Faculty of Veterinary Medicine and Animal Science

Swedish University of Agricultural Sciences (SLU)

Self-Evaluation Report 2024

Swedish University of Agricultural Sciences, SLU
ESEVT SOP 2023 | 8 June 2023
18th January 2024

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Introduction

The Swedish University of Agricultural Sciences (SLU) was formed in 1977 following the merger of Sweden's agricultural, forestry and veterinary colleges, the Veterinary School in Skara and the Forestry School in Skinnskatteberg. The veterinary and forestry colleges were moved to Ultuna, Uppsala, where the main campus of the agricultural college was already located. However, the Veterinary School dates back to 1775, when it was established in Skara. The school was the first establishment in Sweden to teach veterinary science and the sixth in Europe. It was later moved to Stockholm, before arriving in Uppsala in 1977.

SLU is the only university in Sweden to offer veterinary education. The Veterinary Medicine programme strives to create highly competent graduates with a solid foundation in relevant, research-based and cutting-edge education provided by highly qualified academic and clinical staff. It is our objective to deliver highly qualified professionals with the essential skills society requires for animal and public health, animal welfare and 'one health'.

The Faculty of Veterinary Medicine and Animal Science (VH Faculty) offers excellent conditions for efficient education and research at the Centre for Veterinary Medicine and Animal Science (VHC), the Veterinary Teaching Hospital (VTH; *University Animal Hospital – UDS*) and the Swedish Livestock Research Centre in Lövsta, roughly 20 kilometres north of the main SLU Uppsala campus. The core mission of VTH is to serve as a key infrastructure for research and clinical teaching. The Faculty is led by the dean who is a doctor of veterinary medicine (DVM). The director of the university animal hospital and the vice dean for education are also DVMs.

Between 2012 and 2022, VTH was placed under the direct management of the vice-chancellor. However, for academic and efficiency purposes, the VTH was re-integrated into the VH Faculty on 1 January 2024. This full integration provides an optimal environment for education and research and is in line with recommendation presented by the ESEVT visitation team in 2017. We are pleased that VTH has now re-joined the VH Faculty. The commitment to veterinary education continues to be the focus of the veterinary education establishment, and this focus has been strengthened considerably thanks to the shared visions held by faculty and VTH regarding veterinary education. In early 2022, the vice dean for education was appointed assistant director of the VTH to support and ensure close ties between the VTH and the educational needs of students and staff.

Since the 2017 ESEVT evaluation, several other significant actions have been taken relating to the further development of veterinary education and research.
These include:

- The Together Project (*Tillsammansprojektet*) aimed at strengthening collaboration between the VH Faculty and VTH to standardise the strategy for

education, clinical research and specialisation training. This led to the vice-chancellor's decision to initiate the process of re-integrating the VTH into the VH Faculty.

- Since the EAEVE evaluation, 2017 the curriculum VP17 has withdrawn the option for students to take elective courses in their final clinical semester. This was to ensure that sufficient time had been allocated to basic topics and skills, expanding clinical training at the VTH, and introducing a two-week clinical placement at the student's choice of veterinary workplace. The VP17 delivers approximately 250 more teaching hours compared to the programme EAEVE evaluated in 2017. This is one measure taken to support student learning and reduce stress. The new curriculum introduced 2023 (VP23) further focuses on professional development and earlier contact with animals, as well as creating a sustainable teaching and learning environment for students and staff.
- The 2023 expansion of the Veterinary Medicine programme at SLU, from 100 to 145 admitted annually.
- Adjustments during the 2020–2022 global pandemic: quite uniquely, we were still able to continue providing most clinical education activities on campus, but in smaller groups and implementing higher biosecurity measures. This came at a higher financial and labour cost due to increased teaching time, but ensured adequate education for the students was maintained. In contrast, conventional lectures and seminars were mostly replaced with online teaching during periods where disease transmission was most intense. The experiences gained from delivering education in new ways have influenced post-pandemic teaching.
- Expansion of the clinical training centre (CTC), with increased focus on clinical skills training on artificial models and cadavers as mandatory preparation for subsequent training on live animals.

Most of the above-mentioned measures are presented in further detail in different areas of this report. Overall, they indicate that, during the almost eight years since the last EAEVE evaluation, SLU has continuously developed its veterinary education and research. As a government-funded university, we benefit from the national admissions system, the requirements for ensuring equal opportunities, national quality assurance assessments, and fairly stable funding. The main concern is always the gradual decrease in the net value of government revenues. Due to increases in salaries and other costs that are not fully compensated for by governmental funding, the resources available for education and research have gradually declined. Despite this, we have increased programme hours since the 2017 evaluation in order to support student learning, reduce the time spent of self-study and limit their perceived stress.

The most important goals for the veterinary medicine programme involve:

- delivering high quality education in a professionally attractive environment;
- developing teaching and education to meet future needs and international recommendations;
- performing and disseminating highly relevant research across all fields of veterinary science in collaboration with other universities, and stakeholders;

- providing society with highly qualified professionals to support animal and human health.

This self-evaluation report intends to provide a clear and accurate description of veterinary education at SLU. The report was prepared by a core group of people and collated by Professor Henrik Rönnberg. This group will also be guiding the ESEVT team during the visit under the lead of the liaison officer Professor Ivar Vågsholm. The work has been done in consultation with University Administration, the University Library and many other colleagues that provided facts and opinions on matters such as education, research and the services available at the University Animal Hospital. The authors wish to thank all those who contributed for their readiness and thoroughness.

Uppsala, 18th January 2024

Rauni Niskanen,
Dean

Johanna Penell,
Vice Dean for Education

Pär Forslund
Deputy Vice-Chancellor, Responsible for Education

Version and date of the ESEVT SOP valid for the visitation: ESEVT SOP 2023, as amended 8 June 2023.

Area 1. Objectives, Organisation and Quality Assurance Policy

Standard 1.1: The VEE must have as its main objective the provision, in agreement with the EU Directives and ESG Standards, 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 the ESEVT Standards.
The mission of VH Faculty is:

- The Faculty's work including the VTH is based on the best interests of the animals, anchored in the United Nations sustainable development goals (SDGs). We are responsible for research, education and collaboration on animals, including the care, feeding, breeding, health and welfare of animals, and our work is characterised by an evidence-based approach. Teaching at VH Faculty is anchored in high-quality research. SLU is ranked high in various ranking systems, e.g. 7th in EU in veterinary medicine (2nd in EU, Edurank.org : Veterinary Medicine)
- The Veterinary Medicine program aims to provide students with veterinary medicine education covering animal health care for individual animals and groups of animals, focused on animal species in human care. This includes preventive health, euthanasia, slaughter, infection control, safe food production and veterinary public health within the concept of One Health. An important part of the training is to provide knowledge about safe animal-derived food, which includes the breeding of farm animals and the production, distribution and handling of food.
- The Veterinary Medicine program is focused on providing skills according to Day One Competences. There is a firm commitment by the Vice-Chancellor at SLU and throughout the entire organisation to embrace all the latest ESEVT Standards.

At SLU, our work is guided by four basic principles. These provide guidance in everyday life by describing the starting point for our activities, for contacts with the outside world, and for how we behave towards each other and others:

- Scientific approach: a free search for new knowledge is the core of a university's activities. At SLU, we safeguard scientific integrity and good research practice.
- Creativity: creating new knowledge requires creative thinking and challenges to entrenched ways of thinking. At SLU, we are convinced of the importance of establishing a creative environment and ensuring that this is encouraged by openness, freedom within a clear framework, playfulness and making the most of differences.
- Openness: collaborating with others, both internally and externally at national and international level, and being a part of a community are essential for the success of activities that have large elements of individuality and academic freedom. SLU's activities are characterised by curiosity, contact-creating communication and accessibility.
- Responsibility: the driving force of individuals and groups and the desire to develop and achieve results are key to a university's success. We are all part of each other's work environment, should be considerate and take responsibility so that individuals and others have satisfaction and commitment.

The education also aims for students to develop a professional and scientific approach in their working life. The students are made aware of the responsibility that the veterinary professional role entails in terms of communication with animal

owners, employees, businesses, authorities and society in general. The program includes training in written and oral presentations, independent searches for knowledge with critical source reviews, and the ability to analyse and synthesise. The students also learn to make assessments of issues that connect veterinary medicine to human medicine, biology, animal science and food science.
The Veterinary Medicine program ends with an independent Master's project (30 ECTS credits) where students are able to apply their in-depth knowledge, abilities and approach to a research question in veterinary medicine, both experimentally and theoretically.
The program is taught in Swedish, with some teachers speaking English in a transition period of 2-4 years while they learn Swedish. A large proportion of the teaching takes place in groups and much of the scheduled time is compulsory. The majority of assigned literature is in English.
A well-functioning study environment is characterised by openness, equality and an inclusive approach. SLU works actively for gender equality and equal conditions, which promotes a climate that takes advantage of the diversity brought by employees' and students' different backgrounds, life situations and skills.
The curriculum is based on European Directives (2005/36/EC, 2013/55/EU) and the legislation of the Swedish Board of Agriculture of April 2nd, 2009, on the activities within animal health care (SFS number 2009:302). The research-based training program covers all fields of basic, preclinical and clinical education. No specialist tracks in the veterinary program are available in the core curriculum. However, students' choice of elective subjects reflects their particular field of interest. Moreover, extramural holiday practices provide students with the opportunity to work with their preferred animal species. VH Faculty has an efficient quality assurance system (for details, see description for Standard 1.4).

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 program, in compliance with the ESEVT Standards.

1.2.1. General information

Table 1.2.1. Details of the VHF

Name:	Faculty of Veterinary Medicine and Animal Sciences (VHF)
Address:	SLU, Almas allé 8, SE-750 07 Uppsala, Sweden
Telephone:	+46 18 67 10 00
E-mail:	Dekan.vh@slu.se
Website:	https://www.slu.se/en/faculties/vh
Head of the Faculty:	Dean: DVM PhD Assoc Prof Rauni Niskanen Deputy Dean: PhD Prof Dirk Jan de Koning Vice-Dean for Studies: DVM PhD Assoc Prof Johanna Penell Vice-Dean for Research Education and Equality and Diversity: DVM PhD Prof DipECVIM-CA (onc) Henrik Rönnberg Vice-Dean for Collaboration: DVM PhD Prof DipECAR Renee Båge Vice-Dean for Infrastructure: PhD Prof Johan Dicksved

Persons responsible for the veterinary curriculum:	Vice-Dean for Studies: DVM PhD Assoc Prof Johanna Penell Program Director: DVM PhD Assoc Prof Helene Hamlin Deputy Program Director: DVM PhD Karin Vargmar
Head of Vet Teaching Hospital (VTH)	PhD Marianne Grauers (DVM PhD Assoc Prof Bodil Ström-Holst from Feb 2024) Deputy director: DVM Mia Svensson Assistant director: DVM PhD Assoc Prof Johanna Penell
Head of Companion Animal Clinic and Ambulatory Clinic:	DVM Jenny Hedenby
Head of Horse Clinic:	DVM Mia Svensson
Head of Ruminant Clinic:	DVM PhD Prof DipECBHM Jean-Francois Valarcher
Head of VHF Farm management:	PhD Assoc Prof Mårten Hetta

VH Faculty is part of the Swedish University of Agricultural Sciences, SLU
Address: SLU, Almas allé 8, SE-750 07 Uppsala, Sweden
Telephone: +46 18 67 10 00
Website: **www.slu.se**
E-mail: **registrator@slu.se**

SLU brings together people who have different perspectives, but share the same goal: to create the best conditions for a sustainable, thriving and better world. SLU is an excellent international university with research, education and environmental assessment within the sciences for sustainable life. SLU is ranked among the four leading universities in Sweden (STINT) and the third leading agricultural university globally (QS rankings - https://www.topuniversities.com/university-rankings/university-subject-rankings/2021/agriculture-forestry).
SLU's vision is to: 'play a key role in development for sustainable life, based on science and education'.
SLU's mission is to 'conduct education, research and environmental monitoring and assessment in collaboration with society at large. The focus is on the interaction between humans, animals and ecosystems and the responsible use of natural resources, to contribute to sustainable societal development and good living conditions on our planet'.
Its principal sites are in Alnarp, Umeå and Uppsala, but SLU has ongoing activities at research stations, experimental parks and educational establishments throughout Sweden.
SLU comprises four faculties, with around 4000 students in total, and is authorised to confer undergraduate degrees in 24 scientific disciplines and doctoral degrees in 26 scientific disciplines. The University employs approximately 1600 academic staff, including around 200 full professors and more than 1700 individuals holding a PhD degree.
Official authorities overseeing the Faculty of Veterinary Medicine are:
The Board of SLU
Chairman Joakim Stymne, Director-General
Representatives in the Board elected by the student unions
Elliot Eriksson, Chair Sluss, Joint Committee of Student Unions at SLU
Ida Segesten, First advisor Sluss, Joint Committee of Student Unions at SLU
Carl Lehto, doctoral student
University Management
Vice-Chancellor: Prof. Maria Knutson Wedel, PhD
Deputy Vice-Chancellor (responsibility for education): Prof. Pär Forslund, PhD

Pro Vice-Chancellor, collaboration and environmental monitoring and assessment: Assoc. Prof. Anna Lundhagen, PhD
Pro Vice-Chancellor, international relations: Assoc. Prof. Ylva Hillbur, PhD
Chief Operating Officer: Martin Melkersson, PhD
Secretary to the Vice-Chancellor: Pia Schultz

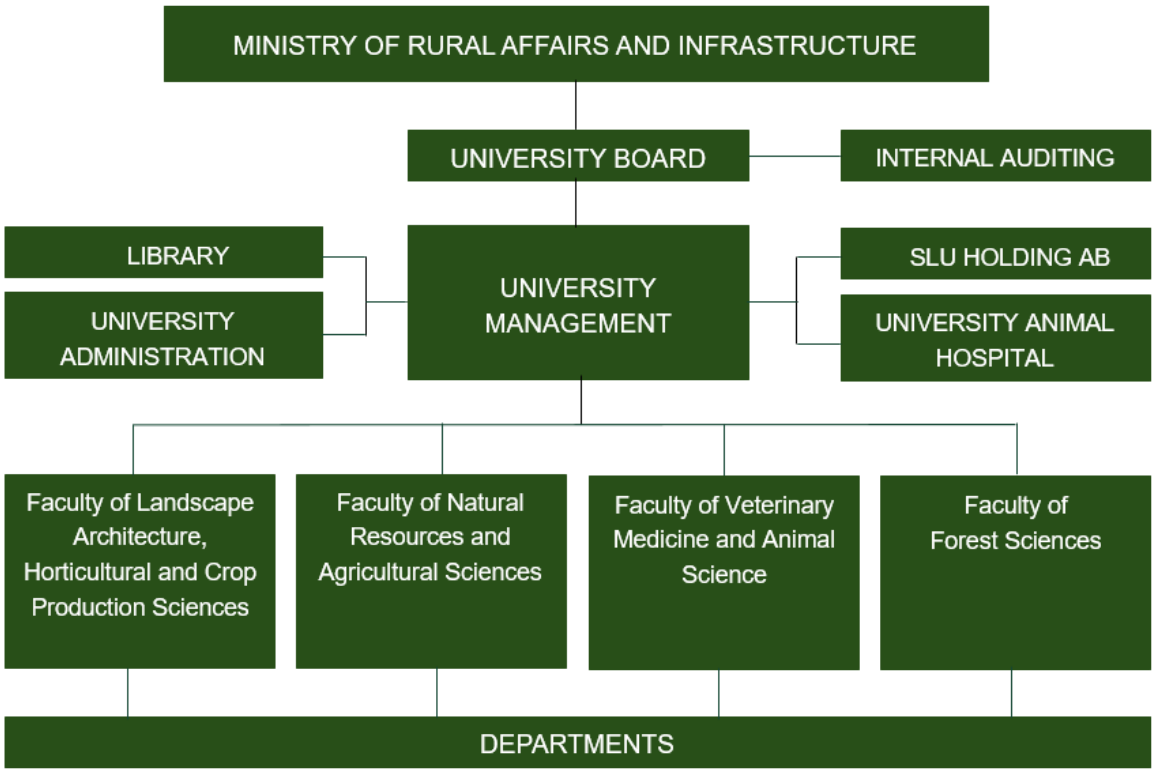


Figure 1.2.1: Gross organogram of the Swedish University of Agricultural Sciences (SLU) until January 1st, 2024.

