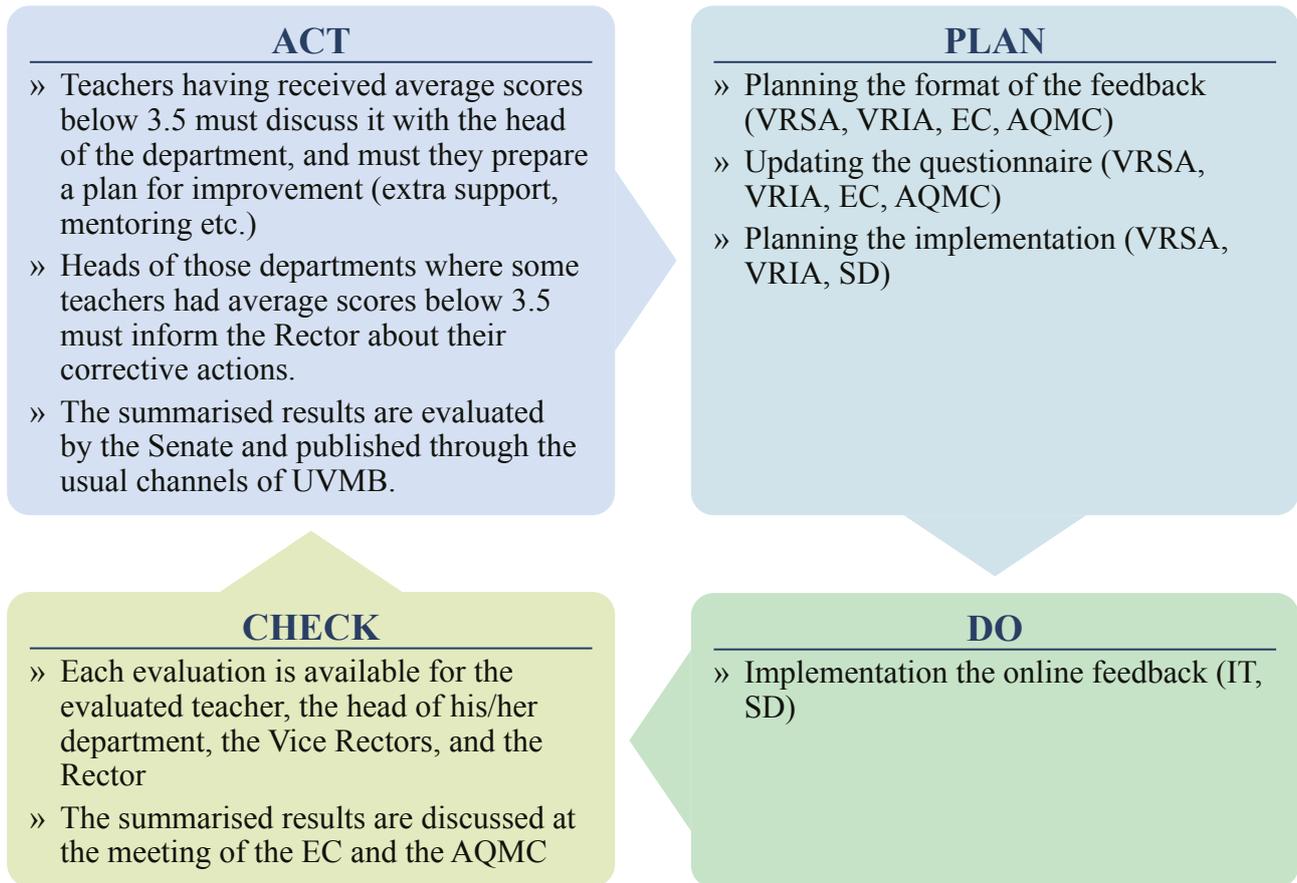
Students' Feedback on Teachers and Subjects (SFTS) started in the early 1980s at UVMB, and after several modifications an online evaluation system is used nowadays where each teacher, subject and department is evaluated by students at the end of the semester. This provides students with the opportunity to express their opinions and creates an opportunity to participate in the development of the training. It comprises the evaluation of didactics, lecturers, student preparedness, student workload, students' appreciation, and the relevance of what has been learned. The SFTS has predefined questions, students can give points from 1 to 5, where 1 is the worst and 5 is the best. Free text can also be added with critical comments and suggestions for teachers and departments. Students have to fill out the feedback on the previous semester before enrolling to the next one. Each teacher has access to his/her evaluation, and the results are available for the management of UVMB and the head of the department. The result of the review is an element of the annual performance evaluation system for teaching. If, in the case of an instructor, the average rating is below the minimum requirement set by UVMB (3.5 points), the head of the department will take documented measures to improve the quality of the training level related to the subject. Recognition of high-quality work can be initiated in the case of lecturers who consistently provide outstanding performance during at least 3 consecutive evaluations.

Based on student feedback, UVMB:

- Explores the areas to be developed from an educational point of view.
- Selects essential elements from the point of view of training efficiency.
- Provides information to managers for evaluating instructors, recognising excellent teaching work, evaluating promotions and job applications, evaluating the fulfilment of requirements, and exploiting training development opportunities.
- Allows instructors to get an idea of the effectiveness of their work, which can promote their individual development, and the improvement of their teaching methods.
- Provides data and information for the performance evaluation of teaching staff.

In addition to the general evaluation system there are several subjects which are evaluated at the end of the course. These evaluations are managed by the subject leaders, and they are used to development of teaching the subject in question. The procedure of SFTS is regulated by the ME-09 Quality Management Procedure (Fig. 19).

Fig. 19. PDCA cycle of the SFST

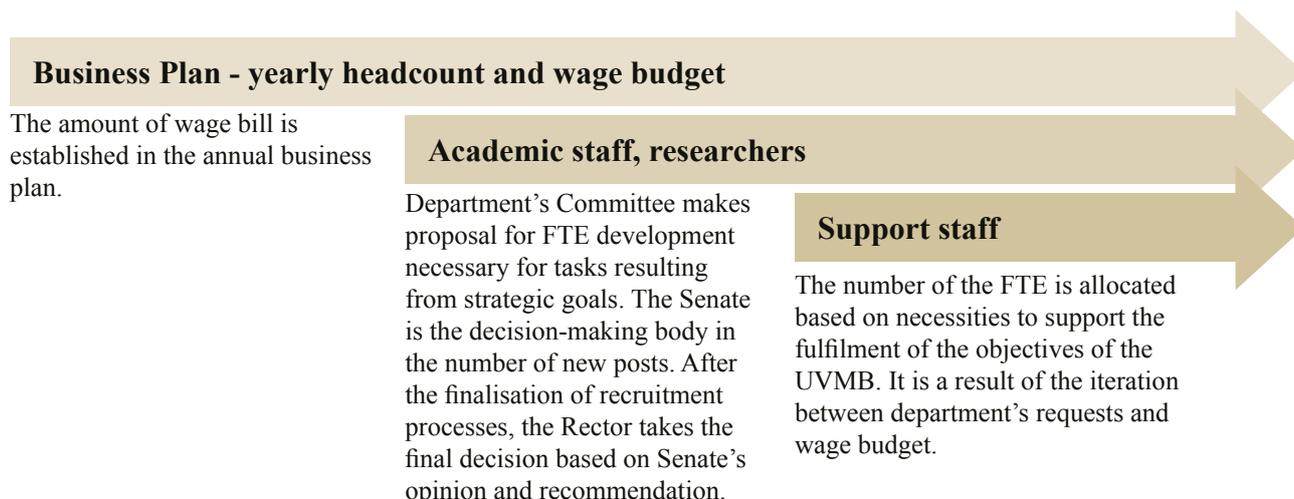


The management of UVMB reviews and fine-tunes the strategic goals every year. Based on these reviews the tasks for the current year will be summarised, which will first be broken down among the Vice-Rectors and then among the departments. The most significant area of strategic goals is education, including staff development issues.

Within the economic area, HR continuously monitors the organisation's general composition, workload, development directions, and satisfaction level. The most important area of personnel development is training and related forms of incentives. UVMB provides significant financial and professional support to lecturers, researchers, and other staff members in their professional advancement.

At the beginning of each year, the department council - taking into account the current year's tasks, personnel changes and internal development ideas - compiles a development plan on human resources. During the preparation of the business plan – on the basis of the preliminary surveys - the replacement and development is carried out through the following processes. The necessary funds for this are available from the budget every year. (Fig. 20)

Figure 20. The process of creating new positions



The Human Resources Plan is prepared in each year based on the evaluation of the available human resources, the strategic plan of UVMB, the program outcome, the D1C, the teaching outcomes of the different subjects, and the budget. The requests of the units are summarised by HR and after discussion by the Senate twice a year, and the Rector decides on new positions and promotions. All positions are publicly advertised. Revision happens in the next semester.

### Comments on Area 9

Dedicated students are hired as demonstrators at some departments. They participate in preparation and implementation of the practical training.

Students doing research in the framework of the Scientific Students' Association serve as a pool for recruitment of young staff members.

### Suggestions for improvement in Area 9

Attraction of foreign teachers and researchers would be beneficial.





## Area 10. Research programmes, continuing and postgraduate education

**Standard 10.1: The VEE must demonstrate significant and broad research activities of staff that integrate with and strengthen the veterinary degree programme through research-based teaching.**

UVMB is committed to high-quality education and research. Research is one of the primary tasks of the academic staff, and the research methods, results and experiences are also implemented into the education. Teaching evidence-based medicine based on consensus statements, retrospective analyses, literature reviews and widely respected books complemented with own and collaborative research is essential to provide up-to date knowledge for students. The Scientific Students' Association (SSA), where researchers work in close collaboration with students, is an outstanding opportunity to implement research into education. It is important for UVMB to appear in international university rankings that evaluate veterinary research and education. Publication in high ranked journals (D1, Q1 veterinary science) as hallmark of the quality of work, is supported by UVMB with several grants.

The grant portfolio of UVMB reflects the research strategy and the main areas of scientific activity as most of the research is funded by these grants. The value of the awarded projects varies from a few thousand Euros to millions of Euros. The academic staff of UVMB implement a project portfolio of around 11 million Euros, excluding the funds of other partners in case of consortia. This can be considered as a significant amount compared to the annual budget of UVMB. In addition to the Horizon Europe grant projects indicated in table 10.1.1. another five more projects were funded (about €1.5 million) by the Horizon Europe scheme.

About half of the research projects shown in Table 10.1.1. belong to basic research. The remainder is evenly distributed between industrial research and experimental development.