1.2.2. Organisation of the VEE and description of the decision-making process

Under the Vice-Chancellor, the Dean ("dekan") is the Chief Executive of the Faculty responsible for the planning and administration of activities at VH Faculty. This is a full-time position. The Dean and Deputy Dean are appointed by the Vice-Chancellor, following a nomination by the Faculty's Electoral Assembly.

The Faculty's highest decision-making body is the Faculty Board, which is elected every three years. It is supported by a number of committees and subcommittees, which act as advisory and preparatory bodies for the Faculty Board. Members of the Faculty Board are elected by the Faculty's Electoral Assembly, while members of other committees and subcommittees are appointed by the Faculty Board or by the Dean.

The Dean chairs the Faculty Board, with eight more elected representatives from the academic staff and three from the student unions (including PhD students). There are also two substitute members from the academic staff. Staff associations ("unions") are entitled to attend the Faculty Board meetings, but without voting rights. The Faculty Director and the Faculty Secretary are also present as non-voting attendees at the Board meetings.

One of the academic members of the Faculty Board is appointed Deputy Dean ("prodekan"). Additional Associate (Vice) Deans, currently four, are appointed by the Faculty Board: one responsible for first- and second-level studies, one responsible for third-level (PhD) studies and equal opportunities, one responsible for collaboration with third parties, and one responsible for research infrastructure. The

Dean, Deputy Dean and Associate Deans, a student delegate and the Faculty Director form the Faculty Board Executive Committee, which has an advisory function to the Dean. The Faculty Office gives administrative and secretarial support to the Dean, Vice-Deans and the Committees.
The Higher Education Act states that students have the right to be represented in the bodies that take decisions affecting their studies. This means that students (first, second and third cycle) are represented in most VH Faculty organs (and also on the Board of SLU). The veterinary profession, the industry, and government and non-government organisations are represented in some of the Faculty organs, e.g. in the Committee for Research and Extension headed by the Vice-Dean for Collaboration. The Head of Department ("prefekt") is the person responsible for planning and administration of scientific and educational activities at departmental level. The Head of Department is appointed by the Dean.

Figure 1.2.2. Organisational structure diagram for VH Faculty until January 1st, 2024.

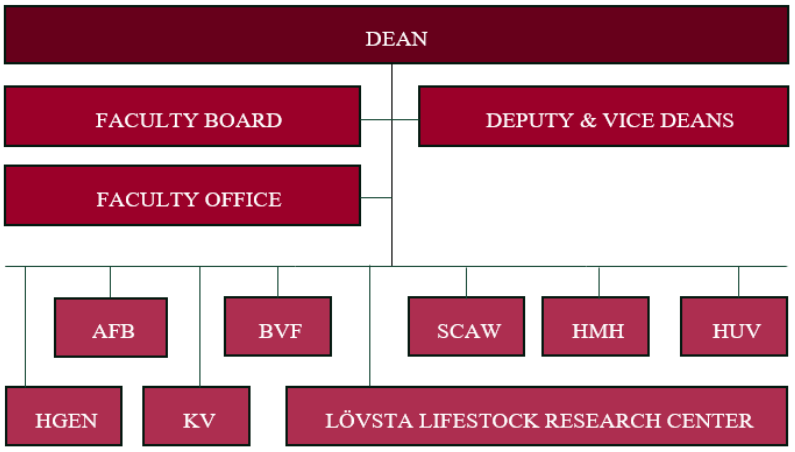


Table 1.2.2. Faculty Committees

No	Name	Composition	Function
1	VHF Faculty Board	Has eleven members. Eight members and two deputies are appointed by those entitled to vote within the faculty. Three members (as well as any deputies for these) are appointed by the student union - SLUSS.	The highest decision body of the VHF with the Dean as chair. Deciding budget and select the higher academic positions available and decide the final candidate on the suggestion of the Academic Appointments Board. It also decides the faculty strategy.
2	The Program Board for Education (PN-VH)	Consists of at least four and at most seven teaching members and three members appointed by the student union - Sluss. Four of the members and group substitutes are appointed by the VHF faculty board from among the faculty's teachers and also appoints one of the four teachers as chairman. Other faculty boards at SLU may each appoint one teacher as a member of PN-VH.	Improvement and evaluation of the curriculum as well as govern the examinators at the faculty.
3	The Research Education Board (FUN)	Consists of seven ordinary members. The committee appoints a vice-chairman from within. The chairman, four members and one deputy are appointed by VHF Faculty Board. Two members and one deputy are appointed by the student union, SLUSS.	to be responsible for the education at postgraduate level being carried out in accordance with laws and regulations as well as guidelines decided by the vice-chancellor (delegated from the faculty board),
4	The Docent (Associate Professor) Board	Consists of five members. The chairman, three members and four group deputies are appointed by the VHF Faculty Board following the proposal by the dean. A member with a personal deputy is appointed by the student union - SLUSS.	to appoint docents in accordance with the guidelines established by the vice-chancellor (delegated from the faculty board), and to organize opportunities for public docent lectures.

5	Academic Appointments Board	Have five or seven members, of which four (six) including the chairman are appointed by the Faculty Board after a proposal by the dean. One member and one deputy are appointed by SLUSS for a term of office of one year.	to, in those cases where expert review is needed, assess and make proposals to the vice-chancellor in cases concerning the employment of professors, visiting professors and adjunct professors in accordance with what is more clearly stated in the employment regulations.
6	Gender equality and equal opportunities committee	Consists of the dean or the person the dean appoints (chairman) and the additional number of members the dean decides, but at least six people. Two of the members are appointed by SLUSS.	to propose measures in matters of equality and equal opportunities, e.g. in the form of action plans.

Dean's representatives:

- Faculty Erasmus+ Coordinator for Students' Mobility - International Mobility coordinator Dana Rocklin
- Faculty Erasmus+ Coordinator for Teaching Staff Mobility and Students' traineeships - Head of International Mobility Unit Emma Capandegui
- Faculty Supervisor for Students with Disabilities - Coordinator at the Unit for Student and Career Support Lena Swärd
- Faculty responsible for Student and Staff Equality - Equal opportunities administrative officer Malin Ekström
- Dean's Proxy for Student Scientific Groups - the Graduate School for Veterinary Medicine and Animal Science (GS-VMAS) at VH Faculty, Miia Riihimäki DVM PhD
- Head of Companion Animal Clinic and Ambulatory Clinic – DVM MSc Jenny Hedenby
- Head of Farm Animal at Lövsta Research Farm - Production manager Mats Pehrsson
- Head of Horse Clinic - Mia Svensson, DVM, Swedish specialist in equine diseases
- Faculty Labour Inspector - Christina Öberg (Animal clinic) Emma Bergenkvist (faculty)
- Dean's Proxy for Radiological Protection - Radiation safety experts and medical physics experts Alexander Englund and Adrian Moreno
- Dean's Representative for Animal Experiments - Coordinator of laboratory animal science Katarina Cvek MSc PhD and DVM MSc Sara Persson
- Animal Ethics Coordinator - Helena Röcklingsberg, Associate Professor in animal ethics

1.2.3. Departments/units/clinics and councils/boards/committees

The VEE is primarily located in Uppsala, with the Centre for Veterinary Medicine and Animal Science (VHC) at Campus Ultuna and the Swedish Livestock Research Centre 8 km east of Ultuna. There are also departments linked to the VEE in Skara and Röbäcksdalen. The scientific departments vary in size, from 30 to 125 full-time equivalent (FTE) positions. The VTH, which organisationally has not been part of VEE during the period between EAEVE inspections, has 150 FTE. On January 1st, 2024, VTH will again become part of the VEE.

The Department of Anatomy, Physiology and Biochemistry (AFB) consists of the Section of Anatomy and Physiology; the Section of Biochemistry; and the Unit of Equine Science. AFB currently has 40 employees. The research focuses on reproduction and tumour biology, allostasis, stress, exercise physiology, biomechanics and circulatory function, alternative protein sources, biomedicine with focus on nucleotide metabolism, protein structure and function.

The Department of Biomedical Sciences and Veterinary Public Health (BVF) has two sections; one including pathology, pharmacology, toxicology and immunology, and the other including food safety, virology, bacteriology, parasitology and epizootiology, with research and postgraduate studies in all subjects. BVF has around 90 ***employees*** in scientific and technical staff. All subjects taught at BVF are covered by the One Health – One Medicine umbrella.

The Department of Animal Environment and Health (HMH) employs 50 staff members. There are four research sections: Anthrozoology and Applied Ethology; Environment, Care and Herd Health; Ethology and Animal Welfare; and Production Systems. Two sections are located at Campus Skara and two at Campus Ultuna. HMH research involves relationships between housing, management, feeding, animal health, behaviour, animal welfare and environmental hygiene.

The Department of Animal Nutrition and Management (HUV) encompasses the main agricultural species, i.e. cattle, sheep, pigs and poultry, as well as reindeer, fish, horses and dogs. HUV employs 45 FTE. The research is focused on feed, nutrient metabolism and utilisation, and on the relationship between husbandry systems, animal welfare, health, behaviour and production for the species mentioned.

The Department of Animal Breeding and Genetics (HGEN) has four sections; Molecular Genetics; Bioinformatics; Quantitative Genetics; and Applied Genetics. HGEN employs 55 FTE. Research at HGEN covers DNA and its expression in nearly all domestic animal species and some of their pathogens, novel tools for bioinformatics and molecular breeding, new breeding approaches in livestock, and managing two national breeding programs of fish for aquaculture.

The Department of Clinical Sciences (KV) has five sections; Diagnostics & Large Animal Medicine and Surgery; Small Animal and Surgery; Ruminant Medicine & Veterinary Epidemiology; Reproduction; and Animal Nursing. The total number of employees is 125. KV is responsible for the majority of the residency training programs at SLU, in collaboration with VTH. Research areas include anaesthesiology and pain research; animal reproduction and udder diseases; clinical biomechanics; clinical neuroscience; clinical pathology; comparative and regenerative medicine; diagnostic imaging; endocrinology; equine medicine; porcine medicine; ruminant medicine; small animal medicine, odontology, soft tissue and orthopaedic surgery; veterinary nursing; veterinary epidemiology; and veterinary rehabilitation.

VH Farm management. On January 1st, 2023, management of the Swedish Livestock Research Centre at Lövsta and Röbäcksdalen dairy research facility in Umeå were merged into a common organisational unit. The new structure will enable better use of the livestock infrastructure in research and teaching at VHF.

The Swedish Centre for Animal Welfare, SCAW. According to a directive from the government, VH Faculty is responsible for this centre. SCAW has three primary functions within the area of animal welfare; to give expert advice, to support research, and to arrange education.

Swedish Scientific Council for Animal Welfare

The Scientific Council constitutes a risk assessment body for animal welfare, serving central competent authorities and other relevant organisations with science-based statements and opinions related to various animal welfare issues. The Council consists of scientists from SLU plus legal expertise appointed by the Dean of VH Faculty. The task of the Council is to identify, compile and evaluate scientific research on animal welfare and related issues, such as economics for production and work environment, on behalf of e.g. the Swedish Board of Agriculture, the National Food Administration and other stakeholders.

Research facilities are presented in Chapter 4.

Collaborative centres and projects. VH Faculty is engaged in a number of collaborative centres and interdisciplinary research projects, programs, networks, platforms and portals. These all collaborate with external partners.

Veterinary Teaching Hospital (VTH)
The VTH facilities are presented in detail in section 4.4.1.

Description of the formal collaborations with other VEEs
VH Faculty cooperates in the field of teaching and science with a number of foreign faculties of veterinary medicine. All universities listed within the EU are part of the ERASMUS and ERASMUS+ programs. SLU has different maximum allowances and a complete list can be found at https://slu.moveon4.de/publisher/2/eng
Select subject area – veterinary medicine
The 22 foreign universities currently formally cooperating with VH Faculty at SLU are listed below:

1. Austria-Veterinärmedizinische Universität Wien
2. Belgium-Universiteit Gent
3. Chile - Universidad de Chile
4. Denmark-Københavns Universitet
5. Estonia-Eesti Maaülikool
6. Finland-Helsingin Yliopisto
7. France-VetAgro Sup, Marcy l'Etoile
8. Germany-Christian-Albrechts-Universität zu Kiel
9. Iceland-Hólaskóli - Háskólinn á Hólum
10. Italy-Università degli Studi di Bologna 'Alma Mater Studiorum'
11. Italy-Università degli Studi di Milano
12. Italy-Università degli Studi di Padova
13. Latvia-Latvijas Lauksaimniecîbas Universitâte
14. Lithuania-Lietuvos sveikatos mokslų universitetas
15. Netherlands-Hogeschool Van Hall Larenstein
16. Norway-Norges Miljo-Og Biovitenskaplige Universitet
17. Poland-Szkoła Główna Gospodarstwa Wiejskiego w Warszawie
18. Poland-Uniwersytet Przyrodniczy w Lublinie
19. Poland-Uniwersytet Przyrodniczy w Poznaniu
20. Spain-Universitat Autónoma de Barcelona
21. Switzerland-Universität Bern
22. Switzerland-Universität Zürich

The name and degrees of the person(s) responsible for the veterinary curriculum and for the professional, ethical, and academic affairs of VTH are given in sections 1.2.2 and 1.2.3.

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

1.3.1. Summary of the strategic plan with SWOT analysis
The Development Strategy for VH Faculty for the period 2021-2025 was approved by the Faculty Board on December 16th, 2020 (SLU ID: SLU.ua 2020.1.1.1-3282). Adjacent to this, an Operations Plan was decided by the Dean on April 29th, 2021 (SLU ID: SLU.ua.2020.1.1.1-4661). The Development Strategy aligns with the University strategy, Decision by the SLU Board on September 24th, 2020 (SLU ua 2020.1.1.-3420), but clarifies specific parts for VH Faculty. As a result of the decision by the VH Faculty Board on October 18th, 2023, VH Faculty's

Development Strategy for 2021-2025 (SLU ID: SLU.ua 2020.1.1.1-3282) and Operations Plan (SLU ID: SLU.ua.2020.1.1.1-4661) will also automatically apply to the operations of VTH. The Operations Plan contains specific amendments and clarifications to focus on matters at VTH. The strategic goals defined in this document are:

Systemic perspective on the circular food system

VH Faculty invests in long-term, interdisciplinary research for the development of circular food systems where animals, humans and the environment interact and the One Health perspective is central. Through a transdisciplinary approach, the SustAnimal collaborative centre will increase knowledge about the role of food-producing animals in future sustainable food production and Swedish agriculture. VH Faculty's interdisciplinary collaboration with Uppsala University is expanded through long-term investments in the Uppsala Diabetes Centre and the Uppsala Antibiotic Centre.

One Health

The collaboration between various scientific disciplines and a One Health approach is central to VH Faculty. The Faculty invests in comparative, interdisciplinary and translational research on diseases shared by humans and animals, on research on antimicrobial resistance and on food safety. The Faculty is also developing the future platform 'SLU Future One Health' to meet challenges in all these areas.

Digitalisation

Digitalisation offers VH Faculty's subject areas new research perspectives, from bioinformatics at the molecular level to automated systems and analysis of large amounts of data on farms. The Faculty ensures access to data from e.g. Basreg (digital infrastructure for the research farms), the Gigacow project (digital infrastructure based on 15 commercial dairy farms) and NAVEDA (database with veterinarian patient journals). VH Faculty encourages research projects that promote digital development of animal husbandry, animal welfare and food safety, infection tracing and the profitability of agriculture. The digital tools used in teaching are similar to those that students can expect to use in their future careers.

One SLU

VH Faculty works inclusively and benefits from the fact that its activities are located throughout Sweden. Competence, cooperation and collaboration, gender equality and equal treatment are fundamental to making VH Faculty successful. The research facilities are unique research and teaching platforms and in future will be coordinated, profiled and communicated according to a common strategy and common goals. In the amended Development Strategy and Operations Plan, the following was concluded regarding VTH:

VH Faculty has prioritised the following activities in animal health care for VTH, taking into account the Faculty's Development Strategy and Operations Plan:

* Pedagogical training of all clinical staff in animal health care who are in some way, or will be, involved in teaching within the Veterinary Medicine and/or Veterinary Nurse program.
* Staff in animal health care must work with at least two of three areas: clinical activities, teaching and research.
* When recruiting staff for the animal hospital, the possibility of financing the post with funds both from the animal hospital and from government grants for the implementation of clinical training should always be considered. Where appropriate, research funds can also be used.
* Medical records and data management from animal health care must maintain at least the same quality as research data at SLU.

The main achievements and issues concerning the implementation of this strategy are presented in section 1.3.2.

The strategy for SLU and the development strategies and operations plans for all its different faculties are publicly available. For VHF documents: https://internt.slu.se/en/organisation--styrning/mission-vision-values-objectives/slus-strategy2021-2025/vh-fakultetens-strategiarbete/

SWOT-analysis – VH Faculty

STRENGTHS

- Attractive and high-quality programs (Veterinary Medicine, Veterinary Nurse)
- Teaching has strong connection to research
- Few students per teacher
- Vast majority of students perform well
- Motivated teachers
- Broad palette of vital subjects for sustainability
- Stronger academic clusters with the new organisation from January 1st, 2024
- Modern and state-of-the-art infrastructure
- Fruitful collaboration with private industry and public authorities

WEAKNESSES

- Clinics under-staffed
- Too few teachers with experience in animal husbandry
- Insufficient time for individual competence development for teachers
- Many subjects with small critical mass

OPPORTUNITIES

- Public interest in animals and the environment
- The government's national food strategy
- Agenda 2030 and the many areas covering VH Faculty topics
- Collaborations with other universities on sustainability and life science
- Increase fundraising, as VH Faculty has many subjects of general interest in society
- Stronger academic environments with fewer large departments and re-integration of VTH
- Increased number of industrial PhD students

THREATS

- Other universities with similar programs (not valid for the Veterinary Medicine program)
- Low interest in food-producing animals
- National agriculture industry under financial pressure
- Research funds mostly three-year, whereas a PhD project needs four-year funding
- Difficult to achieve financial balance at VTH
- Animal rights lobby questioning veterinary education
- Several concurrent organisational transitions
- Succession of senior staff – challenges recruiting professors and senior lecturers.

1.3.2. Summary of the operating plan with a timeframe and indicators of achievement of its objectives

Implementation of the Operations Plan defined by the Development Strategy for VH Faculty 2021-2025 is presented in Table 1.3.2.1.

Table 1.3.2.1 The implementation of the operating plan defined by the strategy for the VHF:s development for the years 2021 – 2025. Strategy decision 2020-12-16, SLU ID: SLU ua 2020.1.1.1-3282.

No	Planned activities	Evaluation of the plan's implementation as of December 31, 2023
Focus area 1: SLU:s next step for sustainable development		
1	Provide continuous education for staff: Open PhD course Primary production of animal source food - systems perspective and assessment of environmental sustainability	Completed, ongoing
2	Faculty coordination with SustAinimal	Ongoing
3	Present a proposal to VINNOVA for VHF-infrastructures as a national resource	Completed (rejected)
4	Discuss infrastructure collaboration with *Lantmännen* (an agricultural cooperative owned by 18 000 farmers)	Completed
5	Stimulate and facilitate cross disciplinary collaborations	Ongoing (Future OneHealth, UDC, CRU, UAC)
Focus area 2: SLU in a digital society		
1	Increased use of e-learning in basic education	Accelerated during covid, ongoing central resources (EPU)
2	Evaluate a remote learning version of the animal nursing program	2024
3	Offer workshops in data management for researchers	Library (DCU) responsible
4	Develop and increase the usage of our data infrastructure	2024 (Basreg, gigacow)
5	Strengthen national and international collaborations related to digitalisation within our field	Initiated through faculty funding of collaboration projects.
Focus area 3: One SLU		
1	Participate in the "Togetherness" project	Completed
2	Support the departments in ensuring that all academic staff are given enough time for research and professional development.	Ongoing through department-faculty dialogues
3	Continually review and update the equal treatment plan	Ongoing, regularly reported.
4	Review and evaluate the use of the lab-facilities at the faculty	2024-2025
5	Provide career seminars for PhD-students	Ongoing (1-2/y)
6	Strengthen the role of researcher/teacher	Initiated
VHF focus education: The education programs at VHF are attractive and important for a future with sustainable animal production		
1	Achieve European accreditation of the veterinary program	Ongoing
2	Start the process of accreditation of the animal nursing program through ACOVENE	Initiated
3	Increase the amount of practical training at our teaching farms for all our students.	Implemented in the new Vet program from 2023. Bus to Lövsta running since 2023.
4	Work for increased awareness of our programs and the careers they lead to	Initiated, communication staff increased 2023
VHF focus research: Our research is done in collaboration with external collaborators, is nationally and internationally competitive and is funded to at least 60% by external grants		
1	Initiate at least one large external cross disciplinary research project in collaboration with an external partner	Ongoing (SET, Fundraising, GO)
2	Develop PhD courses at SLU or other universities	Completed (GS-VMAS)
3	Support the departments by partially funding PhDs and postdocs	Ongoing (several projects supported)
4	Clarify the expectations of each academic position regarding research and teaching.	Ongoing through Faculty-department dialogues.
5	Develop a strategic academic recruitment plan based on current and projected needs	Completed (Updated every 3 y)
6	Support researchers to participate in the EU-grant process both as reviewers and applicants.	Started 2021

Standard 1.4: The VEE must have a policy and associated written procedures for the assurance of the quality and standards of its programs and awards. It must also commit itself explicitly to the development of a culture which recognises the importance of quality, and QA within the VEE. To achieve this,

the VEE must develop and implement a strategy for the continuous enhancement of quality.
The VEE must have a policy for academic integrity, i.e. the expectation that all staff and students act with honesty, trust, fairness, respect and responsibility.

Previous international and national evaluations
A summary of evaluations since 1990 is presented in Appendix 1.4.
A new national quality assurance system
In 2017, the Swedish Higher Education Authority (UKÄ) introduced a new model for evaluation of the quality of higher education which included an evaluation of the higher education institution's (HEI's) quality assurance and quality development in research. A central feature is that HEIs and UKÄ share responsibility for assuring the quality of higher education. Evaluations are based on the Higher Education Act, the Higher Education Ordinance and the principles for quality assurance laid down in the Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG). The internal quality assurance procedures at SLU were reviewed by UKÄ in 2019. The review evaluated whether the quality assurance procedures at SLU are systematic, result in high quality and contribute to quality development. A panel of assessors reviewed material that included a self-evaluation, student submissions, interviews and site visits, and then submitted an overall assessment and its recommendation to UKÄ. SLU and the VEE were approved by UKÄ March 24, 2022 (decision number 411-00485-18) for its Quality Assurance program. SLU was the first university in Sweden to be fully approved according to the new model! More information of the Quality assurance process for education can be found: https://internt.slu.se/en/organisation--styrning/quality-assurance-of-slus-education
Description of the global strategy of SLU for outcome assessment and quality assurance (QA)
Parts of the presentation below are taken from the *Framework for the quality assurance of courses and study programs at SLU*, https://internt.slu.se/globalassets/mw/org-styr/styr-dok/1-verksamhetsstyrning-organisation/strategi-kvalitetsarbete-utbildningar-en.pdf

SLU's systematic quality work is based on ESG 2015. Along with the Higher Education Act - HL (1992: 1434), the Higher Education Ordinance - FL (1993: 100), The Ordinance of the Swedish University of Agricultural Sciences – FSLU (1993: 221) and SLU's strategy for 2017-2020, the ESG forms the framework for quality assurance in education at first-, second- and third-cycle level.

SLU specifies the quality work in six quality areas, which support the education process in its various phases (SLU ID: SLU.SLU.ua.2018.1.1.2-501):

- Recruitment, selection (third level), admission and introduction to studies (ESG 1.4, ESG 1.8, HL 1 kap, 5§),
- Study and learning environment (basic and advanced levels), research and working environment (graduate level) (ESG 1.6, ESG 1.7, HL 1 kap 4§, HL 1 kap 4a§, HL 1 kap 5§),
- The program's structure, content and results (ESG 1.2, ESG 1.3, ESG 1.4, ESG 1.5, ESG 1.6, ESG 1.9, HL 1 kap 3§, HL 1 kap 5§, HL 1 kap 8§, HL 1 kap 9§, FSLU bilaga 2: examensordning),
- Teaching and tutoring (ESG 1.3, ESG 1.5),
- Education management and guidance (ESG 1.2, ESG 1.3, ESG 1.4, ESG 1.6, ESG 1.7, FL 4§, FL7§),

- Transition to working life and career (HL 1 kap 2§, HF 1 kap 11§).

Quality dialogues 2017-2023

During 2017-2023, SLU is running the quality assurance process for programs and separate courses that are offered as free-standing courses, focusing on quality dialogues between Education Board and the Program Boards and between the Vice-Chancellor and the Faculty Boards (for doctoral programs). The dialogues are conducted in September–October, followed by evaluation in November with results and suggestion of changes reported back. In 2024, SLU will focus on evaluation and revision of the quality assurance system and consequently there will be no evaluations of programs during this period.

Quality work within SLU's courses and programs

The quality work is based on regulations, the University's strategic objectives and the expectations of students, teachers and the surrounding community that courses and programs are of high quality. The systematic quality work at SLU aims to support a culture of shared definitions of good quality as a starting point in all work related to teaching and developing support and control systems. Quality work for Bachelor's, Master's and doctoral education is implemented at all levels within SLU and represents a joint concern for all staff members and students.

Responsibility and implementation of QA at first- and second-cycle levels

The overall responsibility for the education at first- and second-cycle levels rests with UN. In the case of the Veterinary Medicine programme, the Faculty Board appoints the members of the PN-VH which ensures that the programmes and courses are of high quality. PN-VH is chaired by the Vice Dean for Education, and the responsibilities of this role is described in the vice-chancellor's delegation order. For each programme, PN-VH appoints a Programme Director (PSR-V) responsible for developing the programme's academic progression and quality, as stated by the vice-chancellors' order of delegation. The PSR-V is assisted by a Programme Committee (PR-V) for development and management of the Veterinary Medicine programme.

The Heads of Department are responsible for provision of education of the highest class within each departmental area, within the framework of assigned resources. They are assisted by Departmental Directors of Studies. The department supervising each course appoints a Course Coordinator for the implementation of the course.

Course evaluations

SLU must enable students who are participating in or have completed a course to express their experiences and views on the course, through a course evaluation. Course evaluations must be followed up and used as a tool for developing the quality of courses and programs. The course coordinating department (or equivalent) is responsible for summarising and following up on each course evaluation, unless the supervising faculty has decided that this is to be done in a different way. SLU must enable students who are participating in or have completed a course to express their experiences and views on the course, through a course evaluation. Course evaluations must be followed up and used as a tool for developing the quality of courses and programmes. The course coordinating department (or equivalent) is responsible for summarising and following up on each course evaluation, unless the supervising faculty has decided that this is to be done in a different way. Each year, summaries of all course evaluations are scrutinized by the PN-VH. The feedback loop is that if too few responded, too low overall impression of the course, or if the student representative's report or the course leader's report are missing, PN-VH assigns the relevant program director to analyse and then report back an action plan to improve the outcome of future course evaluations.

Results and conclusions from course evaluations must be reported in a common electronic course evaluation system (Evald in Slunik) and made available to the students via the student web. The results reported are numerical results for the

questions that are mandatory to all courses, as well as a summary of the comments of students and teachers. At the start of a course, the results of the previous course evaluation are presented, along with any changes resulting from the course evaluation. Statistics are available on course evaluation reports.
Every student has the right to make a course evaluation for each course attended. This is an important opportunity for them to influence their education and is part of SLU's quality assurance procedures.

How course evaluations are handled at the Veterinary Medicine program

At the start of each course, students are reminded that by the end of the course they are expected to complete a course evaluation. At this time, a student representative is appointed by the Veterinary Students' Union (VMF) from among those attending the course. They help to collate the results of the evaluation. The student representative receives a small renumeration for their work. The student representative must perform the following:

- Complete the course evaluation themselves and look at other responses submitted.
- Hold a discussion on the quality of the course and the results of the evaluation with the students who completed the course.
- Together with the course leader, the student representative has the final responsibility for the "student comments section" of the evaluation report.

The course leader then goes through the evaluation result with the teachers involved in the course, makes comments in the "Course leader comments section", and submits the result to the Program Director of Studies. The evaluations for all program courses given during an academic year are compiled and followed up by the PSR-V and the PR-V. The compilations are then reported to the PN-VH and the Faculty Board.

Program evaluations

Students who are participating in or have completed a degree program are given the opportunity to express their experiences of and views on the degree program through a program evaluation organised by the PSR-V. Program evaluations are followed up and used as a tool for developing the quality of the program. The PN is responsible for summarising and following up program evaluations.

Closing the loop of the QA Plan-Do-Check-Act (PDCA) cycle

The paragraphs above describe how the various responsible bodies perform their QA work and how the PDCA cycle is completed and the experiences are brought back to the organisation, so that it can be improved. However, the PDCA cycle looks very different depending on what is being evaluated;
For ***single courses***, the time from the actual running of the course to evaluation and possible action is short. Quality-enhancing measures are usually implemented in the subsequent academic year. Decisions can often be taken far out in the organisation, at the departmental or program level. Teachers and students on the course are directly involved and responsible for adjustments.
At ***program level***, the time for implementing major quality improvements may be significantly longer, depending on the change required. However, annual updates of individual courses are possible and thus changes can be made to improve the education quality. A comprehensive development of the Veterinary Medicine programme however requires nearly ten years from start of planning until the first students graduate.

Quality dialogues

The results of SLU's QA work are followed up by quality dialogues, which are carried out on a regular basis. The purpose of the dialogues is to ensure that the courses are of high quality, and to contribute to quality enhancement.