Table 10.1.1. List of the major funded research programmes in the VEE which were ongoing during the last full academic year prior the Visitation (2022/2023)

	<i>Scientific topic (title)</i>	<i>Grant/year (annual funding) €</i>	<i>Duration (years)</i>
1	National Laboratory of Infectious Animal Diseases, Antimicrobial Resistance, Veterinary Public Health and Food Chain Safety	1,454,097	4
2	National Laboratory for Health Security	87,246	4
3	Comparative magnetic resonance imaging, computer tomographic and radiographic examinations of the metacarpophalangeal joint of horses in full race and competition training: a longitudinal study	23,236	4
4	Cooperative Doctoral Program - National Defence Sub-Program	27,748	3
5	Cooperative Doctoral Program	106,272	5
6	Development of a multifunctional natural feed additive for the integrated protection against patobiont caused diseases and mortality	133,777	4
7	Development of a rapid screening test for on-site serological diagnostics of caprine arthritis-encephalitis using individual milk samples	46,667	3
8	Use of frontline technologies to screen pathogens, environment and pigs for a better disease control in swine herds	32,333	3

	<i>Scientific topic (title)</i>	<i>Grant/year (annual funding) €</i>	<i>Duration (years)</i>
9	Epidemiology of emerging vector-borne hemoparasites of ruminants, horses and carnivores in Northern Vietnam	45,091	2
10	Development of Novel Vaccine Adjuvant Formulation Against IBV for Poultry Industry	44,855	2
11	Evolutionary and demographic impacts of the social landscape on animal personality	23,264	4
12	Prospects of in vitro culture and preservation of preantral follicles, particularly the interspecies differences and application in assisted reproduction	23,166	4
13	Development of a novel veterinary medicinal product for the inhibition of antibiotic resistance, development of a supporting drug repositioning platform	215,966	3
14	Publishing of handbook on "Comparative veterinary pharmacokinetics and drug metabolism"	15,146	1
15	Complete digitalization of a rabbit meat production line	259,316	2
16	Hunger controls aging	139,426	5
17	Comparative analysis of selected Pasteurellaceae bacterium species	22,465	4
18	Host-vector-pathogen coevolution strategies: role of pathogens in shaping bat and bat-parasite population dynamics	20,390	4
19	Investigation of certain antimicrobial peptides in novel in vitro chicken and porcine gut-liver axis models	22,986	3
20	Creating and operating an Innovation Office in the University of Veterinary Medicine, Budapest, in order to promote RDI activities and cooperations	162,859	2
21	Life history consequences of nest site selection	20,483	5
22	Sharing research results on international scientific conferences	1,629	1
23	Participation and holding lecture in international conferences	1,629	1
24	Participation in the 31st World Buiatric Congress	1,584	1
25	Participation in the AOVET Mastercourse in equine fracture repair	2,801	1
26	MICROBI – Application of intelligent microreactors in biological wastewater treatment	232,521	2
27	Excellence Program with 3 fields: New diagnostical methods in equine health; Reduction of emission of stock animals; Development of embryology and assisted reproduction	1,046,950	2
28	The effects of probiotics and antioxidants on damage to porcine epithelial cells caused by veterinary pharmaceutical, toxic and infectious agents in vitro	7,082	5
29	Safer food through changed consumer behaviour: Effective tools and products, communication strategies, education and a food safety policy reducing health burden from foodborne illnesses	10,750	5
30	Participation in international conferences	2,943	1
31	Networking European poultry actors for enhancing the compliance of biosecurity measures for a sustainable production	7,750	3
32	Best practices and innovations for a sustainable beekeeping	39,063	4

	<i>Scientific topic (title)</i>	<i>Grant/year (annual funding) €</i>	<i>Duration (years)</i>
33	Holistic approach for tackling food systems risks in a changing global environment	57,500	4

**Standard 10.2: All students must be trained in scientific method and research techniques relevant to evidence-based veterinary medicine and must have opportunities to participate in research programmes.**

Academic staff of UVMB is dedicated to high quality research and thereby aware of the importance of evidence-based medicine. All subjects are based on evidence-based consensus statements, retrospective analyses and some specific areas of research into education. The SSA gives the opportunity for the students to get involved in the entire process of research from stating a hypothesis, to conducting a study, analysing, discussing, and presenting the results. SSA research connects the academic staff and individual students for a minimum of 2 academic years, facilitating a bond between them which leads to the education of the next academic generation. SSA is closely connected to PhD and postgraduate training, emphasising the importance and putting these students on the path of lifelong learning, as well as providing them a mentoring program. Those students that are not involved in SSA must write a thesis based on their own work. Papers showing the SSA work are accepted as theses with an excellent grade. About 25-30% of the students do research within the framework of SSA.

UVMB pays attention to the innovative approach not only among the researchers, but also among students. With the organisation of events, lectures, and hackathons the main goal of UVMB is that the students embrace the innovative mindset. Students are encouraged to create and develop their own ideas, while UVMB gives feedback, evaluates them, and in favourable cases supports them by providing the research infrastructure or even financing.

UVMB places a large emphasis on lifelong learning. Those pursuing a scientific career start their studies during the SSA work, find a mentor, attend the PhD course, and perform individual research, continue as senior lecturers, and aim at habilitation and full professorship, maintaining and founding a research group. Some of them also work as Cooperative Doctoral Students partly for industrial partners and take part in innovation. The three special colleges (horse, swine, general) of UVMB invite students to participate in a research and evidence-based eminent community. By maintaining contact with graduates and offering postgraduate continuing courses, UVMB has an important role in lifelong learning of veterinarians in Hungary.

All first-year students attend a library literacy session. During this orientation students learn about the use of the library and are introduced to bibliographic searching. SSA involves students in research, and during these mentoring programs they are introduced to basic and applied sciences, practical work, literature search, laboratory environment and behaviour, result analysis, and discussion. Students not participating in SSA activities are required to attend a thesis preparation course at the beginning of the 4<sup>th</sup> year. The course introduces the basics of literature research, publication skills required in the veterinary sciences, the concept of plagiarism, and citation skills. Students may also take an elective course to gain further knowledge of literature research. The library's website also provides information on thesis writing and librarians are available to answer students' questions, both verbally and in writing.

The academic staff of UVMB invites students to research projects within the SSA and the thesis framework. Research topics are provided for students to apply, and direct recruitment of excellent students is not a challenge. The list of topics is available on the homepage of the department, and they are also advertised on the lectures. The participation of students in research projects not only generates more capacity, and broadens their academic knowledge via literature exploration, but also

provides practical, hands-on experience in the laboratory and in the field. In these cases, the students can try and practice the theoretical knowledge they learn in lectures. Students become familiar with practical methods, solutions, research techniques, and even management of research projects during their studies and graduate with significant research experience. These skills enhance their chances when they are seeking employment opportunities both in the academic sphere (mainly as a PhD candidate) and in the for-profit research sector or even among authorities. Compulsory thesis writing is also an impetus for students to join a research group.

Involving and introducing veterinary students in scientific research is a traditional part of the teaching strategy of UVMB. All students must write a diploma thesis at UVMB, and 20 ECTS credits are allocated to it in the 10<sup>th</sup> and 11<sup>th</sup> semesters. The thesis project includes an experimental research part, either a laboratory experiment, a clinical study, or an analytical activity, and concludes with a diploma thesis. Students must work independently under the supervision of a recognised teacher or researcher. The supervisor provides guidance on thesis design and structure, approach to the relevant literature, research methodology, data analysis, presentation, and interpretation. The student, the supervisor and the head of department sign a written agreement on the topic and a provisional outline of the thesis. This agreement serves as a contract on the rights and duties of the supervisor and the student regarding the thesis and the compilation and review of the thesis. On completion of the diploma thesis students gain a significant amount of scientific knowledge, scientific skills, and academic competency. This includes: (1) identification of relevant scientific questions; (2) scientific literacy: putting the research question in the context of current knowledge; (3) scientific reasoning: assuming a critical stance towards current theories and methods, and discussing new findings in this context; (4) methodological competence: choosing appropriate data acquisition and analysis methods; (5) objective and critical reflection on the results obtained; (6) evidence-based reasoning: drawing conclusions substantiated by the current findings. Each thesis is also checked for plagiarism by using the Turnitin software and must adhere to the requirements of good scientific practice and be peer-reviewed by another scientist in the respective field. Finally, the thesis is presented at a public defence in front of internal and external examiners. The grade obtained is part of the final grade of the diploma.

**Standard 10.3: The VEE must provide advanced postgraduate degree programmes, e.g., PhD, internships, residencies and continuing education programmes that complement and strengthen the veterinary degree programme and are relevant to the needs of the profession and society.**

Table 10.3.1. Number of students registered at postgraduate clinical training

<i>Interns:</i>	<i>2022/2023</i>	<i>2021/2022</i>	<i>2020/2021</i>	<i>Mean</i>
<i>Companion animals</i>	5	6	6	5.7
<i>Equine</i>	2	2	2	2.0
<i>Production animals</i>	2	2	1	1.7
<i>Others (specify)</i>	0	0	0	0
<i>Total</i>	9	10	9	9.4

<i>Residents:</i>	<i>2022/2023</i>	<i>2021/2022</i>	<i>2020/2021</i>	<i>Mean</i>
<i>ECVS</i>	3	1	1	1.7
<i>ECAR</i>	3	3	2	2.7
<i>ECVCP</i>	1	1	1	1.0

<i>Total</i>	7	5	4	5.4
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*Others (non-EBVS programmes): post-graduate veterinary expert training (1 to 2-year-long)*

<i>Training:</i>	<i>2022/2023</i>	<i>2021/2022</i>	<i>2020/2021</i>	<i>Mean</i>
<i>Exotic animal medicine</i>	0	59	61	40
<i>Companion animal medicine</i>	50	62	64	59
<i>Ruminant medicine</i>	0	0	38	13
<i>Equine medicine</i>	48	0	0	16
<i>Porcine medicine</i>	29	30	0	20
<i>Veterinary business management</i>	0	0	54	18
<i>Animal protection</i>	36	0	0	12
<i>Total</i>	163	151	217	177

Post-graduate veterinary expert training courses are launched in a few-year-long intervals. Courses in Poultry medicine, Honeybee health case, Food hygiene and Wildlife medicine were not opened in the last three years.

Table 10.3.2. Number of students registered at postgraduate research training

<i>Degrees:</i>	<i>2022/2023</i>	<i>2021/2022</i>	<i>2020/2021</i>	<i>Mean</i>
<i>PhD</i>	87	73	71	77
<i>Others (specify)</i>	0	0	0	0
<i>Total</i>	87	73	71	77

Table 10.3.3. Number of students registered at other postgraduate programmes in the VEE but not related to either clinical or research work (including any external/distance learning courses)

<i>Training:</i>	<i>2022/2023</i>	<i>2021/2022</i>	<i>2020/2021</i>	<i>Mean</i>
<i>Applied biostatistics</i>	21	0	19	13
<i>Experimental toxicologist</i>	31	32	0	21
<i>Hippology (Equine Studies)</i>	26	0	19	15
<i>Total</i>	78	32	38	49

Table 10.3.4. Number of attendees to continuing education courses provided by the VEE

<i>Courses:</i>	<i>2022/2023</i>	<i>2021/2022</i>	<i>2020/2021</i>	<i>Mean</i>
<i>Current issues of wildlife health and management in Hungary</i>	0	117	0	39
<i>Moral issues of scientific progress</i>	23	0	0	8
<i>Prudent use of antimicrobials in food producing animals</i>	252	0	0	84
<i>Clinical pharmacology of antibacterial and antifungal drugs in companion animal practice</i>	0	112	0	37
<i>Advanced radiation safety course</i>	34	16	52	34
<i>Digital innovations and services in the agribusiness</i>	0	0	73	24
<i>Digital solutions for cattle health</i>	93	0	0	31
<i>Cooperation and networking</i>	0	21	0	7

<i>Enteripig training</i>	27	0	0	9
<i>Sustainable milk production</i>	0	99	0	33
<i>Flexible taping in dogs</i>	0	0	44	15
<i>Actual issues of pigeon health</i>	0	45	0	15
<i>Responsible dog ownership certificate course</i>	0	300	0	100
<i>How to control the contagious bovine diseases?</i>	98	0	0	33
<i>The profile of animal abusers</i>	0	68	0	23
<i>Before, during and after a burnout</i>	0	0	35	12
<i>Let's talk about the kidney</i>	0	44	0	15
<i>Current issues on equine medicine</i>	0	40	0	13
<i>Common issues of hypertension related diseases in cats</i>	0	0	45	15
<i>Meta-analysis course</i>	23	0	0	8
<i>Precision systems to support circular farming in dairy herds</i>	71	0	0	24
<i>Introduction to statistics using R</i>	0	26	0	9
<i>Introduction to using R</i>	0	16	0	5
<i>Special operative procedures in small animals</i>	18	0	0	6
<i>Statistical modelling</i>	22	0	0	7
<i>Surgical and internal medicine emergencies in small animals</i>	0	118	0	39
<i>Our tricky animal mirrors - Possibility for cooperation between veterinarians and psychologists</i>	72	0	0	24
<i>Selected chapters in small animal medicine</i>	127	0	0	42
<i>Total</i>	860	1022	249	710

The number of the interns seems to be stable for the next few years. The number of residents is expected to grow in parallel with the increasing number of Diplomates in different European Colleges. A total of 16 staff members are active diplomates currently. There is one formal and independent resident training program at UVMB, however some joint programs are also in progress.