Quality dialogues take place between Program Boards and the Education Board (first- and second-cycle education) and between the Faculty management, Research School, Research Education Board, student reps from Research education and the Vice-Chancellor (third-cycle education). The quality dialogues are carried out according to a specified structure. Quality dialogues result in a development plan that then forms the starting point for the next quality dialogue period.

Assessment

Quality dialogues and, where appropriate, external audits, form the basis for the UN and the Vice-Chancellor to judge whether the quality process is sufficient to ensure that the activities are of high quality. In cases where the quality work is not deemed to be sufficient, the UN and the Vice-Chancellor decide on appropriate action. The Vice-Chancellor and UN annually inform SLU's Board of their assessments.
Documentation from the dialogues is published on the SLU and UN websites, and in the Vice-Chancellor's and the University Director's assessment.

External review

The UN and the Vice-Chancellor can initiate an external review of education. Such an initiative can be taken if quality dialogues show inadequate quality work and no real improvement can be seen in the feedback quality dialogues. SLU participates in the regular European evaluations of training for licensed professionals (veterinarians, veterinary nurses). Elements of external review can also occur in quality work in other courses. In addition, the higher education authority implements external evaluations by a selection of training courses.

Activity monitoring of administration and library

Monitoring and development of the quality of the administration and the library's activities are part of the regular planning and operational follow-up.

Annual reports

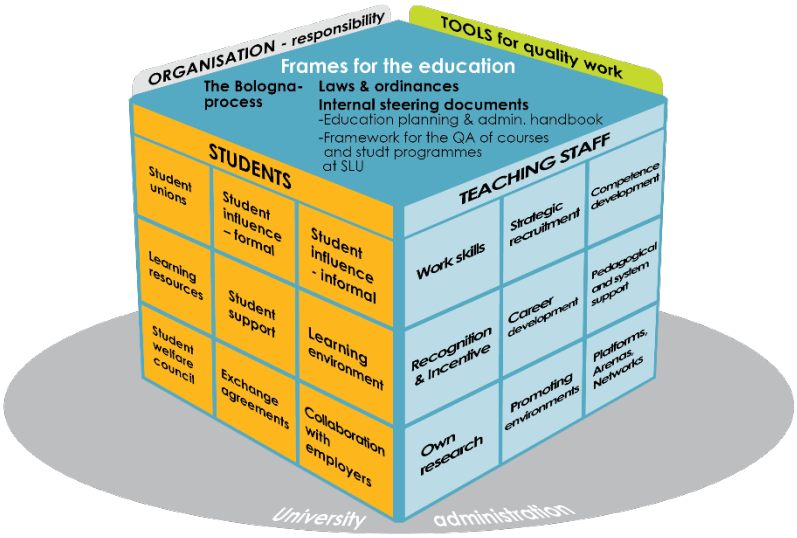
The work on annual reports is also a part of QA. All faculties go through their activity plans and report back to the university management, and this ends up in the annual report. The annual reports from SLU can be found at: Årsredovisningar | Medarbetarwebben (slu.se)

Internal auditing

The Internal Audit Unit at SLU serves the University Board and management. It independently audits all activities at SLU. All reports from the Internal Audit Unit are available from: Internrevisionens rapporter | Medarbetarwebben (slu.se). The Internal Audit Unit also participates in inquiries and assists in development and change processes, primarily within the financial management area. The University Board decides annually on the Internal Audit's audit plan. Results of completed audits are continually reported the University Board, the management and to those that the audit concerns. In 2020, a review of management of VTH and the collaboration with VH Faculty concerning clinical education (SLU ua 2020.1.1.2-1218) was conducted. The purpose of the review was to assess whether the management of the VTH and the clinical collaboration was effective and aimed to promote financial stability, as well as excellent clinical teaching and research. The internal audit's final assessment was that the central management of VTH and the clinical collaboration was not satisfactory. The central management of VTH did not promote financial stability of VTH's operations, nor the quality of clinical teaching and research. Together with the work of the Together project, this eventually led up to the Vice Chancellor's decision to reorganise VTH and merge it back with VH Faculty upon the suggestion of the Dean of VH Faculty (SLU ua 2023.1.1.1-132). During autumn 2022, VH Faculty started the process of potentially reorganising its six existing departments. Following several workshops during spring 2023, the Dean decided in June 2023 to reorganise the Faculty into three large departments from January 2024 (SLU ua. 2023.1.1.1-2290). The intention is to create stronger critical

mass to promote high-quality teaching and research. A thorough budget planning process has been made for VTH, with the expectation of creating a sustainable financial balance.

Figure 1.4.1 SLU:s quality cube



SLU's quality assurance of the education can be illustrated with a "quality cube" The sides represent the parts responsible for the quality work: the teaching staff/supervisors; the students/doctoral students; the formal operational organization; the follow-up tools (statistics, course evaluations and other follow-ups).
The ceiling represents the framework for the education (external and internal governing documents). The bottom plate represents university administration and infrastructure (which provide support and practical basic conditions for educational activities).

Comments
The commitment of students and teachers to teaching issues is a strength for VH Faculty. Discrepancies identified are handled at course or program level. Course and program evaluations play an important role, but unfortunately, the response rate is not always as high as desired.
Suggestions for improvement
The re-organisation of VH Faculty will create a strong academic environment and enable better collaboration within the Faculty. As with all re-organisations, the first phase will be challenging. The re-organisation requires extra staff effort and employees will have to find their role in the new departments. We expect that the anchoring project and risk/consequence analyses that were done will make this first phase as smooth as possible and enable the true potential of the new structure to be realised.

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 program, views and employment destinations of past students as well as the profile of the current student population.
The VEE's website must mention the VEE's ESEVT status and its last Self-Evaluation Report and Visitation Reports must be easily available to the public.
Information and consultation are central parts of the decision-making process. Employees, students and external stakeholders are therefore represented in virtually

all decision-making bodies within SLU, including the University Board and the Faculty Boards. The students are entitled to representation when decisions or preparations are made that have a bearing on their courses or programs or the situation of students. Through their representatives, employees, students and external stakeholders can be kept informed, influence the decisions made and initiate questions when needed. An important part of the communication is achieved by direct contact with the various stakeholders, who can then use their own channels to disseminate the information further. Stakeholders are involved in research and education in different levels: The vice-chancellor has a "Stakeholder council" with a group of heads of relevant organisations, were the veterinary education at SLU is a recurrent topic on the agenda, both the number of students and the content. At regular intervals, the program director of studies invites stakeholders for dialogue to exchange information, experiences and expectations. During the work with the new curriculum this has been intensified, with three meeting per year. Moreover, three representatives from different parts of trade and industry are permanent members of the program committee (curriculum and first day skills). There are also regular, individual high-level meetings between the SLU vice-chancellor and dean of the VHF and representatives of stakeholder organisations (e.g. animal hospitals, advisory companies, authorities). In the VHF:s daily research and education activities, Individual stakeholder representatives are regularly involved as co-applicants and co-advisors in research projects, and take part as adjunct teachers in several courses. There are also several industrial PhD students, employed by stakeholders but registered as PhD students at SLU, occasionally taking part of our teaching. The Student Union annually organizes a *Career Day* where companies and non-profit organizations in the field of veterinary medicine are invited to present their career possibilities for the students. Career Day is organised in the form of a trade fair with exhibitors from organizations and companies of varying size, where multiple shorter seminars. There are several electronic information channels at SLU, some of which focus on specific target groups:

- SLU has separate websites for the public and external stakeholders, for employees, for prospective and active students and for library services.
- There are also faculty, department and student union websites.
- Sections of the websites are also available in English.
- All minutes of boards and committees are public and can be accessed by staff through SLU's internal website for employees.
- Internal newsletters for different target groups, e.g. to course leaders from the educational service division, Deans' letters to VH Faculty staff, for example:
https://internt.slu.se/riktat/interna-fakultetssidor/vh-fakulteten/aktuellt/satsningar-och-projekt/utokningsprojektet/ (Expansion project)
https://internt.slu.se/riktat/interna-fakultetssidor/vh-fakulteten/aktuellt/fakulteternas-nyhetsbrev/ (VHF news letter)
https://internt.slu.se/riktat/interna-fakultetssidor/vh-fakulteten/aktuellt/satsningar-och-projekt/ackreditering_vet/ (Website info regarding the accreditation process)
- The Vice-Chancellor and deputies have their own blog section

These are examples of the dialogues and consultation routes within SLU and VH Faculty. The most important of these – meetings between individuals – was facilitated by the building of VHC in 2014. Now, most VH Faculty staff and students are found "under one roof" and staff have a shared lunch and coffee break area at the top level of VHC.

Each year, VH Faculty together with SLU prepares a brochure that is available online for student applicants with information on admission and details of the curriculum. SLU organises an information event dedicated to prospective students at high school

level, where the study programs and potential employment destinations are presented. During the event, the candidates have an opportunity to visit student teaching laboratories, clinics and research laboratories at VH Faculty and VTH. The visits are co-organised with the Faculty Student Council, which gives the candidates a chance to talk with the veterinary students. Separately, VTH also arranges an *open house day* for the public, where visits can be made to different clinics and stations to explore the world of veterinary medicine and the latest in animal health care, wellbeing and biomedical research. The public can visit our exhibits, petting zoo and teddy bear repair station under the supervision of staff and also meet and talk to veterinary medicine and veterinary nurse students.

The information on the current ESEVT status of the Faculty can be found on the VH Faculty webpage, as can the latest Self-Evaluation Reports and Visitation Reports.: https://internt.slu.se/riktat/interna-fakultetssidor/vh-fakulteten/aktuellt/satsningar-och-projekt/ackreditering_vet/
In the work to prepare VEE for the visitation in March 2024, a website was created with updated information on the process and also a FAQ of questions encountered by the LIASION officer and his team in the work of creating the current SER.

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. Evidence must be provided that the QA loops are fully closed (Plan Do Check Adjust cycles) to efficiently enhance the quality of education.
Any action planned or taken as a result of this data analysis must be communicated to all those concerned.
VH Faculty's (including VTH) strategy is part of SLU's strategy and shows the Faculty's concretisation of SLU's overall goals and associated sub-components. The document is intended to function as an internal steering document that provides guidance for planning and prioritising activities within the Faculty. The Faculty's work is based on the best interests of animals, anchored in the UN's goals for sustainable development. VH Faculty is responsible for research, education and collaboration around animal care, feeding, breeding, health and welfare, in work characterised by an evidence-based approach. The Faculty's teaching is anchored in its high-quality research. Internal Faculty-wide work has resulted in prioritisation of the following three strategically important research areas: Systems perspective on the circular food system; One Health; and Digitisation.
The strategy project was created in 2020 as a pan-Faculty process including all parts of academic staff, technical/administrative support and student representatives. Four workshops were conducted, each around one of the focus areas decided by the Board of SLU; *SLU's next steps for sustainable development, SLU in the digital society and One SLU*.
Conclusions from the workshops were then implemented in the VH Faculty strategy by the Dean's office. The strategy 2021-2025 was decided by the VH Faculty Dean on December 16th , 2020. The Dean reports to the Vice-Chancellor's council annually on how the Faculty's working plan aligns with the SLU strategy and working plan. SLU's strategy and the Faculty's strategy and working plans are available at the university website's public domain: https://internt.slu.se/en/organisation--styrning/mission-vision-values-objectives/slus-strategy2021-2025/

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 full visitation (FV) took place on September 25-29th, 2017. Since then, VH Faculty was revisited on October 10-12th, 2018, and subsequent to this, the ECOVE decision was to award Accreditation, since all major deficiencies were corrected and there was progress in correcting minor deficiencies. Besides a 50% professor in anaesthesiology and two residents at VTH, a veterinary surgeon was assigned as an anaesthesiologist and an in-house anaesthesiology training program for surgeons was initiated at the Small Animal Clinic, to improve practice of the students on patients (Major Deficiency 1). The isolation facilities are subject to periodical review and staff and students are instructed on how to use these and implement biosecurity measures (Major Deficiency 2). There is continuous progress in increasing the numbers of patients and necropsies (Major Deficiency 3).

In 2020, a three-year program, "*Tillsammansprojektet - Together project*", was launched to help improve the organisation and cooperative culture of the two (Minor Deficiency 1). This resulted in a decision by the Vice Chancellor in May 2022 to initiate the final step of re-integration of VTH into VH Faculty. This integration process was finalised on January 1st, 2024. The primary focus of describing VTH will be on the academic years (2021, 2022 and 2023) reported in this SER. The FSQ teaching now meets ESEVT standards and was strengthened in the 2017 curriculum (Minor Deficiency 2).

VH Faculty introduced a new curriculum after the FV in 2017, so that students could benefit from a three-semester clinical rotation period (extended by over 10% compared with the previous period), also strengthening the FSQ training. Due to a government decision to rapidly expand the number of students in the Veterinary Medicine program, a new curriculum has been developed and launched 2023.

Like universities everywhere, SLU faced challenges posed by COVID-19, transferring theoretical teaching online while clinical training continued with adjustments to the health status of the students and staff by re-routing patients and decreasing the group size during clinical activities. Thus, students were exposed to fewer hours of clinical training. However, Sweden was one of few countries where the VTH was allowed to continue on-site training during the entire pandemic. Students were allocated into smaller groups and took turns staying at home and joining on-line clinical rounds at the end of the day with the students on-site and the teachers in clinic. This caused a slight reduction in the total number of cases, but the quality was maintained, as the teachers had education in smaller groups and thus very close hands-on training/supervising could take place. VH Faculty also provided extra voluntary time in rotations during summer to the students. All students acquired the Day One Competences. To keep up with the examination procedure, mandatory and other teaching items, the Faculty offered additional opportunities for students in the summer of 2020 and repeated the procedure in 2021. Since the next FV is planned for March/April 2024, some Indicators might be affected, as well as compliance with ESEVT Standards. As instructed by EAEVE, the academic years to be included are **2020/21, 2021/22 and 2022/23**.

Since 2017, there have been several important and positive changes to Faculty infrastructure, clinical and laboratory services, financial conditions and the costs of teaching, and a 45% increase in student intake to the Veterinary Medicine program,

as presented in the Introduction to this report. A new curriculum with more practical training was introduced in 2017 and followed up by another update in 2022 (VP-23), further adapting to societal needs and after communication with stakeholders to create a contemporary Doctor of Veterinary Medicine. In brief, VP-23 is updated in having earlier introduction of practical training, e.g. animal handling and sampling, to reduce student stress and provide better preparation for the clinic. The new curriculum (VP 23) has as objective to give the students the scientific basis for practicing the art of veterinary medicine with confidence. As being a veterinarian is a position of trust, the training aims at letting the students successively grow into this role. Clinic time has increased (and pre-clinic time has decreased slightly). There is a clear line of professional development ('soft skills') and more external clinical practice, both compulsory and elective. Some minor topics (such as herd health, work management, economy/business) which are listed with EAEVE have been clarified. The entire structure of the clinical years is clearer for the students, with longer placements/rotations, which also means that VTH is better used for teaching. Moreover, the Clinical Training Centre (CTC) has been expanded and the students are introduced early to the CTC and can more easily practice on dummies before being introduced to live animals.

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).

2.1 Description of the global financial process of Swedish HEIs

Around 85% of the funding for the operations of HEIs comes from the public purse. The remainder comes from private funding agencies and financial revenues. The government issues public service agreements on an annual basis detailing the obligations of HEIs.

Funding for first- and second-cycle courses and programs

The funding for first- and second-cycle courses and study programs is based on the number of full-time equivalent (FTE) students and the annual performance equivalent. The amount of funding varies depending on the disciplinary domain.