The number of PhD students is predicted to grow, as we have more state financed seats available since 2022 than in the previous years. The academic staff tends to involve more and more PhD-students into research programs. Moreover, UVMB has joined the governmental initiative called Cooperative Doctoral Program, which encourages cooperation between the higher education institutions and for-profit research organisations. This kind of training helps PhD-students to gather working experience with companies during their studies.

Senior teaching staff trains undergraduate and postgraduate students and postgraduate students also help in undergraduate education. The integrated training of postgraduate and undergraduate students in clinical work and the planned allocation of the tasks help to avoid any conflicts. The cooperation of postgraduate and undergraduate students promotes collaborative teamwork. UVMB has appropriate caseload including referral cases and animals in the neutering program, so both undergraduates and postgraduates can get sufficient clinical experience.

Being the only veterinary school in Hungary, UVMB sees itself as a central hub for lifelong learning for all stakeholders and is committed to the European Universities' Charter on Lifelong Learning. UVMB is well placed to serve the community and the public, through multitude personal and regular

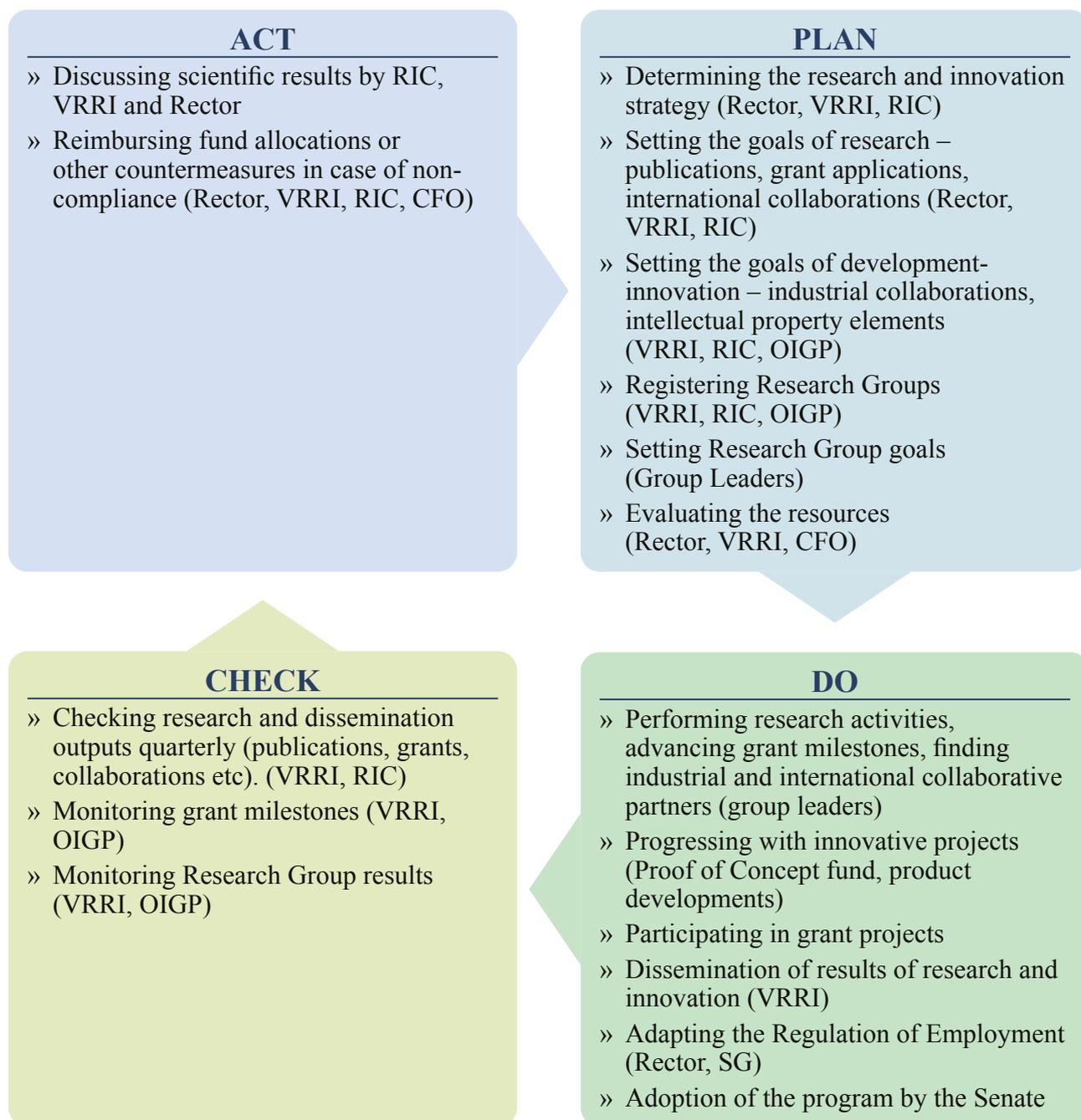
contacts and projects with various stakeholder groups. This exchange enables the development of both new and existing continuing education courses. The widespread continuing education (CE) activity of UVMB covers all aspects of it. This teaching system is conducted with the professional support of, and in close co-operation with, the Hungarian Veterinary Chamber (HVC), and the State Veterinary Service (SVS) as main stakeholders regarding CE. Besides postgraduate veterinary expert training lasting for one to two years, UVMB organises short, generally one-day-long courses (Table 10.3.4) that cover current and often specialised knowledge focusing on the practical aspects within a given area. CE is mandatory for Hungarian practitioners and is a prerequisite for having a licence to practice. A total of 300 credits must be collected within a three-year-long period in order to maintain a licence. A great deal of these credits are collected at the courses offered by UVMB. For this reason, the number of participants of these courses is expected to remain stable in the next three years.

**Standard 10.4: The VEE must have a system of QA to evaluate how research activities provide opportunities for student training and staff promotion, and how research approaches, methods and results are integrated into the veterinary teaching programmes.**

UVMB is dedicated to high quality research as shown in its intention to advance in international rankings. Employment requirements demand lecturers and researchers to publish their research in international D1-Q1-Q2 journals and promote international collaborations. Research output is very important in career advancement and is regularly evaluated. This guarantees continuous high quality research work. The teaching staff is encouraged to incorporate new results into the subjects, and subject leaders report this to the VRSA at the end of each semester by preparing a written report about their subject, the novelties, the students' exam results and their further steps. Young scientists mainly come from the SSA, where the academic staff works in close cooperation with students, providing a unique mentoring program. Researchers introduce the appropriate way of scientific thinking, analysis, and discussion, while students highlight their generation-specific aspects and share their experiences with their classmates. This synergy is highly effective to draw attention to the importance of research-based education. In addition, by attending special colleges and journal clubs, students can meet their interests.

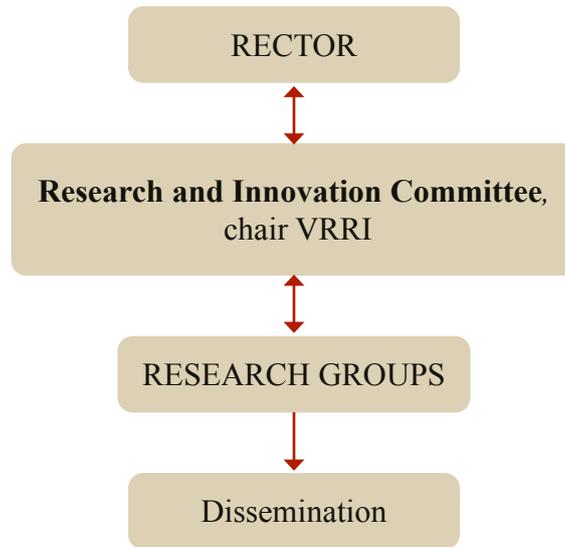
The RIC, chaired by the VRRRI and answering to the Rector is responsible for the long-term research strategy of UVMB. It collects information about the active research groups (RG) of UVMB, their scientific activities (grants, publications, contracts, conferences etc.) and the yearly plans regarding their activities, thereby it is aware of all the scientific activities of UVMB. The performance of the RGs is evaluated every year and is properly appreciated if the planned activities are accomplished. The activities of RGs are introduced to students during SSA mentoring programs, to UVMB staff in the SSA Forum, and to the RG leaders via regular scientific meetings (Fig. 21).

Fig. 21. PDCA cycle in research



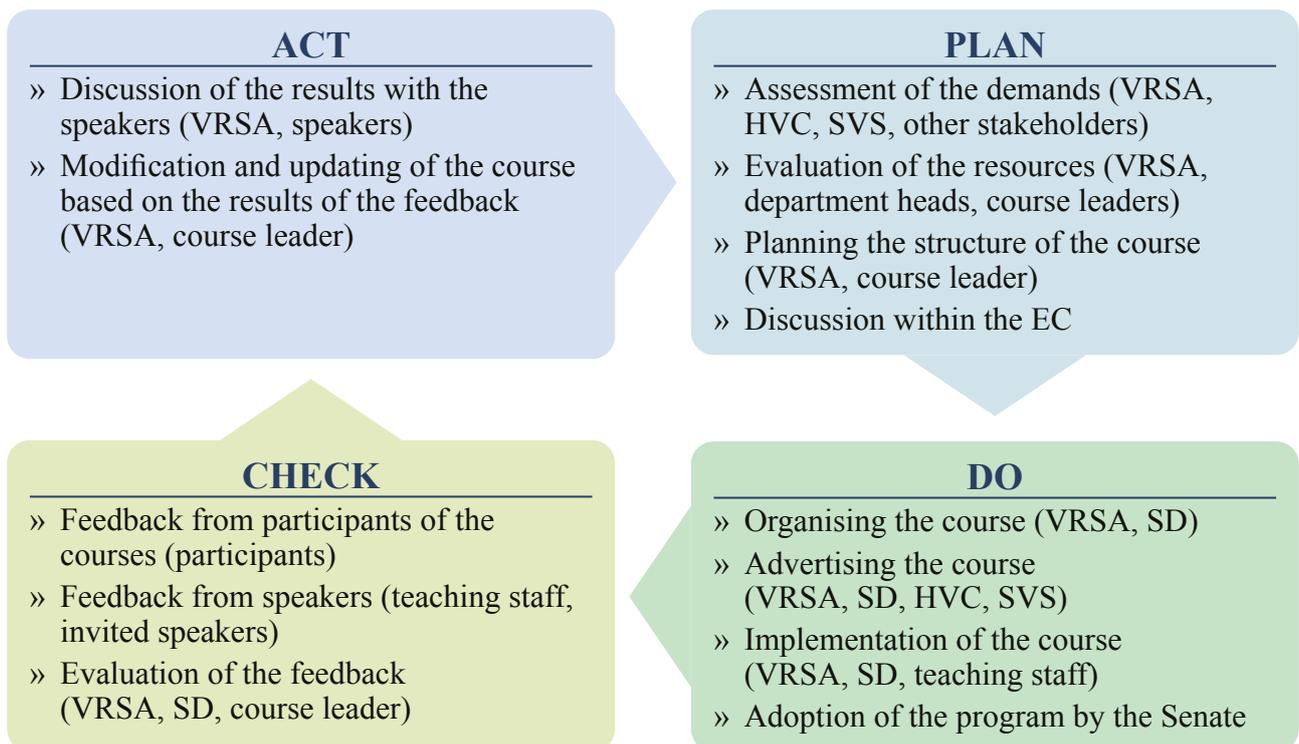
Information flow in research activities is shown in Fig. 22

Figure 22. Information flow in research activities



The VRSA is responsible for continuing education, he is helped by the Department of Postgraduate Training within the SD. The quality of continuing education courses at UVMB is ensured and monitored by an ISO 9001:2015 based quality assurance system. Courses are evaluated by the VRSA, the course leader and representatives of the HVC. HVC evaluates the seminars by points, taking into account both the professional level and the number of hours. Feedback questionnaires are completed at the end of each course (or semester), and the next course is redesigned based on the results. An essential part of the questionnaire is suggestion from students about further topics that may be of interest. The PDCA cycle of continuing education shows summarises the procedure (Fig. 23).