Funding for third-cycle programs and research

Funding for third-cycle programs and research is specified in the public service agreements for HEIs. Part of the state funding comes via government research funding bodies. Many HEIs receive external funding from foundations, local governments and the private sector.

Student finance for students studying in Sweden

The Swedish system of student finance is designed so that higher education is accessible to all those who can benefit from it. Tuition at HEIs in Sweden is free-of charge for Swedish students and for students from the European Economic Area (EEA) and Switzerland.

Description of the financial process of the VEE

SLU's operations are financed by direct government funding, fees and external grants and contracts. The allocation of the government funds is decided by the University Board. SLU's operations are directed by a large number of targets set by the government, Parliament (the Riksdag) and SLU's management. The Higher

Education Act forms the basis for the University's operations and the targets in this Act therefore strongly guide the University.
In September, the Budget Bill is submitted from the government to the Riksdag, which decides on the state budget in November and December. The government then decides on the Budget Directives (appropriation directions) in the latter half of December. The Budget Directives set the amount of government grants available to the University, the targets, reporting requirements, assignments and additional organisational governance.
The planning process at SLU is concentrated to the autumn and the University Board decides on the assignments and allocation of state funding to faculties and accounting areas (i.e. education, research, etc.) in November. One of the goals of the process is that planning and budget work at faculty and department level should be completed before the next fiscal year begins.
Most of the direct government funding is transferred to faculties and departments and, as far as possible, major central provisions are avoided. For example, administration and libraries are instead funded through a surcharge, set at departmental level (currently 15.3 or 20.7 % of salary costs, see 3 below). Externally funded activities may therefore be responsible for their share of the University-wide activity.
SLU's budget is built from below. Based on the faculties' allocation of appropriations and the University Board's budget directions, the departments set budgets for their operations for the coming fiscal year. The departments' budgets create the faculty budget and the faculty budgets create the university budget. The Vice-Chancellor finally determines the university budget and the Board is informed in February.

Government grants 2023

For the period 2022-2024, SLU's assignment in first- and second-cycle education is set at 12,600 student FTEs, i.e. an average of 4200 per year.
The total 2023 allocation from the government was €188.4 M, distributed in the following accounting areas;

- first- and second-cycle education €56.4 M
- research and postgraduate education €114.0 M
- environmental monitoring and assessment €18.0 M

Within SLU, the state grants are distributed to the four faculties according to their assignment in first- and second-cycle education (VH Faculty has 1094 student FTEs), basic grants for research and research performance-related grants, and environmental assessment projects. Depending on how resource-intensive courses are, remuneration is paid according to seven different levels decided by UN. Veterinary medicine has the highest compensation. In addition to this, VH Faculty receives fixed remuneration for essential clinic and animal husbandry infrastructure of €4.5 M, which is intended for costs related to the Veterinary Medicine program.
As a result of the internal budget process, the University Board and the Vice-Chancellor decided to allocate €43.1 M to the VH Faculty as follows:

- first- and second-cycle education €20.3 M
- research and postgraduate education €22.7 M
- environmental monitoring and assessment €0.1 M

VH Faculty receives dedicated education allocations for TUVET - Supplementary education for veterinarians with degrees from countries outside EU/EEA and Switzerland (10 FTE, €0.36 M) and the BSc Equine Science program (70 FTE, €1.6 M). The Swedish Centre for Animal Welfare (SCAW) is also financed via designated state funds (€0.45 M), which include financing (€0.13 M) for the Scientific Council for Animal Welfare (VRD). Moreover, VH Faculty is requested by the government to report its efforts in the areas of One Health and Antibiotics resistance.
The Faculty Board/Dean allocates course assignments and remuneration for the Veterinary Medicine program to the departments responsible. Compensation per FTE student varies depending on the type of training included in the course. VH Faculty also allocates state grants for third-cycle education and research to the departments.

2.1.1. Overhead on revenues from services and research grants

SLU, like all Swedish HEIs, applies a common model for sharing indirect costs. Application of the model means that costs for university and faculty-based support are distributed to the departments so that all financiers contribute to the costs for administrative, technical and infrastructure support.
University and faculty collective (indirect) costs, such as university management, faculty management, university administration, the library and some other activities, such as work-related healthcare, administrative systems and premises services, are allocated to each department on the basis of three different distribution keys: salary costs, number of full-year students and premises area.
The **University's indirect costs** for 2023 are covered by a percentage withdrawal based on salary costs including payroll expenses:
First- and second-cycle education: 12.5%.
Research and third-cycle education: 15.%.
In addition, each department pays a fee of €1148/FTE student to cover central university costs for student administration and infrastructure.
Costs for **faculty-based support** for 2023 are covered by a percentage withdrawal based on salary costs including payroll expenses:
First- and second-cycle education: 2.8%.
Research and third-cycle education: 1.8%.
Costs for **premises services** (e.g. security, depreciation IT network) are covered by a fee per square metre, which for 2023 is set at €15.4/m^2.
The 2023 **library remuneration** for research and postgraduate education is covered by means of a fee of 3.3% for direct salary costs including payroll expenses. In addition, the fee for student library services is €400/FTE student.
The budget instructions and framework are available from the SLU website at Gemensamma kostnader 2023 (in Swedish).

2.1.2. Annual tuition fee for national and international students

Tuition at higher education institutions in Sweden is free of charge for Swedish students and students from the European Economic Area (EEA) and Switzerland. In general, students who are citizens of other countries are required to pay application and tuition fees. SLU charges a tuition fee of EUR 25,000 per academic year for the Veterinary Medicine program. So far, no fee-paying student has attended the program.

2.1.3. Estimation of utilities and other expenditures directly paid by the official authority and not included in the expenditure tables

Costs for water, electricity, gas, fuel, etc. are all included in the operating costs and costs of premises paid by VH Faculty and its Departments.

2.1.4. On-going and planned major investments for developing, improving and/or refurbishing facilities and equipment, and origin of the funding

Due to the coming expansion of the Veterinary Medicine program (45% increase), some additional complements to infrastructure are ongoing to meet the requirements. See Chapter 4.

2.1.5. Forecast expenditures and revenues for the next three academic years

The rise in number of VH Faculty students (both Veterinary Medicine and Veterinary Nurse programs) will lead to an increase in the allocation for first- and second-cycle education.

Description of how expenditures, investments and revenues are decided, communicated to staff, students and stakeholders, implemented, assessed and revised

Details are provided above, see 2.1. Apart from that description, these issues are handled in a similar way to other **decision**-making, consultation and information issues within SLU, as summarised in Chapter 1. ***Exchange rate used €1 = SEK 11.50***

Table 2.1.1. *Annual expenditures (VH Faculty) during the last 3 fiscal years, 1000 €*
** Cost of premises is included in maintenance cost*

Area of expenditure	2023	2022	2021	Mean
Personnel	32587	31716	31604	31969
Operating costs	15314	16253	14492	15353
Maintenance costs*	10894	10447	10 228	10 523
Equipment, depreciation	1 778	1 804	2 151	1 911
Joint provisions/Overhead	7 176	6 691	6 723	6 863
Total expenditure	*67 749*	*66 911*	*65 198*	*66 619*

Table 2.1.2. *Annual revenues (VH Faculty) during the last 3 fiscal years, 1000 €*

Revenues source	2023	2022	2021	Mean
Public authorities	42 155	41 851	40 643	41 550
Tuition fee (standard students)*	0	0	0	0
Tuition fee (full fee students)	0	0	0	0
Other services**	7 138	7 338	7 450	7 309
Research grants	15 804	14 704	14 604	15 037
Other Sources***	3 601	3 586	3 256	3 481
Continuing Education	Included in "Other services"			
Donations (Fundraising)	Included in "Research grants"			
Total revenues	*68 698*	*67 479*	*65 953*	*67 377*

** No tuition fee for standard students (EU/EEA)*
*** Clinical and diagnostic services are included in the revenues from the VTH, table 2.1.5*
**** Mostly sale of agricultural products*

Table 2.1.3. *Annual balance between (VH Faculty) expenditures and revenues, 1000 €*

Fiscal year	Total expenditures	Total revenues	Balance
2023	67 749	68 698	949
2022	66 911	67 479	568
2021	65 198	65 953	755

Table 2.1.4. *Annual expenditures (VTH) during the last 3 fiscal years, 1000 €*

Area of expenditure	2023	2022	2021	Mean
Personnel	11 072	13 515	12 929	12 506
Operating costs	4 326	5 615	5 230	5 057
Maintenance costs*	3 932	3 548	3 518	3 666
Equipment, depreciation	733	750	677	720
Joint provisions/Overhead	1 544	1 874	1 828	1 749
Total expenditure	*21 607*	*25 302*	*24 182*	*23 698*

** Costs of premises is included in maintenance costs*

Table 2.1.5. *Annual revenues VTH during the last 3 fiscal years, 1000 €*

Revenues source	2023	2022	2021	Mean
Public authorities	5 415	5 606	5 407	5 476
Clinical & diagnostic services	13 019	16 658	17 085	15 587
Total revenues	*18 434*	*22 264*	*22 492*	*21 063*

Table 2.1.6. *Annual balance between VTH expenditures and revenues, 1000 €*

Fiscal year	Total expenditures	Total revenues	Balance
2023	21 607	18 434	-3 173
2022	25 302	22 264	-3 038
2021	24 182	22 492	-1 690

Standard 2.2: Clinical and field services must function as instructional resources. The instructional integrity of these resources must take priority over the 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.

Financial self-sufficiency of clinical services is not required under SLU regulations or by the Vice-Chancellor or the Dean, but needs to align with the budget for that fiscal year. The veterinarians in the clinics are academic teachers, PhD students and residents with pedagogic training and university animal hospital clinical veterinarians with pedagogic training. The hours of their work in the clinics are included in the teaching/working hour limit. The income from clinical services is used to cover the cost of drugs, disposables, equipment and salaries. Together with the funding from the SLU Board, this is intended to cover all costs and reach the budget goal. The SLU overhead is 12.5% for VTH. Purchases of equipment for the clinics are met by the VTH budget.

SLU's budget emerges from a dialogue between the departments, faculty management and the Vice chancellor. Based on the faculties' allocation of appropriations and the University Board's budget directions, the departments set up budgets for their operations for the coming fiscal year. The department budgets create the faculty budget and the faculty budgets create the University budget. The Vice-Chancellor finally determines the University budget and the Board is informed in February. VTH has a separate budget from the VH Faculty departments, but is otherwise managed in the same budget process.

VH Faculty has great autonomy concerning the use of its resources to implement its strategic plan and to ensure high teaching quality. The details of financial process are presented in the description of Standard 2.1. Both the Faculty and VTH decide autonomously about educational expenditures and each has its own continuous plan of investments and modernisations. VTH is compensated for the additional cost of having students involved in the clinical work, as it is suggested to involve additional time needed for patient care and reduce efficiency.

VTH has had a negative budget balance over a long period. The deficits have been covered by the University Board. With the Vice-Chancellor's decision in May 2022 on integrating VTH into VH Faculty, balancing the budget is set as a goal for 2024. VH Faculty has had a positive budget balance in recent years. The finances of VH Faculty are also supported by research grants and fundraising. There is no restriction on employing new staff at VH Faculty, as long as the cost is covered within the budget or with increased research grants or fundraising.

- The instruction for VTH was changed by the SLU Board (SLU ID:ua.2018.1.1.1-561) on February 19th, 2018, in alignment with a major investigation of the VTH and its interplay with VH Faculty in 2017, led by Professor MD Bengt Gerdin assisted by Tarja Onegård (SLU ID:ua.2016.1.1.2-5073). The mission and instruction of the VTH changed and became very much focused on its core function as a veterinary teaching hospital. This mission was relevant

for the entire period of the current evaluation. Please note that *the new mission from January 1st, 2024, will be similar, but the text on e.g. collaboration with VH Faculty is omitted as VTH is now part of the VH Faculty.*

The entire instruction changed on February 19th, 2018, as follows:

VTH's mission is to be the university's clinical resource for education and research in animal health care. This mission assumes and entails:

- that the work within VTH is planned and carried out in close collaboration with the management for education and research in the area of animal health care at SLU (VH Faculty, based on today's organisational structure), regardless of how this is organised over time
- that VTH adopts new scientific achievements, e.g. through close collaboration with VH Faculty
- that VTH gives students in both the Veterinary Medicine and Veterinary Nursing programs the opportunity to participate in VTH activities within the framework of their education
- that the scheduling at VTH is adapted as much as possible to the needs of the education
- that VTH, together with VH Faculty, contributes to a long-term supply of clinically well-educated personnel for SLU's teaching positions, and that VTH therefore focuses on hiring people who have great interest and talent to function in these roles
- that within VTH, as part of this task, structured specialist training and residency programs are also carried out.

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

The decision process regarding infrastructure expenditures and investments is presented in Figure 2.3.2. The budget allocation procedures are presented in the description of Standard 2.1.

Table 2.3.1. *List of the ongoing and planned major investments for developing, improving and/or refurbishing facilities and equipment, and origin of the funding*

No	Investment specification	Estimated cost €	Date of decision	Origin of funding
1	New construction of storage facilities for the pathology unit	52 000	2022	Together project
2	Additional cadaver storage facility, cold- and freezer.	1 130 000	2022	Together project
3	Lövsta, refurbished pig facilities	104 000	2022	Together project
4	New teaching dummies, reproduction and equine unit	123 000	2022	Together project
5	Extended student capacity, new lab- and A/V-equipment for teaching lab Ymer	310 000	2022	Together project
6	A/V-equipment for teaching facilities at Lövsta	88 000	2022	Together project
7	A/V- and video conferencing equipment for lecture halls Are and Särimner	174 000	2022	Together project
8	Provet Veterinary practice software	1 126 000	2022	VTH budget
9	New dry sow barn at Lövsta	348 000	2023	Faculty budget
10	New dehydration machine and embedding station	43 500	2023	Department budget
11	Lab equipment, hormone analysis and clinical chemistry instruments	147 000	2023	VTH budget
12	Ultrasound Scanner	51 000	2023	VTH budget
13	Capillary electrophoresis instrument	43 000	2024	Department budget
14	Radiology equipment, Ultrasound, storage etc.	260 000	2024	Department budget
15	Ultrasound machine, equine clinic	43 000	2024	Department budget
16	New CTC-building	1 435 000	2024	Together project

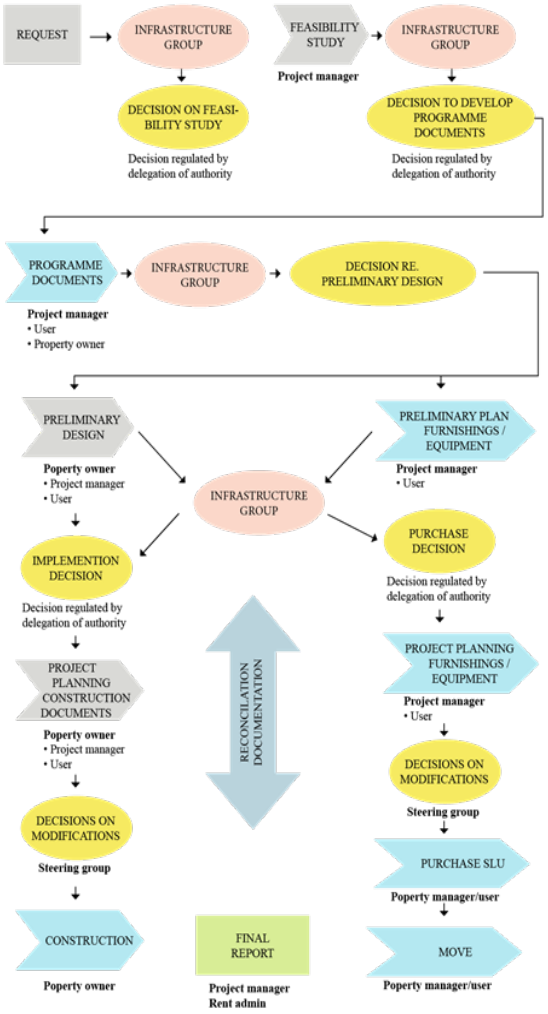
Table 2.3.2 Prospective expenditures and revenues for the next 3 fiscal years (in euro) for the new organisation including both VH Faculty and VTH

	2024	**2025**	**2026**
Revenues	88 680 000	89 130 000	90 000 000
Expenditures	92 020 000	90 870 000	90 870 000
Balance	-3 340 000	-1 740 000	-870 000

Description of how (procedures) and by whom (description of the committee structure) expenditures, investments and revenues are decided, communicated to staff, students and stakeholders, implemented, assessed and revised

All substantial infrastructure investments regarding buildings, or equipment attached to buildings, are regulated in the guidelines for construction and modification of buildings at SLU (https://internt.slu.se/globalassets/mw/stod-serv/lokaler/anvisningar-for-hantering-av-byggarenden-vid-slu-2023-01-04.pdf). Projects are divided into three categories depending on cost. Infrastructure investments of more than 5 MSEK require a feasibility study, a decision to develop program documents, a strategic decision and finally an implementation decision. Investments of less than 5 MSEK require a decision to conduct a feasibility study and an implementation decision. Lesser investments, up to 300 000 SEK, only require a formal request and a decision on the unit responsible for providing funding. The process is described in Figure 2.3.2 below.