Figure 23. PDCA cycle in continuing education



UVMB has a PhD School which issues the highest level of university diploma, the PhD. The PhD School runs on yearly cycle. The plan is to train researchers in the veterinary field and to train fresh research and teaching staff for the needs of UVMB and our society. Information on need is collected within UVMB and a broader market, including research institutions, diagnostic institutes, and pharmaceuticals.

The PhD School of UVMB provides a 4-year-long training defined by the Hungarian law. In the first two years there are courses and research activities, and the final two years consists of research activities and finalising the PhD thesis.

The success of the progress of the students, the success rate of finalising the PhD, the output of the students, and most importantly the publications are continuously evaluated. The output of PhD students is assessed after the 2<sup>nd</sup> year in the form of a complex examination. Feedback is collected from the students, the teachers, the examination boards and the employers.

A PDCA cycle is implemented in the PhD school. The results are summarised yearly, and changes are done accordingly.

The VTH provides both paid and voluntary rotating or specified internship training programmes right after graduation in different clinical fields such as equine medicine, general small animal medicine, and small animal internal medicine or surgery. Interns are fully involved in the daily clinical routine (day and night shifts, journal clubs, specialists' consultations, hospital treatments) and some elementary clinical education (clinical rotation, labs). In case of fulfilling the entire year of the programme successfully, the supervisor verifies the fact by issuing a certificate. The VTH also runs some EBVS approved clinical residency programmes for 3 or 4 years, according to the requirements of the given College (ECVS – equine, ECVS – small animal, ECVCP and ECAR). All programmes are supervised by an appropriate EBVS approved Diplomate of the given college who is the full-time employee of the VEE.

## **Comments on Area 10**

UVMB participates in the Horizon projects as partner of the consortia, but it is planned to act as Coordinator soon, after collecting enough experience and gaining expertise by the academic staff in the implementation of the research framework programs.

Even though the requirements of the postgraduate veterinary expert training do not meet the requirements of the EBVS qualification, it is certainly an effective and efficient method to increase and update the knowledge of the practitioners nationwide. It can also help those who are seeking a European Specialist diploma. It is desirable to maintain the number of veterinary expert training courses offered, and the number of students participating in them should be increased to cover the majority of veterinarians in Hungary.

## **Suggestions for improvement in Area 10**

Promotion of innovations and inventions ready for marketing are among the short-term goals of UVMB.

UVMB plans to put more emphasis on recruiting young researchers and inviting guest researchers from abroad.

Stronger involvement of practitioners in postgraduate education and distance learning possibilities is suggested.

The number of postgraduate courses offered in English, should be increased.

A realistic prospective to widen the postgraduate clinical training at UVMB by launching further EBVS residency programmes such as ECVD and ECVIM-CA.





## **List of ESEVT Indicators**

**Name of the VEE:** University of Veterinary Medicine Budapest  
**Name & mail of the VEE's Head:** Prof. Péter Sótonyi, rektor@univet.hu  
**Date of the form filling:** 14.07.2023

	Raw data from the last 3 complete academic years	Year -1	Year -2	Year -3	Mean
1	n° of FTE teaching staff involved in veterinary training	231,99	220,6	199,3	217,30
2	n° of undergraduate students	1600	1603,5	1559,5	1587,67
3	n° of FTE veterinarians involved in veterinary training	153,48	151,05	145,34	149,96
4	n° of students graduating annually	221	213	230	221,33333
5	n° of FTE support staff involved in veterinary training	350,86	319,84	302,02	324,24
6	n° of hours of practical (non-clinical) training	1333	1333	1333	1333
7	n° of hours of Core Clinical Training (CCT)	1575	1575	1575	1575
8	n° of hours of VPH (including FSQ) training	860	860	860	860
9	n° of hours of extra-mural practical training in VPH (including FSQ)	240	240	240	240
10	n° of companion animal patients seen intra-murally	25586	20977	25069	23877,333
11	n° of individual ruminant and pig patients seen intra-murally	1095	1064	467	875,33333
12	n° of equine patients seen intra-murally	908	997	1371	1092
13	n° of rabbit, rodent, bird and exotic patients seen intra-murally	926	1267	1648	1280,3
14	n° of companion animal patients seen extra-murally	0	0	0	0,0
15	n° of individual ruminants and pig patients seen extra-murally	68228	71344	30149	56573,7
16	n° of equine patients seen extra-murally	0	0	0	0,0
17	n° of rabbit, rodent, bird and exotic patients seen extra-murally	81256	24457	1867	35860,0
18	n° of visits to ruminant and pig herds	321	178	155	218,0
19	n° of visits to poultry and farmed rabbit units	46	35	34	38,0
20	n° of companion animal necropsies	697	583	655	645,0
21	n° of ruminant and pig necropsies	970	711	653	778,0
22	n° of equine necropsies	148	138	104	130,0
23	n° of rabbit, rodent, bird and exotic pet necropsies	4683	4436	6558	5225,7
24	n° of FTE specialised veterinarians involved in veterinary training	21,7	17,3	17,3	18,8
25	n° of PhD graduating annually	15	20	18	17,7

Name of the VEE: University of Veterinary Medicine Budapest  
Date of the form filling: 14.07.2023

	Calculated Indicators from raw data	VEE values	Median values <sup>1</sup>	Minimal values <sup>2</sup>	Balance <sup>3</sup>
I1	n° of FTE teaching staff involved in veterinary training / n° of undergraduate students	0,137	0,15	0,13	0,011
I2	n° of FTE veterinarians involved in veterinary training / n° of students graduating annually	0,678	0,84	0,63	0,048
I3	n° of FTE support staff involved in veterinary training / n° of students graduating annually	1,465	0,88	0,54	0,925
I4	n° of hours of practical (non-clinical) training	1333,000	953,50	700,59	632,410
I5	n° of hours of Core Clinical Training (CCT)	1575,000	941,58	704,80	870,200
I6	n° of hours of VPH (including FSQ) training	860,000	293,50	191,80	668,200
I7	n° of hours of extra-mural practical training in VPH (including FSQ)	240,000	75,00	31,80	208,200
I8	n° of companion animal patients seen intra-murally and extra-murally / n° of students graduating annually	107,880	67,37	44,01	63,870
I9	n° of individual ruminants and pig patients seen intra-murally and extra-murally / n° of students graduating annually	259,559	18,75	9,74	249,819
I10	n° of equine patients seen intra-murally and extra-murally / n° of students graduating annually	4,934	5,96	2,15	2,784
I11	n° of rabbit, rodent, bird and exotic seen intra-murally and extra-murally / n° of students graduating annually	167,803	3,11	1,16	166,643
I12	n° of visits to ruminant and pig herds / n° of students graduating annually	0,985	1,29	0,54	0,445
I13	n° of visits of poultry and farmed rabbit units / n° of students graduating annually	0,172	0,11	0,04	0,127
I14	n° of companion animal necropsies / n° of students graduating annually	2,914	2,11	1,40	1,514
I15	n° of ruminant and pig necropsies / n° of students graduating annually	3,515	1,36	0,90	2,615
I16	n° of equine necropsies / n° of students graduating annually	0,587	0,18	0,10	0,487
I17	n° of rabbit, rodent, bird and exotic pet necropsies / n° of students graduating annually	23,610	2,65	0,88	22,730
I18	n° of FTE specialised veterinarians involved in veterinary training / n° of students graduating annually	0,085	0,27	0,06	0,025
I19	n° of PhD graduating annually / n° of students graduating annually	0,080	0,15	0,07	0,010
1	Median values defined by data from VEEs with Accreditation/Approval status in May 2019				
2	Recommended minimal values calculated as the 20th percentile of data from VEEs with Accreditation/Approval status in May 2019				
3	A negative balance indicates that the Indicator is below the recommended minimal value				
*	Indicators used only for statistical purpose				





# Glossary

# Glossary

Assembly of the unit heads	Meeting and discussion of the management and the unit heads of UVMB
CBlue	Curriculum mapping software
Comprehensive exams	Exams covering the content of the whole subject as taught for more than one semester.
Doki for Vet	Electronic patient recording system
Final exam	Exam in front of a committee, closing veterinary training
General Assembly	Meeting and discussion of the management and the whole staff of UVMB
Habilitation	A qualification process to demonstrate the candidate's teaching, presentation competencies and research activity. It is a precondition of promotion to associate or full professorship.
Instructor	Member of the teaching staff
Moodle	Electronic learning resource, where syllabi, handouts, recorded lectures, videos etc. can be found
Neptun	Electronic student registration, recording and information system
Postgraduate veterinary expert training	One to two-year-long courses for veterinarians having at least three-year-long practice focusing on certain animal species or veterinary activity
Semester-exam	Exams about topics encompassing the whole term's work
Subject leader	Academic person, responsible for a subject (teaching, assessment, administration etc.)
Syllabus	Detailed description of a subject, available in Neptun, CBlue and Moodle
Unipoll	Electronic examination system of Neptun
Univet Magazine	Journal, published by UVMB four times a year



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## List of appendices

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# ADDENDUM

## Measures taken for mitigation of the COVID-19 crisis

As a result of the COVID-19 crisis, UVMB faced completely new challenges. Lockdown and restrictions influenced the academic years of 2019/2020 and 2020/2021 and forced UVMB to modify its activity accordingly. UVMB has always considered it a particularly important task to operate continuously, and its work was not suspended either during wars or natural disasters in the past centuries. Continuous, however modified work was also a priority of the management of UVMB in this case, UVMB wanted to help students in their progression and graduation without delay. Thanks to the previous IT investments, education was immediately able to switch to distance learning.

The Government decided lockdown between 16<sup>th</sup> March of 2020 and 18<sup>th</sup> May of 2020. The Rector ordered distance learning. Theoretical lectures were recorded in the form of narrated power point presentations and students could download them from to the servers of UVMB. Laboratory practical trainings were also recorded and provided for students, while hands-on trainings were postponed to summer and autumn. Several consultations and discussions were organised with students using MS Teams. There were some oral examinations using MS Teams, but mainly computer-based written exams were preferred.

The academic year of 2020/2021 started with implementation of strict biosecurity measures. Only half of the class was present in-person at the lectures, while the other one could watch the streamed presentation real-time. Lectures were also recorded and uploaded together with notes and other teaching material to the Moodle platform of UVMB. Students had to attend laboratory and clinical training following strict biosecurity rules (face mask, keeping social distance, regular disinfection etc.). As a result of the second wave of COVID-19 pandemic the government decided lockdown of all schools including UVMB on the 12<sup>th</sup> of November 2020. All lectures were streamed but students could attend hands-on practical training for a few weeks, then all in-person trainings were ceased. From the second half of November 2020 UVMB returned to online teaching. Online education could have caused problems for several teaching staff members, but as a result of the earlier IT investment and the several courses about online teaching methods, teachers were well prepared. The professional support of the IT staff was especially important. The enthusiasm and the motivation of the students was also important in overcoming difficulties and this special situation got students and teachers even closer. UVMB's goal was to provide students with training that would enable them to obtain the D1C, even during the COVID-19 pandemic.

Student mobility was the only area where compensation was difficult. Some students cancelled, some postponed their mobility but there were also Erasmus-students, who attended the online training.

Online later hybrid training was used also in continuing education, and this kind of courses were even welcome by practitioners. Similar methods were used in graduate training, lectures, exams, discussions, conferences etc. happened online.

University life was adapted to the special situation. Some staff members worked from home office in order to decrease the density, but several staff members – with severe biosecurity measures – preferred working in person. Clinics and laboratories were working without interruption. Communication happened via e-mails, and webinars, and committee meetings were also organised in the form of webinars (using Microsoft Teams).

When vaccines became available and widespread vaccination took place, the risk of the disease considerably decreased, and it did not influence the usual work of UVMB from the academic year 2021/2022. The COVID-19 epidemic was a worldwide crisis, and it was a great challenge for UVMB, but UVMB was continuously operating with the help of students and the entire staff. It has also some beneficial effect. All lectures are now streamed, recorded and together with lecture notes and other teaching material are available for students on the Moodle platform.

## Appendix 1.1.

### *Members of the Board of Trustees of the Marek József Foundation:*

- Prof. Gábor Náray-Szabó chair, full professor, Member of the Hungarian Academy of Sciences
- Prof. Péter Sótonyi, DVM, DSc., Rector of the UVMB
- Gábor Gönczi, DVM, President of the Hungarian Veterinary Chamber
- Prof. Frigyes Janza, DVM, retired Major General of the Police
- Sándor Fazekas, lawyer, Member of the Hungarian Parliament, former Minister of Agriculture
- Ferenc Gerencsér DVM, lawyer, Asset supervisor

### *Members of the Supervisory Board of the Marek József Foundation:*

- Sándor Balázs Aladics, DVM, MBA
- Vilmos Lázár, President of the Hungarian Equestrian Federation
- Elek Gergely Sziebert, DVM

### *Members of the Public Benefit Supervisory Board of the UVMB:*

- János Nagy
- János Ádám
- Levente Szabó

## Appendix 1.2.

### *Institutes and Heads of Departments*

<b>Institute of Basic Sciences</b>	<b>Prof. Tibor Bartha</b>
<ul style="list-style-type: none"> <li>• Department of Anatomy and Histology</li> <li>• Department of Physiology and Biochemistry</li> <li>• Department of Chemistry</li> <li>• Department of Botany</li> </ul>	Prof. Péter Sótónyi Prof. Tibor Bartha Zoltán Vincze Dániel Cserhalmi
<b>Institute of Biology*</b>	<b>András Kosztolányi</b>
<ul style="list-style-type: none"> <li>• Department of Zoology</li> <li>• External Department of Limnology</li> <li>• External Department of Zootaxonomy</li> <li>• External Department of Functional Ecology</li> </ul>	András Kosztolányi Tibor Erős András Gubányi Péter Ódor
<b>Institute of Animal Sciences and Disease Prevention</b>	<b>Ákos Jerzsele</b>
<ul style="list-style-type: none"> <li>• Department of Pharmacology and Toxicology</li> <li>• Department of Parasitology and Zoology</li> <li>• Department of Pathology</li> <li>• Department of Microbiology and Infectious Diseases</li> <li>• Department of Animal Hygiene, Herd Health and Mobile Clinic</li> <li>• Centre for Bioinformatics</li> <li>• Centre for Animal Welfare</li> <li>• External Department of Veterinary Medical Research Institute</li> </ul>	Ákos Jerzsele Prof. Sándor Hornok Prof. Míra Mándoki Miklós Tenk László Könyves Norbert Solymosi Szilvia Vetter Prof. Tibor Magyar
<b>Institute of Clinical Sciences</b>	<b>Prof. Tibor Németh</b>
<ul style="list-style-type: none"> <li>• Department and Clinic of Equine Medicine</li> <li>• Department of Exotic Animal and Wildlife Medicine</li> <li>• Department of Surgery</li> <li>• Department of Internal Medicine</li> <li>• Department of Clinical Pathology and Oncology</li> <li>• Department of Obstetrics and Food Animal Medicine Clinic</li> <li>• External Department of Zoo Animal Health</li> <li>• External Department of Oncology</li> <li>• External Department of Food Animal Gene Conservation</li> </ul>	Prof. Gábor Bodó Prof. János Gál Prof. Tibor Németh Ferenc Manczur Péter Vajdovich Prof. József Rátky Endre Soós Péter Vajdovich Prof. József Rátky
<b>Institute of Animal Breeding, Nutrition and Laboratory Animal Science</b>	<b>Zsombor Wagenhoffer</b>
<ul style="list-style-type: none"> <li>• Department of Animal Breeding and Genetics</li> <li>• Department of Nutrition Science and Clinical Dietetics</li> <li>• Department of Laboratory Animal Science and Animal Welfare</li> </ul>	András Gáspárdy István Hullár Kinga Fodor
<b>Institute of Food Chain Science</b>	<b>Miklós Süth</b>
<ul style="list-style-type: none"> <li>• Department of Food Hygiene</li> <li>• Department of Applied Food Science</li> <li>• Department of Digital Food Science</li> <li>• External Department of Food Chain Safety (NÉBIH)</li> <li>• External Department of Dairy Research Mosonmagyaróvár</li> </ul>	Miklós Süth Gyula Kasza Józwiak Ákos Bernard Márton Oravecz Róbert Kocsis
<b>Institute of Economics and Biostatistics</b>	<b>Prof. László Ózsvári</b>
<ul style="list-style-type: none"> <li>• Department of Veterinary Forensics and Economics</li> <li>• Department of Biostatistics</li> </ul>	Prof. László Ózsvári Andrea Harnos
<b>National Laboratory for Infectious Diseases of Animals, Anti-microbial Resistance, Veterinary Public Health and Food Chain Safety</b>	<b>Ákos Jerzsele</b>
<b>Other training units with department status</b>	--
<ul style="list-style-type: none"> <li>• Department of Foreign Languages</li> <li>• Department of Physical Education</li> <li>• Teaching farm - Dóra farm</li> </ul>	Andrea Tereiné Bán Levente Deli Gergely Sziebert

\*: Not involved in veterinary training

## Appendix 1.3.

### *Councils and committees of the UVMB*

<b>Board/ Committee/ Council</b>	<b>Composition</b>	<b>Function/Responsibilities</b>
<b>Rector's Council</b>	Chair: Rector, Vice Rectors, Chief Financial Officer, Secretary-General	Headed by the Rector, the body is involved in decision support, review activities, consulting, and harmonisation.
<b>Senate (16 members)</b>	Rector (ex officio, chair), academic staff: 9 non-academic staff: 1 undergraduate students: 4 PhD student: 1	The highest decision-making body of the UVMB. Its duties are laid down in the UVMB's OOO. The Senate approves the UVMB's training programme, ROO, doctoral policy, principles of quality- and performance-based differentiated income distribution, budget, annual report, business plan, the applications for full professor positions, the proposals to create, launch and/or terminate training programmes.
<b>Accreditation and Quality Management Committee (14 members)</b>	Chair: Rector's advisor senior academic staff: 6 auditors: 2 stakeholders: 3 undergraduate student: 1 PhD student: 1	With the right to submit proposals and opinions, the Committee reviews and analyses the fulfilment of QA requirements, consults the UVMB on the implementation of its quality policy, quality development policy and the planning and coordination of quality management tasks related to the UVMB's teaching, research, and service activities.
<b>Student Welfare Committee (7 members)</b>	Chair: Vice Rector for Study Affairs, senior academic staff: 2 junior academic staff: 2 undergraduate student: 1 PhD student: 1	Decides on granting scholarships and financial support for students, evaluate applications, distribute cultural funds, ERASMUS scholarships, etc.; supports the Rector's decision on fee waivers and deals with welfare issues of students.
<b>Education Committee (14 members)</b>	Chair: Vice Rector for Study Affairs, Vice Rector for Research and Science, Vice Rector for International Relations, Vice Rector for Clinical Affairs, Director of Education senior academic staff: 4 junior academic staff: 2 undergraduate students: 2 PhD student: 1	The Committee is a consulting, coordinating, and controlling body that participates in the development of education and training; it conducts decision-support and evaluative tasks in development issues related to the programmes as well as contributes to the development of requirements and conditions. In addition, it plans and designs postgraduate continuing education courses, contributes to the exploration of factors influencing training programmes. It evaluates proposals and submissions regarding the development of programmes, the creation and launch of new subjects and the regulation of studies and examinations, conduct activities related to students' feedback on teachers and accreditation of subjects.
<b>Doctoral and Habilitation Council (9 members)</b>	Chair: a professor with an HAS DSc title Members: habilitated teachers or researchers (at least two of them are not employed by the UVMB): 7 PhD student: 1	The Council manages and supervises with decision-making rights the doctoral programs and degree attainment processes, with special regard to the preliminary approval of curricula, enrolment into the programme and awarding degrees as well as performs organisational and decision-making tasks in relation with the habilitation procedure, as a university body created to conduct the habilitation procedure.