Figure 2.3.2 Decision process for construction projects costing more than 5 MSek. The "user" in the process description is the department or unit responsible for the request. The faculty is represented in the infrastructure group



Comments on Area 2
The new organisational structure will optimise competence and teaching capacity, build better critical mass and simplify the decision making processes. More about the new structure can be found in Appendix 2.

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 the ESEVT SOP 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)**
- **Veterinary Public Health (including Food Safety and Quality)**
- **Professional Knowledge including soft skills (e.g. communication, team working skills, management skills).**

When part of the study program cannot be organised because of imposed regulations or constraints, convincing compensations must be developed and implemented.
If a VEE offers more than one study program to become a veterinarian, e.g. in different languages or in collaboration with other VEEs, all study programs and respective curricula must be described separately in the SER. For each Standard, theVEE must explain if there are differences or not with the basic program and all this information must be provided as a formal annex to the SER. Similarly, if a VEE implements a tracking (elective) system in its study program, it must provide a clear explanation of the tracking system in the SER.

Description of the educational aims of the VEE and the general strategy for the design, resources and management of the curriculum

VH Faculty provides a comprehensive program of veterinary education in accordance with EU Directive 2005/36/EC (as amended by Directive 2013/55/EU) and its Annex V.4.1, scientific research in the discipline of veterinary sciences, as well as veterinary services. For the complete syllabus document, see Appendix.
Educational aims of the VEE:
The first aim, in the field of first- and second-cycle education, is to give priority to enhanced and extended recruitment of students, pedagogic development of teaching staff, strengthened skills training, external collaboration, and international mobility among students and teachers. This to produce competence as *legitimerad veterinär* (the Degree of Master of Science in Veterinary Medicine, fulfilling specific learning outcomes), an equivalent of U.K. Veterinary Surgeon (VS) and U.S. Doctor of Veterinary Medicine (D.V.M), and thus be licensed to practise veterinary medicine in Sweden. The Swedish Board of Agriculture is the authority that grants permission to be a licensed veterinary surgeon in Sweden.

General learning outcomes
The general learning outcomes common to all first- and second-cycle courses and study programs are described in the Swedish Higher Education Act (Chapter 1, Sections 8 and 9).

Specific learning outcomes for a Degree of Master of Science in Veterinary Medicine:
In accordance with the Annex to the Ordinance for the Swedish University of Agricultural Sciences, the student shall fulfil the following learning outcomes for a Degree of Master of Science in Veterinary Medicine:
For a Degree of Master of Science in Veterinary Medicine, the student shall have demonstrated the knowledge and skills required to work autonomously as a veterinary surgeon.
Knowledge and understanding
For a Degree of Master of Science in Veterinary Medicine, the student shall have
- demonstrated knowledge of the disciplinary foundation of the field and insights into current research and development work, and into the links between research and proven experience and the significance of these links for professional practice
- demonstrated both broad and specialised knowledge in the field of veterinary medicine
- demonstrated insights into the conditions applying to animal management, its function and interaction with the environment and society, both nationally and internationally
- demonstrated knowledge of economics, organisation and statutory provisions that are of significance for the field of veterinary medicine.

Competence and skills
For a Degree of Master of Science in Veterinary Medicine, the student shall have:
- demonstrated the ability to diagnose the most frequent illnesses and injuries of animals autonomously and to undertake appropriate medical and surgical treatment in basic veterinary medicine
- demonstrated the ability to initiate and undertake measures in preventive veterinary care
- demonstrated the ability to identify problems and take the measures needed to comply with social requirements regarding cruelty to animals, the control of infectious diseases and food safety
- demonstrated the ability to account in speech and writing for interventions and treatment outcomes with those concerned and to document them in accordance with the relevant statutory provisions
- demonstrated specialised skills in discussing new data, phenomena and issues in the field of veterinary medicine with various audiences on a disciplinary basis and also be able to review, assess and use relevant information critically
- demonstrated the capacity for teamwork and collaboration with various constellations
- demonstrated the skills required to take part in research, development and evaluative activities or to work autonomously with other specialised tasks in the field of veterinary medicine and so contribute to the development of the profession and professional practice.

Judgement and approach
For a Degree of Master of Science in Veterinary Medicine, the student shall have
- demonstrated the ability to adopt a holistic view in their professional practice and make judgements on the basis of a disciplinary approach while taking into account aspects relating to the health of human beings and animals, as well as economic, environmental and ethical considerations
- demonstrated the ability to adopt a professional approach to animals and their owners
- demonstrated the ability to identify their own limitations in professional practice autonomously
- demonstrated the ability to identify the need for further knowledge and undertake ongoing development of their skills.

The second educational aim is to provide possibilities to expand competence through doctoral studies in the third cycle. VH Faculty's goals for third-cycle education are: to increase the number of doctoral students, to increase the share of students with a VH Faculty degree, for

the Faculty's Graduate School of Veterinary Medicine and Animal Science (GS-VMAS) to become more proactive and visible, and clearer career paths for doctoral students and postdocs. An important goal is to work for integration of postgraduate education in veterinary medicine and the residency programs. To have a PhD student position at SLU, four years of full finance must be guaranteed. An individual study plan must be submitted and accepted by FUN, and the main supervisor must at least have the level of Associate Professor. At VH Faculty there are also a number of industrial PhD students, clearly showing a close interaction and understanding of the market need for applied science.
Finally, VH Faculty also offers a number of post-graduate specialisation tracks at VTH for nationally recognised specialists in companion animals, horse medicine and surgery, porcine medicine and ruminant health. It also has a number of specialist education programs for national recognition level 2, where the focus is more on specialist areas in companion animals, such as surgery, internal medicine, cardiology, oncology, diagnostic imaging, dermatology etc. At VH Faculty, a number of EVBS-approved residency programs are offered within ECLAM, ECAR, ECAWBM, ECBHM, ECEIM, ECPHM, ECVAA, ECVCP, ECVD, ECVDI, ECVIM-CA (internal medicine, oncology and cardiology), ECVO, ECVP, ECVPT (alternative program), ECVPH, ECVS and EVPC. The Faculty also has a policy approved by the Dean to facilitate combination of a PhD program and a residency to give dual competence of a highly skilled clinical/para-clinical PhD.
The third educational aim focuses on continuing education and lifelong learning. SLU has the goal of lifelong learning in its strategy. VH Faculty also has a specific coordinator, whom companies can address and get specific programs relevant for the competence development of their employees. Moreover, VH Faculty offers several courses for veterinarians (Artificial insemination), calving courses for farmers, physiotherapists (Sports and rehabilitation medicine) and veterinarians and human dentists (Equine odontology). Finally, many of the specialists and academic experts at the Faculty are continuously engaged in courses outside the university provided by external education service providers, underpinning the impact and appreciation our teachers and researchers attract both national and internationally.
During the period, VH Faculty will also contribute to increased cooperation and mobility between academia, industry, organisations and government.

Description of the legal constraints imposed on curriculum by national/regional legislations and the degree of autonomy that the VEE has to change the curriculum

The academic degree title awarded is Degree of Master of Science (MSc) in Veterinary Medicine after completing the Veterinary Medicine program (330 ECTS). The program syllabus, which is now evaluated, was approved on October 12th, 2016. A new syllabus has been approved, on September 8th, 2022, which affects the admission of new students from autumn 2023.

Description of how curricular overlaps, redundancies, omissions and lack of consistency, transversality and/or integration of the curriculum are identified and corrected

The Program Director continually monitors the education system at the VH Faculty. The main tools used to monitor the quality of education are course and program evaluations as a basis for work by the Program Committee and Program Board described in detail in 1.4. *"Responsibility and implementation of QA at first- and second-cycle levels")*. At the request of the Program Board, the departments have appointed teachers who will jointly carry out a review to discover possible overlaps and gaps in the program. We have adequate support from students who are represented when educational issues are discussed at all levels (Department, Program Council, Program Board, Education Board and Faculty Board). If necessary, specific meetings are arranged with students from different years, partly to get input on the education, partly in order to answer questions raised by the students.

An Appendix 3.1 is provided that include theoretical, practical and clinical training for each academic year.

Table 3.1.1. Curriculum hours in each academic year taken by each student

Academic years*	A	B	C	D	E	F	G	H	*Total*
Year 1	297	193	76	69	153		12[1]	81[3]	*881*
Year 2	340	59	84	58				19[3]	*560*
Year 3	459	113	94	31	17	16		135[3]	*865*
Year 4	351	121	68	7	150	321	30[2]	9[3]	*1 057*
Year 5	163	98	95	64	13	575	30[2]	31[3]	*1 069*
Year 6			800						*800[4]*
Total	*1 610*	*584*	*1 217*	*229*	*333*	*912*	*72*	*275*	*5 232*

A: lectures; B: seminars; C: supervised self-learning; D: laboratory and desk-based work, E: non-clinical animal work; F: clinical animal work; G: EPT; H: others (specify -e.g. graduation thesis); J: total

* *An academic year may be subdivided into 2 semesters*

[1] Auscultation; [2] EPT, auscultation; [3] Including surgical training on cadavers, written assignments and quizes;

[4] Exam project estimated full time, 20 weeks à 40 hours

Table 3.1.2 Curriculum hours in EU-listed subjects taken by each student

Subjects	A	B	C	D	E	F	G	Total
Basic Subjects								
Medical physics	3							3
Chemistry (inorganic and organic sections)	2							2
Animal biology, zoology and cell biology	18						6	24
Feed plants and toxic plants	1							1
Biomedical statistics	30							30
Specific veterinary subjects								
Basic Sciences								
Anatomy, histology and embryology	148	126	61	42	153		57	587
Physiology	112	28	15	5	7		6	173
Biochemistry	16	32		18			6	72
General and molecular genetics	63	8	3	4			17	95
Pharmacology, pharmacy and pharmacotherapy	43	17	20	9				89
Pathology	106	34	38				4	182
Toxicology	27	3	9					39
Parasitology	30	6	12	9				57
Microbiology	99	2	22	37				160
Immunology	58			3			15	76
Epidemiology	42	5	14	22			11	94
Information literacy and data management	17	16					80	113
Professional ethics and communication	46	15	16	10				87
Animal health economics and practice management						2		2
Animal ethology	31	8					11	50
Animal welfare	23	1		3				27
Animal nutrition	4							4
Clinical Sciences in companion animals (including equine and exotic pets)								
Obstetrics, reprod. and reprod. disorders	50	10	1	14	6	7	7	95
Diagnostic pathology	3	4	1			86		94
Medicine	83	38			22	252		395
Surgery	88	3	3		21	260	16	391
Anaesthesiology and analgesia	21	8	6		11	30		76
Clinical practical training in common companion animals	65	6	25	9	31	76		212
Infectious diseases	4							4
Preventive medicine	2							2

Diagnostic imaging	42	52	29		6	9	4	142
Therapy in common companion animals	3							3
Clinical Sciences in food-producing animals (including Animal Production and Herd Health Management)								
Obstetrics, reprod. and reprod. disorders	68	13	13	17	24	5	12	152
Diagnostic pathology	4							4
Medicine	40	8	13			5	6	72
Surgery	6	1			1	10		18
Anaesthesiology and analgesia	6	2			1			9
Clinical practical training in food-producing animals	4		3		28	96		131
Infectious diseases	12	4	8			5		29
Preventive medicine		6	8			14		28
Diagnostic imaging						7		7
Therapy in common food-producing animals	3	8	8		1	5		25
Animal production, including breeding, husbandry and economics	33	31	25		2	35	11	137
Herd health management	2	8	13			8		31
Veterinary Public Health (including Food Safety and Quality)								
Veterinary legislation including official controls and regulatory veterinary services, forensic veterinary medicine and certification	46	35	10	2	19			112
Control of food, feed and animal by-products	36	42	2	10			6	96
Zoonoses and their prevention	60	4	37	15				116
Food hygiene and environmental health	9		2					11
Basic food technology	1							1

A: lectures; B: seminars; C: supervised self-learning; D: laboratory and desk-based work, E: non-clinical animal work; F: clinical animal work; G: others (specify); H: total

Note that teaching in certain subjects can be registered under several headings, which means that some subjects get relatively few hours in the table but are included in other registered teaching. E.g teaching in Therapy in common companion animals which in part is included under the headings Medicine, Surgery and Infectious diseases.

*Note: Subjects linked to **Professional Knowledge** (including soft skills, e.g. communication, team working skills, management skills) are incorporated within the subcategories and include inter alia Information literacy and data management, Professional ethics and communication, Animal health economics and practice management, Clinical practical training in common animal species, Herd health management and Veterinary legislation.*

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

Types	List of clinical rotations (Disciplines/Species)	Duration (weeks)	Year of program
Intra-mural (VTH)	Small animals / Dog and Cat	14	4 & 5
Intra-mural (VTH)	Equine / Horse	8	4 & 5
Intra-mural (VTH)	Ruminant medicine / Cattle, Sheep and Goat	7	4 & 5
Intra-mural (VTH)	Pig diseases / Pig	3	4 & 5
Intra-mural (VTH)	Reproduction / Horse, Cattle, Pig, Dog, Cat, Sheep, Goat	5	4 & 5
Ambulatory clinics	Ruminants & Horse	4	4 & 5
Herd Health Management	Ruminant medicine / Pig / Reproduction		5
FSQ & VPH	Food safety	3	4 & 5
Electives	NA		

Table 3.1.3.b Curriculum days of Elective Practical Training (EPT) for each student

Subjects	Minimum duration (weeks)	Year of program
Production animals (pre-clinical) or veterinary clinic (pre-clinical)	0.1-0,2	1
Production animals (pre-clinical)	0,4	2-3
Veterinary work experience	2	4-5

Table 3.1.4. Curriculum hours taken as electives for each student

Not applicable for the veterinary program at SLU

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

Subjects	A	B	C	D	E	F	G	Total
Agriculture in practice - Animal husbandry 1		5	45		150			200

A: lectures; B: seminars; C: supervised self-learning; D: laboratory and desk-based work, E: non-clinical animal work; F: clinical animal work; G: others (specify); H: total

Description of the core clinical exercises/practicals/seminars prior to the start of the clinical rotations

Before students are allowed to perform examinations and tests on live animals, they practise on dummies in the Clinical Training Centre (CTC) and on organ specimens/cadavers. Thereafter, they perform examinations and test procedures on teaching animals (dogs, horses and cattle), animals from SLU's own herds (cattle, goats and pigs), and borrowed animals (sheep), and finally on patients.