<b>Student Appeals Committee</b> <b>(7 members)</b>	Chair: senior academic staff Senior academic staff: 2 Junior academic staff: 1 Undergraduate students: 2 PhD student: 1	The Committee reviews and makes decisions on student appeals, the detailed rules of its operation are laid out in the Code of Studies and Examinations.
<b>Ethical Council</b> <b>(5 members)</b>	Senior academic staff: 5	The Council investigates the ethical misconduct of persons defined in ROO Section 2 (1) a)-c) as well as conducts the second-degree investigation of complaints raised in connection with the UVMB's services, similarly to the manner described in Chamber of Commerce Act.
<b>Animal Experimentation Committee</b> <b>(8 members)</b>	Chair: Senior academic staff, Academic staff: 7 National Animal Welfare Commissioner (without voting right)	It prepares the institution's policy on animal tests, reviews its implementation, supervises the animal welfare aspects of the institution's animal testing activities, organises training courses and examinations for persons entitled to conduct and carry out animal tests and animal care activities at the UVMB. Furthermore, it advises the staff on animal welfare issues and/or pre-approves of tests.
<b>International Relations Committee</b> <b>(6 members)</b>	Chair: Vice Rector for International Relations Academic staff: 3 Students: 2.	The Committee conducts activities related to the planning and organisation of the UVMB's international relations as well as the allocation of resources available for such purposes.
<b>Research and Innovation Committee</b> <b>(9 members)</b>	Chair: Vice Rector for Research and Science, heads of the Doctoral School's two programs: 2 Vice Rector for Study Affairs Vice Rector for Clinical Affairs Vice Rector for International Connections Chair of the Doctoral and Habilitation Council senior acad. staff: 1 Director of the library PhD student: 1	It reviews the UVMB's global strategy for research, development, and innovation. Based on the data supplied by the UVMB Library, it regularly summarises the results of the scientific research activities conducted at the UVMB. It analyses the Hungarian and international ranking of the UVMB's scientific research by branches of science as well as the conditions of the academic environment for professional groups with outstanding fund-raising capabilities. It follows the implementation of scientific research projects and the operation of the Directorate for Innovation and Tenders. The Committee performs the tasks assigned to it by the Intellectual Property Management Policy. The Committee performs the tasks assigned to it by the Certification Mark Policy. Furthermore, it conducts the following activities: support the operation, provide the professional framework, and identify the professional guidelines for Hutýra Ferenc Library, Archives and Museum,
<b>Clinical Council</b> <b>(6 members)</b>	Chair: Vice Rector for Clinical Affairs Heads of clinical departments: 5	The CC is a consulting board being responsible towards the Senate to discuss major topics regarding clinical education, development, and service. The members of CC meet at least 4 times a year or 'ad hoc' whenever it is necessary due to a particular topic or a necessity of an urgent decision.
<b>Council of the Scientific Students' Association</b> <b>(45 members)</b>	Chair: Rector Academic staff: 40 Students: 4	Organises conferences of the Scientific Students' Association, manages and coordinates SSA activities, mobilises students and teachers, collects papers, and distributes them for review, performs administration and coordination tasks related to the funding of SSA conferences and delegates deserving students to national conferences.
<b>Credit Committee</b> <b>(6 members)</b>	Academic staff: 6	The Committee acts in credit equivalence and credit transfer affairs. This is the only committee without a student member by law.

<b>Student Disciplinary Committee (8 members)</b>	Chair: academic staff member academic staff: 4 students: 3	The Committee investigates disciplinary affairs related to the students at the UVMB and adopts resolutions in the first degree.
<b>Admission Board (3 members)</b>	Chair: Vice Rector for International Relations Senior academic staff: 1 Junior academic staff: 1 Head of the Students' Secretariat	The Board supervises the entire enrolment process, including organizing entrance exams and making decisions on enrolment, transfer requests, and specific student requests.
<b>Biosafety Advisory Board (7 members)</b>	Chair: Rector Vice Rector for Clinical Affairs, Vice Rector for Research and Science Rector's senior advisor Head of quality assurance, Head of operations Head of security.	The Body ensures the development of appropriate biosafety guarantees for the UVMB's operation. As a decision support body, its tasks include developing and updating biosafety regulations; review the biosafety related areas of the UVMB's development strategy; developing temporary emergency measures and rules in case of an epidemic.
<b><i>Project Supervision Committee of the National Laboratory for Infectious Animal Diseases, Antimicrobial Resistance, Veterinary Public Health, and Food Chain Safety (4 members)</i></b>	Chair: Senior academic staff member Delegates of the participating institutions: 3 National Research, Development, and Innovation Office: 1	The committee guarantees the progression of the milestones and achievements according to plans. Orchestrating such a big project of several institutes, more than 60 scientists require quarterly sessions with a committee involving internationally known experts and representatives of the Hungarian authorities.
<b>Council of the Doctoral School (12 members)</b>	Chair: Senior academic staff member Senior academic staff: 8 External professors: 2 PhD student: 1	The Council runs the doctoral program, including setting regulations to operate the administration and the quality management system, reviewing, and changing the Doctoral School curriculum and requirements, furthermore at the end proposing to grant the PhD degree. The overall function of the PhD school is controlled by the Doctoral and Habilitation Council.
<b>Equal Opportunity Committee (5 members)</b>	Chair: Vice Rector for Study Affairs, Head of Study Department Head of Rector's Office Students: 2 Harassment Officer	The committee ensures the fulfilment of the Equal Opportunity Plan's tasks. At the same time assures the coordination of the duties connected to disability, handling complaints related to equal opportunity.

## Appendix 1.4.

### *Formal collaborations with other VEEs*

#### **VetNEST partnership**

VetNEST is a network founded in 1993/94 by four universities and faculties of veterinary medicine in Brno, Budapest, Kosice, and Vienna. A few years later, the group was joined by Ljubljana, Wroclaw, and Zagreb as regular members. The veterinary faculties in Sarajevo and Skopje have been granted candidate status. Together with the faculties of veterinary medicine in Belgrade and Tirana, these nine VEEs form the VetNEST-Extended network, whose mobility programmes have been funded by CEEPUS (Central European Exchange Program for University Studies) for many years.

- University of Veterinary Sciences Brno, Czech Republic
- University of Veterinary Medicine Budapest, Hungary
- University of Veterinary Medicine and Pharmacy in Kosice, Slovakia
- University of Ljubljana, Veterinary Faculty, Slovenia
- Wroclaw University of Environmental and Life Sciences, Poland
- University of Veterinary Medicine, Vienna, Austria
- University of Zagreb, Faculty of Veterinary Medicine, Croatia
- University of Sarajevo, Veterinary Faculty, Bosnia, and Herzegovina
- Ss. Cyril and Methodius University, Faculty of Veterinary Medicine, Skopje, North Macedonia.

#### **Bilateral Exchange programs**

UVMB also has strong and live cooperation with University of Veterinary Medicine Vienna and Hannover Veterinary School that looks back to 45 years of active and engaging student and staff transfer. The bilateral program with these two schools is mainly focusing on to allow 4<sup>th</sup> year students to complete their mandatory 4<sup>th</sup> year summer practice at each other's institution. The exchange programme is a great success for all parties, it is especially strong with Hannover.

#### **Erasmus**

UVMB also has several partnership agreements with several European VEEs in the frame of the Erasmus exchange programme. The programme allows students/teachers/staff for international mobility exchanges, which is highly popular among international and Hungarian students alike.

Country	City	University	Students	Months/ student
Austria	Vienna	Veterinärmedizinische Universität	1	4
Belgium	Gent	Universiteit Gent	2	3
Bulgaria	Stara Zagora	Trakia University	2	5
Croatia	Zagreb	University of Zagreb, Fac. Vet. Med.	2	6
Czech Republic	Brno	Univ.Vet. and Pharmaceutical Sciences	1	6
	Ceské Budejovice	University of South Bohemia in Ceské Budejovice Faculty of Science	2	6
Estonia	Tartu	Estonian University of Life Sciences	2	5
Finland	Helsinki	Helsinki University	1	5

France	Lyon	Ecole Nationale Veterinaire Lyon	1	10
	Nantes	Ecole Nationale Veterinaire Nantes	2	5
	Toulouse	Ecole Nationale Veterinaire Toulouse	2	5
Germany	Berlin	Freie Universität Berlin	1	12
	Giessen	Justus-Liebig-Universität	2	6
	Hanover	Tierärztliche Hochschule	2	5
	Leipzig	Universität Leipzig	1	12
	Munich	Ludwig-Maximilians-Universität	2	6
<b>Greece</b>	Thessaly	University of Thessaly	1	6
Italy	Bologna	Università Degli Studi di Bologna	2	6
	Padova	Università Degli Studi di Padova	1	6
	Parma	Università Degli Studi di Parma	2	5
	Perugia	Università Degli Studi di Perugia	3	10
<b>Lithuania</b>	Kaunas	Lithuanian Veterinary Academy	2	5
<b>Netherlands</b>	Utrecht	Universiteit Utrecht	1	12
<b>Poland</b>	Lublin	University of Life Sciences Lublin	2	6
	Olsztyn	University of Warmia and Mazury in Olsztyn	2	12
	Wroclaw	Wroclaw Uni. of Environ. & Life Science	1	10
	Wroclaw	University of Wroclaw	1	9
<b>Portugal</b>	Évora	Universidade de Évora	2	5
	Lisbon	Universidade de Lisboa	2	9
	Vila-Real	Univ. de Trás-os-Montes e Alto Douro	2	9
	Porto	Universidade do Porto	2	10
<b>Romania</b>	Cluj Napoca	University of Agr. Sciences and Vet.Med.	2	5
	Timisoara	University of Agr. Sciences and Vet.Med	2	5
<b>Serbia</b>	Belgrade	University of Belgrade	1	4
<b>Slovakia</b>	Kosice	University of Veterinary Medicine and Pharmacy in Kosice	2	5
<b>Slovenia</b>	Ljubljana	University of Ljubljana	2	6
<b>Sweden</b>	Uppsala	Swedish University of Agr. Sciences	1	5
<b>Spain</b>	Barcelona	Universitat Autònoma Barcelona	1	10
	Cáceres	University of Extremadura	2	5
	Madrid	Universidad Complutense de Madrid	1	12
	Murcia	Universidad de Murcia	2	5
	Valencia	Universidad Católica de Valencia	2	9
	Valencia	Universidad Cardenal Herrera	2	5
<b>Turkey</b>	Ankara	Ankara University	1	12
	Aydin	Adnan Menderes University	1	6
	Bursa	Uludag University	2	6

UVMB has also had a contractual partnership with the University of the United Arab Emirates since 2018 which is similar to the Erasmus programme. A group of 4<sup>th</sup> year students receive theoretical lectures in Al Ain and practical clinical teaching at the UVMB for 3 months twice a year.

## Appendix 1.5.

*Quality management directives of the UVMB:*

1. ME-01 Education undergraduate and continuing education processes, student services
2. ME-02 Research, research support, scientific organization
3. ME-03 Regulation of clinical operation
4. ME-04 Provision and development of human resources
5. ME-05 Grants related activities, project processes
6. ME-06 Effective data and information management, publicity, document management
7. ME-07 Provision and development of assets
8. ME-08 Cooperation with Student's Council, supporting their operation
9. ME-09 Regular monitoring of opinions, needs and satisfaction of students, external and internal stakeholders; feedback of opinion research results into decision-making processes.

## Appendix 1.6.

### *Elective subjects related to Food Chain Safety*

- The role of veterinarians in creating a better food safety
- Food safety risk analysis
- Food technology in practice
- Proper diet and gastronomy
- Sustainability aspects in the food chain
- Application possibilities of data-analysis in the field of food chain safety
- Complexity in veterinary medicine:
- Veterinary public health
- Meat Substitutes and alternative proteins in food chain safety
- Food Hygiene of Catering Sector and Mass Caterers
- Risk Communication in Food Chain Safety)

## Appendix 3.1.

### Model curriculum

#### CURRICULUM 2023/2024

Below you find the core subjects listed, for their content you may visit:

<https://univet.hu/en/education/courses/>

The semester covers 15 weeks. One unit of instruction is a 45-minutes period

1st Year									
		1ST SEMESTER - WINTER TERM				2ND SEMESTER - SPRING TERM			
SUBJECT	COURSE CODE	HOURS/SEMESTER		EXAM	ECTS	HOURS/SEMESTER		EXAM	ECTS
		LECTURES	WORKSHOPS			LECTURES	WORKSHOPS		
Anatomy 1.	ATEAN004EON	30	45	EXAM	5				
Chemistry	ATEKE003EON	30	30	EXAM	5				
Histology 1.	ATEAN002EON	30	30	EXAM	5				
Biology	ATEAN007EON	30	0	EXAM	3				
Biophysics	ATEKE002EON	30	0	EXAM	3				
Zoology	ATEPA001EON	30	0	EXAM	3				
Informatics	ATEBM002EON	15	30	PCG	3				
Veterinary & Food Chemistry	ATEKE001EON					45	30	EXAM	6
Anatomy 2.	ATEAN005EON					30	45	EXAM	5
Histology 2.	ATEAN003EON					30	45	EXAM	5
Veterinary Botany	ATENT001EON					30	45	EXAM	5
Animal Welfare (Animal Protection)	ATEAB004EON					30	15	EXAM	3
Biomathematics	ATEBM001EON					15	30	EXAM	3
<b>Total hours:</b>		<b>195</b>	<b>135</b>		<b>27</b>	<b>180</b>	<b>210</b>		<b>27</b>

**Abbreviations:** PCG - Practical course grade, EXAM - examination

Each semester students can collect credits from so-called elective (optional) courses. In 10 semester they need to collect min. 30 ECTS from electives. Our credits are ECTS credits, in each semester 30 ECTS credits can be collected (27 ECTS from compulsory-, 3 ECTS from optional courses)

2nd Year									
		1ST SEMESTER - WINTER TERM				2ND SEMESTER - SPRING TERM			
		HOURS/SEMESTER		EXAM	ECTS	HOURS/SEMESTER		EXAM	ECTS
SUBJECT	COURSE CODE	LECTURES	WORKSHOPS			LECTURES	WORKSHOPS		
<b>Anatomy 3.</b>	ATEAN006EON	30	45	<b>FINAL EXAM</b>	8				
Veterinary Physiology 1.	ATEEB003EON	45	15	PCG	6				
Veterinary Biochemistry 1.	ATEEB001EON	45	15	PCG	6				
Agricultural Economics	ATEAI001EON	30	0	EXAM	3				
Laboratory Animal Science & Bioethics	ATEAB005EON	15	8	EXAM	3				
Veterinary Profession	ATEAN001EON	15	0	EXAM	1				
<b>Veterinary Physiology 2.</b>	ATEEB004EON					60	15	<b>FINAL EXAM</b>	7
Veterinary Biochemistry 2.	ATEEB002EON					45	15	EXAM	6
Veterinary Genetics	ATEAB001EON					30	30	EXAM	6
Veterinary Virology	ATEJM003EON					30	30	EXAM	4
Topographic & Applied Anatomy	ATEAN010EON					15	30	EXAM	4
<b>Total hours:</b>		<b>180</b>	<b>83</b>		<b>27</b>	<b>180</b>	<b>120</b>		<b>27</b>

**Practical courses between semesters:**

2 weeks of Animal Breeding summer practice after the 4th semester required, as being a prerequisite of the Animal Breeding exam!

**Abbreviations:** PCG - Practical course grade, EXAM - examination

Each semester students can collect credits from so-called elective (optional) courses. In 10 semester they need to collect min. 30 ECTS from electives.

Our credits are ECTS credits, in each semester 30 ECTS credits can be collected (27 ECTS from compulsory-, 3 ECTS from optional courses)

3rd Year									
		1ST SEMESTER - WINTER TERM				2ND SEMESTER - SPRING TERM			
		HOURS/SEMESTER		EXAM	ECTS	HOURS/SEMESTER		EXAM	ECTS
SUBJECT		LECTURES	WORKSHOPS			LECTURES	WORKSHOPS		
General Pathology	ATEPT001EON	60	30	EXAM	6				
Animal Breeding	ATEAB003EON	45	30	EXAM	5				
Veterinary Pharmacology 1.	ATEGY001EON	45	30	PCG	5				
Veterinary Bacteriology	ATEJM001EON	30	30	EXAM	4				
Veterinary Pathophysiology	ATEKO001EON	45	0	EXAM	3				
Applied Ethology	ATEAH001EON	15	30	EXAM	3				
Veterinary Laboratory Diagnostics	ATEKO002EON	0	30	EXAM	1				
<b>Veterinary Pharmacology 2.</b>	ATEGY002EON					30	30	<b>FINAL EXAM</b>	6
Small Animal Medicine 1.	ATEBE001EON					60	45	EXAM	5
Parasitology 1.	ATEPA003EON					45	30	PCG	4
Veterinary Immunology	ATEJM002EON					30	30	EXAM	4
Animal Nutrition 1.	ATEAB008EON					30	15	PCG	3
Equine Medicine and Surgery 1.	ATELK005EON					30	45	EXAM	3
Pathology 1.	ATEPT003EON					15	30	PCG	2
<b>Total hours:</b>		<b>240</b>	<b>180</b>		<b>27</b>	<b>240</b>	<b>225</b>		<b>27</b>

**Practical courses between semesters:**

2 weeks of Animal Nutrition summer practice after the 6th semester required!

**Abbreviations:** PCG - Practical course grade, EXAM - examination

Each semester students can collect credits from so-called elective (optional) courses. In 10 semester they need to collect min. 30 ECTS from electives  
Our credits are ECTS credits, in each semester 30 ECTS credits can be collected (27 ECTS from compulsory-, 3 ECTS from optional courses)

4th Year									
		1ST SEMESTER - WINTER TERM				2ND SEMESTER - SPRING TERM			
		HOURS/SEMESTER		EXAM	ECTS	HOURS/SEMESTER		EXAM	ECTS
SUBJECT		LECTURES	WORKSHOPS			LECTURES	WORKSHOPS		
Animal Nutrition 2.	ATEAB009EON	45	15	EXAM	4				
Parasitology 2.	ATEPA004EON	30	30	EXAM	5				
Equine Medicine and Surgery 2.	ATELK006EON	45	45	PCG	4				
Small Animal Medicine 2.	ATEBE002EON	45	45	PCG	4				
Pathology 2.	ATEPT004EON	15	45	PCG	3				
Farm Animal Medicine 1.	ATEHA001EON	15	15	PCG	2				
Reproduction & Biotechnology 1.	ATESU008EON	30	0	PCG	2				
Veterinary Toxicology	ATEGY003EON	30	0	EXAM	2				
Quantitative veterinary epidemiology	ATEBK007EON	15	0	EXAM	1				
How to write a thesis? (thesis preparation course)	ATEKT001EON	4	0	Sign.	0				
<b>Pathology 3.</b>	<b>ATEPT005EON</b>					30	60	<b>FINAL EXAM</b>	4
Small Animal Medicine 3.	ATESE002EON					45	60	PCG	4
<b>Equine Medicine and Surgery 3.</b>	<b>ATELK007EON</b>					30	30	<b>FINAL EXAM</b>	3
Farm Animal Medicine 2.	ATEHA002EON					30	30	PCG	3
Exotic Animal Medicine	ATEEG001EON					30	15	EXAM	2
Animal Hygiene & Herd Health 1.	ATEAH002EON					30	0	EXAM	2
Bee Hygiene and Health	ATEPA002EON					15	15	EXAM	2
Comparative Animal Protection	ATEAV001EON					30	0	EXAM	2
Fish Hygiene and Diseases	ATEPT002EON					30	0	EXAM	2
Oncology	ATEKO003EON					15	15	EXAM	2
Reproduction & Biotechnology 2.	ATESU009EON					15	0	PCG	1
<b>Total hours:</b>		<b>274</b>	<b>195</b>		<b>27</b>	<b>300</b>	<b>225</b>		<b>27</b>

**Practical courses between semesters:**

4 weeks of Polyclinical summer practice after the 8th semester required!

plus obligatory clinical practice (day and night shifts) with small and large animals and mobile clinic

**Abbreviations:** PCG - Practical course grade, EXAM - examination

Each semester students can collect credits from so-called elective (optional) courses. In 10 semester they need to collect min. 30 ECTS from electives.

Our credits are ECTS credits, in each semester 30 ECTS credits can be collected (27 ECTS from compulsory-, 3 ECTS from optional courses)

5th Year									
		1ST SEMESTER - WINTER TERM				2ND SEMESTER - SPRING TERM			
		HOURS/SEMESTER		EXAM	ECTS	HOURS/SEMESTER		EXAM	ECTS
SUBJECT		LECTURES	WORKSHOPS			LECTURES	WORKSHOPS		
<b>Small Animal Medicine 4.</b>	ATESE003EON	45	60	<b>FINAL EXAM</b>	5				
Epizootiology & Infectious Diseases 1.	ATEJM004EON	60	15	PCG	4				
Food Hygiene 1.	ATEEH001EON	60	30	PCG	4				
Animal Hygiene + Herd Health 2.	ATEAH003EON	45	15	EXAM	3				
Reproduction & Biotechnology 3.	ATESU010EON	30	15	EXAM	3				
<b>Farm Animal Medicine 3.</b>	ATEHA003EON	15	30	<b>FINAL EXAM</b>	2				
Forensic Veterinary Medicine	ATEAI008EON	30	0	EXAM	2				
State Veterinary Medicine and Ethics 1.	ATEAI024EON	30	0	EXAM	2				
Veterinary Ophthalmology	ATESE001EON	15	15	EXAM	1				
Prudent Use of Antimicrobial Drugs	ATEGY006EON	15	0	EXAM	1				
Thesis work	vary at each dept.					0	0	Sign.	10
<b>Epizootiology &amp; Infectious Diseases 2.</b>	ATEJM005EON					60	30	<b>FINAL EXAM</b>	6
<b>Food Hygiene 2.</b>	ATEEH002EON					60	30	<b>FINAL EXAM</b>	5
State Veterinary Medicine and Ethics 2.	ATEAI025EON					30	0	EXAM	4
Animal Health Economics and Communication	ATEAI023EON					45	0	EXAM	2
<b>Total hours:</b>		<b>345</b>	<b>180</b>		<b>27</b>	<b>195</b>	<b>60</b>		<b>27</b>

plus obligatory clinical practice (day and night shifts) with small and large animals and mobile clinic

**Abbreviations:** PCG - Practical course grade, EXAM - examinatio

Each semester students can collect credits from so-called elective (optional) courses. In 10 semester they need to collect min. 30 ECTS from electives. Our credits are ECTS credits, in each semester 30 ECTS credits can be collected (27 ECTS from compulsory-, 3 ECTS from optional courses)

**In addition to core studies a wide selection of electives make the curriculum more individually-suited.**

#### **Practical courses between semesters**

There are obligatory extramural practicals during the summer after the 4th, 6th and 8th semester (Animal Breeding 2 weeks, Animal Nutrition 2 weeks, Polyclinical 4 weeks);

**obligatory clinical practice (day and night shifts) with small and large animals and obligatory mobile clinic visits between semesters 6<sup>th</sup> till 10<sup>th</sup>**

<b>The 11th (practical) semester</b>					
includes practical work at the University Clinics and university-associated institutions (for international students usually outside Hungary) and it has an ECTS-value of 30.					
<b>BLOCKS:</b>	HOURS/SEMESTER		EXAM	ECTS	
	LECTURES	WORKSHOPS			
Thesis defence			Sign.	10	
Clinical practice block 1. (4-week)	0	160	Pr.Exam	5	
Clinical practice block 2. (4-week)	0	160	Pr.Exam	5	
Clinical practice block 3. (4-week)	0	160	Pr.Exam	5	
Food Hygiene practice	0	80	Pr.Exam	2	
State Veterinary Medicine practice	0	80	Pr.Exam	2	
Laboratory Diagnostics practice	0	80	Pr.Exam	1	
<b>Total hours:</b>	<b>0</b>	<b>720</b>		<b>30</b>	
<b>Clinical blocks:</b> farm animal, small animal or equine clinical practice					
<b>Clinical practices in semester 7-10 (one type/semester):</b>	LECTURES	WORKSHOPS			
Clinical practice - Equine medicine	0	60			semester 7-10
Clinical practice - Internal Medicine	0	60			semester 7-10
Clinical practice - Obstetrics	0	20			semester 7-10
Clinical practice - Surgery	0	40			semester 7-10
Mobile clinic	0	60			semester 7-9
<b>Total hours:</b>	<b>0</b>	<b>240</b>			