In the beginning of their first year, students are given an overview of the veterinary profession in Swedish society, covering organisation, responsibilities and challenges, different areas of work, ethical considerations etc. At the beginning and end of the first year, there are sessions with a senior lecturer in animal ethics and veterinarians to discuss various ethical aspects of the profession. Basic microscope handling is taught in conjunction with histology teaching.

During the first year, the students visit the faculty goat herd (in VHC) several times in small groups, both to get an introduction to handling that specific species and to relate findings in the examination of the animals to physiological processes. The students also follow clinical work at VTH or extramural clinics for one day or evening. Students also visit the research farm Lövsta in small groups, following the staff and the work on the dairy farm. In their second year, students have dose calculation exercises and training in prescribing drugs to clients.

During the third year, an introduction to clinical consultation and clinical work is given, with anatomy as the underlying basis for clinical examination and diagnostic imaging. The students then begin training in clinical examinations. The course includes practical exercises, e.g. on performing ECG and taking blood pressure in dogs, and performing clinical examinations, including palpation exercises, in horses and dogs.

Introductory lectures are held on clinical work and clinical consultation, including communication and professional development. There is also an exercise in which the student observes how a veterinarian communicates with an animal owner. Thereafter, the students perform role-plays in clinical scenarios, where they may act as animal owner, veterinarian or as observer, practising communication and giving feedback. At the end of the course, another role-play with three different cases is performed by an actor, a veterinarian and a veterinary nurse while the students observe, note their observations and then discuss their impressions with the others involved, including the presenters and clinically active veterinarians and nurses. This is done together with the third-year Veterinary Nurse students, training the interdisciplinary work. The exercises are mandatory, but examination of the students' ability to perform clinical examinations is conducted in the following semester.

At the end of their pre-clinical training, the students get an introduction to diagnostic imaging. Lectures are given on techniques, methods and safety, as well as interpretation of radiographs. Students work independently with online-based exercises, followed by mandatory follow-up seminars. Students also work in *base groups* with radiograph interpretation of authentic cases from the clinic. They have an online-based multiple-choice questions (MCQ) test on technical and safety aspects and a station exam mainly covering practical aspects, consisting of radiographs in which the students have to identify normal anatomical structures and understand technical aspects of radiographic methods.

An 'introduction to clinical studies' course is given during autumn semester in the fourth year, immediately before the beginning of the clinical rotation year. The course provides basic

knowledge and proficiency for the student to be able to assimilate theoretical and practical education in clinical sciences. It contains theoretical components such as lectures and seminars, as well as practical exercises in the form of laboratory, handling, examination and sampling methods, basic training of anaesthesia induction, and handling and administration of pharmaceuticals. The exercises are again carried out on organs and on live animals but also on dummies and via simulation programs in CTC. Gynaecological examination of horses, cattle and dogs is included in the course, as is obstetrics, with practical training of assistance during parturition and finally udder examination, palpation and milk sampling on cows. Models, cadavers and organs are used for the latter. Operating room procedures and suturing techniques are taught and then practised in CTC.

Description of the core clinical rotations and emergency services (both intra-mural VTH and ambulatory clinics) and the direct involvement of undergraduate students in these

A graphical presentation of the clinical rotation year is provided in Appendix 3.2.
Since the last inspection, *Anaesthesiology* has become a specific course within the clinical rotation. Separate training during the course is performed, as well as focusing on anaesthesia during the surgical training in small animals, horses and ruminants. Care is taken to provide practical training on e.g. intubation and monitoring of anaesthesia during surgery, all supervised by a teaching veterinarian. Students are trained on cadavers at CTC before starting at the clinical rotation.
Veterinary professional development is a very valuable addition since the last accreditation. Here students focus on e.g. client communication, legal framework within the veterinary profession and euthanasia – students' own perceptions and how to handle client communication and grief and sustainable work life. There is also a student-driven clinic at the Small Animal Clinic, where fifth-year veterinary students together with third-year veterinary nurse students (final year) host a clinic where first opinion practice management is trained with less complicated cases, under supervision of a teacher who remains in the background, but is always accessible for questions from students. This gives the students training in interdisciplinary teamwork, practice management and communication. The students also have a module where they reflect on cases seen at the clinic under supervision by e.g. an Associate Professor in animal ethics. Here pre-clinical, more theoretical, knowledge of animal welfare, animal protection and ethics is applied by students in practical, real-life situations. These three topics are therefore integrated in all clinical modules, but are covered in greater depth in a specific animal ethics and welfare module.
During the clinical rotation, the students are divided into smaller groups, with 5-25 students in each "subcourse". During the subcourses, the students are further divided. For some particular rotations in intensive care or surgery, the group size can be as small as 2-4 students, to optimise hands-on training and reduce stress on animals, as the rooms where this clinical training is conducted are small. For certain procedures, all corresponding to specific Day One Competences, the students have a log-book, which the supervising teacher signs and dates when the procedure has been accurately performed. The log-books are collected and checked by the course leader and the examiner at the end of the clinical rotation.

In both *Ruminant and Porcine medicine*, the teaching consists of a mixture of lectures, seminars and farm visits, led by 1-2 teachers. In ruminant medicine, practical sessions take place either at VHC or Lövsta. During 15 sessions spread over seven weeks of training in ruminant medicine, the students participate in clinic activities, by collecting anamnesis from animal owners, examining clinical cases, performing a diagnosis, reasoning on differential diagnoses, implementing treatments (including participation in surgery), identifying preventive measures

at the individual and herd level and reflecting on any relevant aspects around the cases at rounds, such as on epidemiology, pathogenesis, laboratory analyses, etc.
In porcine medicine, 6-8 farm visits are made, led by 1-2 teachers. At the Swedish Livestock Research Centre at Lövsta, the students are trained in clinical examinations, immobilisation techniques, subcutaneous and intramuscular injections and blood sampling performed in conjunction with health certification of herd SPF status. On three subsequent farm visits, the students perform clinical examinations, diagnose and treat individual pigs (sows, piglets, growers, and finishers) and also get an introduction to herd health management. On another visit to Lövsta, the students are specifically trained in performing ViLA (conditional medical treatments), a major form of medical treatment on Swedish pig farms. On the remaining farm visits, the students focus on herd health management, preferably visiting different varieties of pig farms. The students must, individually or pairwise, write a report on each visit, covering all aspects of the production and including 1-2 relevant recommendations at herd level.
In the *Small animal and Equine clinical rotations*, students spend time at different stations: the outpatient medicine and surgery clinics, the emergency unit, the stationary care unit and the minor surgery clinic. They also participate in on-call rotation, and finally different types of clinical seminars. The activities include clinical training in obtaining a case history, clinical examination, making a diagnosis, suggesting treatment strategies, prescribing medications and other treatments and keeping records. The courses also include performing a variety of surgical procedures under supervision, as well as emergency and critical care procedures. During the small animal rotation, the students also specifically train in owner communication during a consultation with less complicated procedures with a supervising teacher present in the room and providing feedback to the students.
In *Ambulatory practice*, 3-4 students/car follow one teacher out on farm and stable visits. Students pack the equipment and prepare the cars before departure and on the farm take a case history and perform clinical examinations and treatments, under supervision of the veterinarian. Back at VHC, the students clean instruments and other equipment, refill medical supplies and write records before the day ends. Due to a decreasing number of farm animals in the vicinity of the Uppsala campus and the coming expansion project of the veterinary program, a solution where the students perform their ambulatory practice extramurally is planned. Here SLU will partner up with the Swedish Board of Agriculture and its nation-wide organisation of general practitioners (District Veterinarians). A couple of veterinary stations will be identified with a sufficient case load and the staff will be given compulsory pedagogic academic training by SLU to fulfil the criteria to become teachers in field practice.
The students also learn to diagnose, treat and prevent various *Reproductive* conditions in companion animals, horses, pigs and cattle, both on individual and herd health level. The training is provided in the form of seminars, group discussions, demonstrations and theoretical and practical group briefings. The practical training includes working with training dummies, organs, healthy and diseased animals at VHC and at Lövsta (cattle and pigs).
Diagnostic imaging teaching is provided as seminars, rounds, theoretical and practical exercises and web-based case exercises. Students participate in practical exercises concerning radiation safety methods, take radiographs of small animals and horses, and practise writing radiology reports. During the entire clinical rotation, students also follow their equine and companion animal patients to diagnostic imaging if that is part of the diagnostic plan and assist in performing the examinations. Finally, they participate (or observe) the work of the veterinarian in interpreting and responding to radiographs of patients.
In *Diagnostic pathology*, teaching is based on necropsies of clinical cases and includes the de facto necropsy work, presentation of necropsy cases and discussing plausible pathogenesis during rounds and writing of necropsy reports. The students also have a briefing on how to collect and handle organ samples for histopathology. The daily practical necropsy is supervised

by one teacher and a senior pathologist is responsible for the student rounds. There are also some digital cases with macroscopic pictures and scanned histopathology slides that the students can work with in the event of a lack of clinical cases. During the 3-week course, each student also works more in-depth with one of their cases and presents it in a case seminar during the last day.
Clinical pharmacology and Clinical pathology are integrated in the clinical rotation, In clinical pharmacology, the students are taught about indications, contra-indications, interactions and side-effect profiles for the drug groups relevant in veterinary medicine for companion animals and horses, to evaluate the choice of drug group and drug substance based on both the properties of the drug and the clinical situation. In clinical pathology, they describe and perform basic quality work within clinical chemical laboratory diagnostics, explain the importance of biological and analytical variation when interpreting common clinical chemical test results and examine, assess and interpret the most clinically relevant changes in blood smears, urine samples and abdominal fluid.

Description (timing, group size per teacher, ...) of the teaching in slaughterhouses and in premises for the production, processing, distribution/sale or consumption of food of animal origin

The students visit slaughterhouses twice during their third year, both times in groups of 25 together with a teacher. While there, they are divided into four groups. In the course 'Population medicine', they go to a slaughterhouse in southern Sweden. In the course 'Food safety', they visit Lövsta slaughterhouse for an introduction to where they will later have their practical training in food inspection and control.
In the clinical rotation in fourth and fifth year, the course 'Meat inspection and food control' focuses on food safety and its importance for the consumer. The emphasis is on food safety in slaughterhouses and on processed foods of animal origin. During one week at Lövsta slaughterhouse, the students work in groups of 3-5 together with one teacher and–receive practical training in performing verification of food chain information, ante-mortem inspection including animal welfare monitoring, and post- mortem inspection of carcasses and organs. They also carry out sampling of intestinal lymph nodes, as part of the national Salmonella control program. Later in the clinical rotation, this is followed by two weeks where the students, in groups of 15-20, practise inspection as a control method and train in developing a HACCP plan.
During the exercises, the students practise assessing abattoir waste and animal by-products and how an audit is performed. They practise meat inspection and assessment using case scenarios. The combination of practical and case training means that after the course, the students are able to assess and make a decision on the handling of live animals and the use of meat and animal products in accordance with applicable regulations and how to conduct inspections and audits of slaughterhouses. One study visit in a meat processing plant is made during the course. The visit focuses on manufacturing of meat products and food safety. All teaching is performed with regard to public health, ethical and, to a certain extent, also environmental aspects.

In first year, small groups of students spend half a day at Lövsta livestock research centre following the daily work of a farm hand for the herd of dairy cows. The students also follow clinical work during one day or evening at extramural clinics, including both small and production animals.
All students perform a mandatory self-directed 2-day practice on a cattle, sheep or pig farm in third year. The practice should be performed with a commercial farm, or in a school with its own livestock (secondary school) or equivalent, and give a good insight into Swedish animal production.

The student submits a brief written description of the farm, type of animal husbandry and tasks performed. The practice is followed up by a mandatory group work and subsequent discussion in which the student's impressions of livestock, animal care and handling and animal health and welfare are addressed.
During third year, the students visit several different farms in southern Sweden in smaller groups together with a teacher, with the focus on animal husbandry.

Description of procedures for selection of Electives by students and the degree of freedom in their choice (e.g. what happens when too many students select one specific track)
The experiences from the 2007 curriculum resulted in a marked reduction in electives in the new curriculum (VP 17). It was concluded that 5.5 years is just enough to provide a broad and solid foundation in veterinary medicine in combination with an in-depth (elective) degree project. Experiences from the 2007 curriculum also clearly showed the value of active supervision with feedback during clinical training, and the training of generic skills (communication, meeting the client, etc.), so these components have been brought forward and strengthened in the new curriculum (VP 23).
In the current curriculum VP 17 and the upcoming VP 23, there are no tracks (specialisations). Hence, there is not an issue with re-deciding track when too many students select one specific track. The students have the possibility to choose topic for their Master's thesis in their last semester. The supervisors also suggest potential areas at the introduction/information session on Master's thesis projects. In first year, the students also follow clinical work of their own choice during one day or evening at extramural clinics, including both small and production animals.
All students perform a mandatory self-directed two days of practice on a cattle, sheep or pig farm in third year. During two weeks of the clinical rotation, the students may freely choose to follow external veterinarians in their daily work. This may include veterinary clinics, relevant agencies, laboratories or zoological gardens.

Description of the procedures (e.g. logbooks) used to ascertain achievement of each core practical/clinical activity (pre-clinical, clinical, ambulatory clinics, EPT) by all students
In certain clinical courses all students receive a specially designed record sheet (log-book) where all compulsory tasks are listed (based on Day One Competences). On the sheet, attendance is recorded, and completion of listed tasks is certified by the teacher. When all the tasks are completed and signed, the examiner of the course verifies the records before they are submitted to the course administration to be registered and archived.

In most courses, the teachers document the students' attendance and achievements. The documentation is submitted to the course administration for official registration and then archived.
Learning activities ensuring that each individual student achieves the first day competences during the preclinical years are for example written reports, oral presentations and seminars and practical activities such as laboratory work and study visits. These learning activities are followed up by registration of attendance and, when relevant, by submitting lab reports, written essays or case reports. Within pharmacology specifically, the ability to correctly calculate doses according to the drugs' SPCs is tested in an automated format on the students' digital learning platform. In anatomy, dissections are mostly non-mandatory but are summatively assessed e with practical tests. Group works are compulsory, and teacher checks active attendance.

In elective clinical veterinary practice EPT, students in the clinical rotation in fourth and fifth year participate in two weeks of mandatory elective practical training in a veterinary practice (e.g. authorities, production, horses, exotics or small animals). The students make contact directly with the practices. The student participates in veterinary activities during these weeks under supervision (participation includes auscultation). If desired and practical, the student can also attend on-call duties. A report is filed and approved by the teacher responsible.
Course leaders are contact persons for EPT students on their respective courses. Students are insured through SLU during their studies, which also applies during EPT.