## Appendix 3.2.

### *Elective subjects*

- Advanced taxonomy (lectures)
- Advanced taxonomy (practical training)
- Advanced veterinary anaesthesia
- Anaesthesia in exotic animal practice
- Analytical methods in ecology
- Anatomical background for clinical cases
- Anatomy and physiology of exotic animals
- Anatomy and physiology of fish
- Anatomy of domestic birds
- Andrology and assisted reproductive techniques.
- Animal welfare I.
- Application possibilities of data-analysis in the field of food safety
- Applied clinicopathological diagnostics
- Aquaculture hygiene
- Arthropod vectors
- Arthropod vectors and vector-borne pathogens of veterinary and public health importance in Europe
- Assisted reproduction techniques
- Basic neuroradiology
- Basic neuroradiology
- Basics of grassland management
- Basics of livestock populations (practical training)
- Basics of livestock populations (lecture)
- Basics of scientific publication
- Basics of veterinary cardiology
- Behaviour disorders and therapy 1. - Dog and cat
- Behaviour disorders and therapy 2. - Dog and cat
- Behavioural ecology (lectures)
- Behavioural ecology (practical training)
- Biology and medicine of amphibians and reptiles
- Biomechanics, prevention, rehabilitation in horses
- Breeding and nutrition of fur bred animals
- Clinical endocrinology
- Clinical Hungarian I.
- Clinical Hungarian II.
- Companion animal dietetics
- Comparative forensic veterinary medicine
- Comparative human and animal nutrition
- Complexity in veterinary medicine: veterinary public health
- Dentistry of carnivores
- Dermatology of dogs and cats
- Development of the organs
- Diagnostic ultrasound in equine medicine
- Ecology and hygiene of game meat production
- Entomology (lectures)
- Entomology (practical training)
- Environmental chemistry and ecotoxicology
- Equine dietetics
- Equine exercise physiology and sports medicine
- Equine ophthalmology
- Exotic mammal medicine
- Exotic zoology
- Food technology in practice
- Fundamentals of hunting
- Game breeding and nutrition
- Game management
- Gene technology
- General mycology
- Genetic engineering
- Health care of pet rabbits
- Horse breeding
- Hunting guns and ballistics (lectures)
- Hunting guns and ballistics (practical training)
- Hunting law, ethics, and economics
- Incubation of poultry eggs
- Infectious diseases of dog and cat
- Introduction into histology (lecture)
- Introduction into histology (practical training)
- Introduction to bioinorganic chemistry
- Journal club
- Journal club 1.
- Journal club 2.
- Library informatics

- Life history strategies
- Medical Latin II.
- Medical microbiology and infectology
- Medicinal plants
- Mendelian genetics of domesticated animals (lecture)
- Mendelian genetics of domesticated animals (practical training)
- Microscopic anatomy (lecture)
- Microscopic anatomy (practical training)
- Microscopic photo techniques 1.
- Microscopic photo techniques 2.
- Modelling (lecture)
- Modelling (practical)
- Molecular cell physiology
- Molecular ecology (lecture)
- Molecular ecology (practical training)
- Molecular methods (lecture)
- Molecular methods (practical training)
- Molecular physiology of the cell
- Molecular tumour biology
- Molecular zoology
- Mycology
- Nature preservation and animal welfare legislation
- Nursing practice 1.
- Nursing practice 2.
- Nursing practice 3.
- Nursing practice 4.
- Nursing practice 5.
- Nursing practice 6.
- Operation techniques - cadaver - bone surgery
- Operation techniques - cadaver / soft tissues
- Organic animal production
- Parasitic zoonoses
- Parasitology and parasite ecology (lectures)
- Parasitology and parasite ecology (practical training)
- Pathobiochemistry
- Periparturient predisposing factors in cattle
- Petfish diseases
- Pharmacotherapy
- Physiology of the nervous system
- Practical animal welfare studies
- Practical aspects of serological testing of infectious diseases
- Practical problems of the large-scale poultry farms
- Practicals in genomics 1.
- Practicals in genomics 2.
- Precision digital processes in dairy and beef farms
- Problem-based case discussions in equine internal medicine
- Problem-oriented approach to small animal internal medicine cases
- Professional practice
- Programming
- Prudent use of antimicrobial drugs
- Quantitative veterinary epidemiology
- Radiobiology for veterinarians
- Redox chemistry in biological systems
- Research planning (lectures)
- Research planning (practical training)
- Risk analysis of food safety
- Scientific presentations (lectures)
- Scientific presentations (practical training)
- Secondary metabolic products of plants
- Sexual reproduction in living organisms
- SH Hungarian A1/2
- Small animal clinical MR imaging
- Small animal electrocardiography
- Small animal ophthalmology in the practice
- Special topics of digestion of ruminants
- Statistical data analysis using regression methods
- Statistical modelling of experimental and observational data (lectures)
- Statistical modelling of experimental and observational data (practical training)
- Student essay of physiology
- Sustainability aspects in the food chain
- Tasks of the veterinarian in establishing food chain safety
- The colic horse
- The effects of predisposing factors during the periparturient period in cattle
- The physiological basis of cardiology

- Trophy evaluation and management
- Ultrasound diagnostics in small animals
- Veterinary English
- Veterinary neonatology
- Veterinary X-ray anatomy
- Wildlife ecology
- Wildlife ecology & management
- Wildlife health
- Wildlife zoology
- Writing scientific publications
- Zoo- and wild animals' medicine
- Zoonoses
- Zoosystematics (lectures)
- Zoosystematics (practical training)

## Appendix 3.3.

### *Optional subjects*

- Alternative methods in veterinary medicine
- An introduction to python programming
- Animal paleophysiology
- Animal protection
- Animal welfare ethics
- Animals in the fine art
- Atomspectroscopic methods in the determination of soil, water, fodder, biological samples
- Basic Hungarian 1.
- Basic Hungarian 2.
- Basic of Natural Science
- Basics of communication
- Bayesian population analytic methods (lecture)
- Bayesian population analytic methods (practical training)
- Bioacoustics
- Brain-mind theories and the logic of research in natural sciences
- Breeding and health care of insects and other invertebrate animals
- Breeding of exotic animals
- Carcinogenic and anticarcinogenic plants
- Cattle herd health
- Cell biology
- Circular economy approach in large-scale farms
- Clinical physiology
- Communication for vets
- Companion animals in human medicine
- Data analysis (practical training)
- Digitalization in veterinary practices
- Dog and cat breeding
- Drug innovation: Research and development process of drugs in human and veterinary medicine
- Drug preparation
- Edible and poisonous mushrooms
- Edible wild plants
- Endangered plant species
- Environmental physiology
- Exercise and sport pharmacology
- Feeding and nutrition of ornamental fishes, exotic birds, reptiles and small mammals
- Feeding exotic reptiles, birds, and small mammals
- Fish breeding and nutrition
- Forensic animal genetics
- French for beginners 1., 2.
- Fundamentals of scientific writing
- General and specific limnology
- General English (elective)
- German for beginners 1., 2.
- German language brush-up course+academic communication 2,
- Grassland management
- History of veterinary medicine
- Hot topics of human nutrition
- How to start our practice - practical advise
- Human animal relationship 1., 2.
- Human first aid
- Hungarian A1/1, A1/2, A2/1, A2/2
- Hungarian history and culture
- Hungarian language
- Insects as food and feed
- Intro to learning techniques & strategies in medical school
- Introduction to cell culture techniques
- Introduction to GIS
- Invasive vertebrate species
- Laboratory animal science
- Learning techniques & strategies in medical school
- Library informatics
- Life skills for vets
- Management of innovation 1., 2.
- Management of zoological institutions keeping wild animals in human care
- Medical Latin 1., 2.
- Medical profession & empathy
- Modern materials in life sciences
- New forms and technics of knowledge transfer - practical approach
- Nutrition and feeding of zoo animals I. Herbivorous mammals

- Optional English language 1., 2., 3., 4., 5., 6.
- Optional German language 1., 2., 3., 4., 5., 6.
- Optional Italian language 1., 2., 3., 4., 5., 6.
- Optional Spanish language 1., 2., 3., 4., 5., 6.
- Philosophy of science
- Physiological basics of communication
- Physiology of learning
- Plant secondary metabolites
- Poisonous garden and indoor plants
- Practical innovation
- Practical laboratory animal science
- Presentation skills development training
- Proper behaviour and etiquette
- Proper diet and gastronomy
- Protein modulators in the drug therapy
- Psychopharmacology: How to treat mental and behavioural disorders
- Rabbit and rodent dentistry
- Role of traditional ethnoveterinary knowledge and practices in the 21st century
- Secondary plant metabolites
- Selected chapters of human anatomy
- Self-knowledge and personal development training
- Small animal MR imaging
- Spanish for beginners 1., 2.
- Special embryology
- Special ruminants
- Stress management in practice
- Terrestrial carnivore mammals
- The basic knowledge of filmmaking
- The botany of distilled drinks
- Vertebrate invasions
- Veterinary clinical genetics
- Veterinary comparative pharmacokinetics and drug metabolism
- Veterinary English 1., 2., 3., 4., 5., 6.
- Veterinary German 1., 2., 3.
- Veterinary photography
- Veterinary practice leadership training
- Veterinary virology in English
- Wild animals under human care

## Appendix 6.1

### *The Central Library in numbers*

FTE of part-time employees	0.5		
Number of full-time employees	9		
Number of hardcopy journals	25		
Number of full access electronic journals	directly subscribed: 21 titles, and several thousands (CUP, Science Direct, Springer Link + Nature journals, Wiley Online Library Full Collection and CAB Abstracts with Full Text) via a national consortium		
Availabilities for online literature search	15 computers many relevant databases		
Availability of textbooks	Hungarian-, German- and English-language textbooks are stored in some copies		
Number of seats	196 (including 15 computer places)		
Library opening hours:	during term-time	during exam period	during vacations
Reading room	Monday: 8:30–18:00 Tuesday: 8:30–18:00 Wednesday: 8:30–18:00 Thursday: 8:30–18:00 Friday: 9:00–17:00 Saturday: - Sunday: -		Monday: 8:30–12:30 Tuesday: 12:30–16:00 Wednesday: 8:30–12:30 Thursday: 12:30–16:00 Friday: 8:30–12:30 Saturday: - Sunday: -
Study room	Monday: 7:00 – 22:00 Tuesday: 7:00 – 22:00 Wednesday: 7:00 – 22:00 Thursday: 7:00 – 22:00 Friday: 7:00 – 22:00 Saturday: 7:00 – 22:00 Sunday: -		Monday: - Tuesday: - Wednesday: - Thursday: - Friday: - Saturday: - Sunday: -
Indicate how the facilities are used by students (data from 2022)			
- <i>visitors</i> :	30,069		
--- reading rooms in	23,544 persons		
--- library homepage	6,525 visitors		
- <i>searches</i>	50,966		
--- databases	45,738 (searches or downloaded)		
--- OPAC	5,248		
- <i>participants</i> in trainings	640		