Standard 3.2: Each study program 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 program 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 a teaching 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 lifelong learning.

3.2.1. Description of how the study program meets the objectives

The program and study plan in the field of veterinary medicine at SLU enables the students to achieve all learning goals. The entire Veterinary Medicine program is closely related and continuously updated to the results of scientific activities and evidence-based veterinary medicine, as well as One Health. The teaching, which consistently focuses on achieving the agreed learning goals, is carried out by people with professional and/or scientific competence and experience level adapted to the specific subject. We also want to emphasise that training in order to reach the pre-set learning goals is mainly carried out by scientifically skilled veterinarians with pedagogic training, or otherwise by scientifically and pedagogically trained experts in their discipline, regardless of whether this applies to preclinical or clinical subjects. Adaptation and prioritisation of the content and methods used in education are monitored by the subject representatives who, based on their professional knowledge, pedagogic competence, teaching experience and scientific achievements, develop and verify the thematic scope of the classes and update the content of the curriculum together with the course leaders and Program Director of Studies.
During the work on the new curriculum, a thorough mapping was performed highlighting how different courses contribute to fulfilment of the objectives of the program and the ESEVT Day One Competences Appendix 3.3.

3.2.2. Description of how the study program promotes an academic environment conducive to learning

The Swedish Ordinance of Higher Education stipulates that university education must rest on a solid foundation of active research. This means that teachers are also expected to be active scientists. Around 200 academic staff at VH Faculty have a PhD degree and more than 100 have a ‘docentship’ (Associate Professor, see below). At VTH, the veterinary clinicians are mainly involved in clinical work and may also instruct students. SLU offers several pedagogic courses for teaching staff, including one specifically aimed for clinical supervision.

With a few exceptions, academic staff holding teaching positions are engaged in both research and teaching. This means that it is almost impossible to divide the staff into individuals who teach and those who do research. As a rule of thumb, it can be said that among teachers and instructors:

- Professors at VH Faculty perform a higher proportion of teaching than usual (compared with other Swedish universities) in first- and second-level education and are very involved as supervisors of degree projects and of PhD students.
- Senior lecturers (*universitetslektor*) are expected to perform approximately half-time education and half-time research.
- Lecturers (*universitetsadjunkt*) are mainly engaged in first- and second-level education.
- Postdoctorate (*postdoktor*) is a limited-term (two-year) employment intended for researchers who have obtained a doctorate in the past three years.
- Doctoral studentship (*doktorandtjänst*) is a position for third-level (PhD) students, who have a four-year appointment for research training.
- Veterinary clinicians (*klinikveterinär*) are employed by VTH for clinical work and may also instruct and supervise students.
- Researchers (*forskare*), academic personnel whose main task is to conduct research work, may from time to time participate in teaching.

"Excellent teacher" is an SLU title awarded for particularly skilled and pedagogically aware teachers. So far, eight of the 24 teachers at SLU holding that award are from VH Faculty.

3.2.3 Description of how the study program encourages and prepares students for self-learning and lifelong learning

The third educational aim is focused on continuing education and lifelong learning. SLU has the goal of lifelong learning in its strategy. From first year, students are encouraged to apply lifelong learning strategies. These include identifying gaps in knowledge and practical skills, and planning actions to fill the gaps. Our Clinical Training Centre (CTC) is one way of achieving this and is accessible for students for self-learning, sometimes with a supervisor present. Other types of self-learning activities are 'base group' activities used for cooperative/collaborative learning, as well as case work, project work, peer feedback, self-reflection etc. All course objectives are presented on course pages at the Canvas LMS and on student websites. The program objectives (found on student website) include: "demonstrate the ability to assess one's own limits in professional practice" and "demonstrate the ability to independently identify their need for additional knowledge and continuously develop their skills". As part of teaching of soft skills during a theme of 'professional approach', we also discuss e.g. employability using the VetSet2Go platform, highlighting different capabilities important for sustainable work life, including continuing learning.

VH Faculty also has a specific coordinator who companies can address and who can tailor specific programs relevant for competence development of their employees. Moreover, VH Faculty offers several courses for veterinarians (Artificial insemination), physiotherapists (Sports and Rehabilitation Medicine) and veterinarians and human dentists (Equine odontology). Many of the specialists and academic experts at VH Faculty are also continuously engaged in courses outside the university provided by external education service providers, underpinning the impact and appreciation our teachers and researchers attract both nationally and internationally.

The VH Faculty strategy also stresses the need to work for increased cooperation and mobility between academia, industry, organisations and government. VH Faculty and SLU have signed a number of letters of intent with major stakeholders within the industry of veterinary medicine

and public health, including Lantmännen, IVC-Evidensia and AniCura. These stakeholders are also active in the EU and the USA, hence providing a possibility of student and teacher exchanges internationally.

Standard 3.3: Program learning outcomes must:

- **ensure the effective alignment of all content, teaching, learning and assessment activities of the degree program 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.**

Description of the educational aims and strategy in order to produce a cohesive framework and to achieve the learning outcomes

Educational aims are set at program level and for individual courses. They are shown both on SLU websites and on Canvas LMS. For most courses, a more detailed plan with explicit descriptions of the objectives and learning outcomes is presented, in order to help and guide the students in their learning process. The learning goals of the program courses are aligned with the EAEVE Day One Competences. The Veterinary Medicine program has different forms of teaching methodology: lectures, practical training, farm, laboratory and computer exercises, seminars, training on dummies and clinical rotation and EPT. Of the total of 5232 teaching hours, 1610 (30.8%) take the form of lectures, 2363 (45.2%) take the form of exercises, 912 (17.4%) as clinical animal work, 72 (1.4%) take the form of EPT and miscellaneous 275 (5.2%). The educational methods aim to achieve the agreed learning goals and encourage the students to work independently. This is done by preparing and holding presentations, discussions, carrying out experiments, measurements and observations in the laboratory, writing reports on experiments, examination of patients and performing medical and veterinary activities under the supervision of an academic teacher. Throughout the program, the students are assessed in many different ways, using a variety of different forms of examination, including practical and theoretical, oral and written.

The majority of all lectures are held by academic teachers with pedagogic training, and subject specialists (in some cases external lecturers from authorities, universities and veterinary practitioners). A pedagogic course focusing on grading and assessment is mandatory for all teachers performing the role of examiner. This course, as well as other pedagogic courses for teachers, are arranged by SLU Learning and Digitalisation, at the Unit for Educational Development. All external teachers must have contact with the course leader before their participation in the training and adapt their teaching so that it is harmonised with the current learning outcomes.

Description of how the VEE ensures that the learning outcomes fit with the ESEVT Day One Competences

A collaborative work from 2016, reported in the last SER from SLU, comprehensively reviewed the way in which Swedish veterinary education met the requirements outlined in Annex IV. The list of recommended essential competences at graduation included: Day One Competences (taking the directive for SLU and the EU Directive 2005/36 as amended by Directive EC and 2013/55/EU and its Annex V.4.1 into consideration). It resulted in a report that broke down the overall Day One Competences descriptions into measurable goals that could be evaluated and examined. This formed the platform for continued renewal work

regarding curriculum, course descriptions and educational goals, and supported in the creation of the new curriculum, VP 23. During the work with the new curriculum, a thorough mapping was performed, highlighting how different courses contribute to fulfilment of the objectives of the program and the ESEVT Day One Competences (Appendix 3.3).
As described above (section 3.1), certain clinical courses also use a specially designed record sheet (log-book) where all compulsory tasks are listed based on Day One Competences.

Description of how (procedures) and by whom (description of the committee structure) the learning outcomes are decided, communicated to staff, students and stakeholders, assessed and revised

General learning outcomes

The general learning outcomes common to all first- and second-cycle courses and study programs are described in the Swedish Higher Education Act (Chapter 1, Sections 8 and 9).

Specific learning outcomes for a Degree of Master of Science in Veterinary Medicine

In accordance with the Annex to the Ordinance for the Swedish University of Agricultural Sciences, the student must achieve the learning outcomes for a Degree of Master of Science in Veterinary Medicine described in detail in section 3.1.1. The learning outcomes are suggested by PN-VH, which also ensures that they do not compromise the aim of program, and then decided upon by the Program Board at SLU. Changes to learning goals in curricula and program courses must be prepared by the program directors, and approved by the Program Board. All updates are published on the SLU website.

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 ongoing reviews and periodic in-depth reviews of the curriculum at least every seven years by involving staff, students and stakeholders; these reviews must lead to continuous improvement of the curriculum. 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.**

In a 330 ECTS program such as Veterinary Medicine, there are obvious risks of curricular overlaps, redundancies, omissions and even lack of consistency. If present, deficiencies must be identified and corrected. The Program Director of Studies is the person responsible for continuous coordination between subjects and courses. In the Program Committee, departmental Directors of Studies meet regularly to identify and rectify curricular weaknesses. Students attending the courses take part in this work. Specific course representatives are responsible for collecting student views and submit a report to the course leader and then further to the Study Program Director and finally to PN-VH. Apart from observations from current courses, important sources of information/input are course and program evaluations and external reviews. Depending on the extent of the actions needed, decisions may be taken immediately at course/department level or handled by PN-VH. It should be stressed that student members participate in these Boards on both department and faculty level.

Requests for change are commonly raised by teachers and/or students. If deemed necessary, PN-VH appoints a working group which collaborates with different departments and with student representatives to suggest improvements. Often, external stakeholders are invited.
"Major" changes to the program curriculum (e.g. new syllabus) are decided at University level by the Program Board (PN-VH) is responsible for preparing and submitting supporting documentation.
"Medium" changes to the program, including course syllabuses, are decided by PN-VH.
"Minor" revisions to individual courses during the academic year may be decided by the Program Director of Studies.

Staff, students and stakeholders are represented in the decision-making bodies, and external stakeholders also in the advisory groups. In addition to the official information routes, communication within the University is carried out via Faculty newsletters, Heads of Departments' weekly staff meetings, and the Students' Unions. Information, including minutes of meetings, from all University and Faculty decision-making bodies is also available on the website "Information and services for employees at SLU". The Program Committee is another key player when it comes to communicating information regarding the program to teachers and students.
Implementation of changes to the core curriculum is the responsibility of PN-VH, the Program Director of Studies with support from the Program Committee, the departmental Directors of Studies, and the respective course leaders.
Monitoring and evaluation of the curriculum is carried out in several ways. Essentially, assessments are made continuously by teachers and students, and at longer intervals by the University and external bodies (e.g. ESEVT, UKÄ). For details, see section 1.4.
Initiatives for revision of the curriculum may come from course, department, faculty or university level – or from outside the university. Depending on the extent and scope of the proposed change(s), revisions are handled and decided on as described above.

Standard 3.5: Elective Practical Training (EPT) includes compulsory training activities that each student must achieve before graduation to complement and strengthen their core theoretical and practical academic education, inter alia by enhancing their experience, professional knowledge and soft skills. Like all elective activities, its contents may vary from one undergraduate student to another.
EPT is organised either extra-murally with the student being under the direct supervision of a qualified person (e.g. a veterinary practitioner) or intra-murally, with the student being under the supervision of a teaching staff or a qualified person.
EPT itself cannot replace the Core Clinical Training (CCT) under the close supervision of teaching staff (e.g. ambulatory clinics, herd health management, practical training in VPH (including Food Safety and Quality (FSQ)).

In their first year, students also auscultate at an external clinic or within production animals for one day or evening.

All third-year students perform a mandatory self-directed two-day practice on a cattle, sheep or pig farm. The practice should be performed with a commercial farm, or in a school with its own livestock (secondary school) or equivalent, and give a good insight into Swedish animal production.

The student submits a brief written description of the farm, type of animal husbandry and tasks performed. The practice is followed up by mandatory group work and subsequent discussion

in which the student's impressions of livestock, animal care and handling and animal health and welfare are addressed. In elective clinical veterinary practice, students in clinical rotations in the fourth and fifth years participate in two weeks of compulsory (external) elective practical training in a veterinary practice (e.g. authorities, production, horses, exotics or small animals). The students make contact directly with the veterinary practice and participate in veterinary activities during the two weeks, under supervision (participation also includes auscultation). If desired and practical, the student can also attend on-call duties. A report must be filed and approved by the responsible teacher.

Course leaders are contact persons for EPT on their respective courses. Students are insured through SLU during their studies, which also applies during EPT.

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

Fields of Practice		**Minimum duration (weeks)**	**Year of program**
Companion animals or production animals (pre-clinical)	Veterinary clinic. Students may also choose production animals / Animal husbandry	0,1-0,2 weeks (4-7 hours)	1
Production animals (pre-clinical)	Animal husbandry	0,4 weeks (15 hours)	2
Companion animals or production animals (clinical)	Clinical practice (private practice or clinic; companion animals or production animals or other veterinary workplace)	2 weeks (60-80 hours)	4-5
VPH (including FSQ)	0		
Others (specify)	0		

Standard 3.6: The EPT providers must meet the relevant national Veterinary Practice Standards, have an agreement with the VEE and the student (stating 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 program.
There must be a member of the teaching staff responsible for the overall supervision of the EPT, including liaison with EPT providers.

3.6.1 Description of how the EPT providers are linked to the VEE (a copy of one of the agreements to be provided in the appendices), assess the students and provide feedback to the VEE

A contract with the host is established for the clinical EPT. All hosts (both clinical and pre-clinical) are also provided with information regarding the learning goals, insurance matters, contact persons at the VEE, what is expected from the supervisor at the EPT and other practical issues. Specific information about what to do if an accident should occur to the student is also provided. The students find their own EPT hosts matching specific professional quality criteria that are set by the course organiser. Upon completion of the EPT period, the host certifies that the student has performed the EPT and the host has the opportunity to assess the student´s performance. Thus, supervisors of all EPT are invited to give feedback to the VEE. The student evaluates the EPT as part of the regular course evaluation process. The course leader reviews evaluations from both hosts and students. At any time during the EPT, students and hosts may contact the course leader or director of studies in case of professional or academic issues. A copy of one of the contracts/agreements is provided in the *Appendix 3.4a* in Swedish and one

in English (3b) for Vet Nurses, with very similar wording for easier reading by the Visitation Team.

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

Pre-clinical year 1: Elisabeth Persson, DVM, PhD, assistant professor
Pre-clinical year 2-3: Stefan Gunnarsson, DVM, PhD, assistant professor
Rebecka Westin, DVM, PhD, assistant professor
Clinical years 4-5: Helene Hamlin, DVM, PhD, assistant professor
Karin Vargmar, DVM, PhD, lecturer
Lina Lindström, DVM

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.

3.7.1. Description of the implications of students in the preparation, recording and assessment of their EPT

When the students find their own EPT hosts, they have to make sure that they are matching specific professional quality criteria that are set by the course organiser. In case there are hesitations about fulfilment of the criteria, the students contact the course leader for guidance. The students are also obliged to pass on the required information (see above) to the supervisor of the EPT and they also obtain information about if special clothing/equipment is needed. During the EPT, an academic reflection report of the experiences is mandatory. The EPT preparing, recordings and reports/reflections, assessments and evaluation activities are posted on the respective course pages on SLU Canvas learning system. After completing the clinical EPT, all students participate at a mandatory concluding discussion about their experiences. At this occasion students may also raise complaints. The course leader and the examining teacher of the course assess the student´s EPT performance on the basis of the submitted reports and reflection papers, the host evaluations and the concluding discussion.

3.7.2. Description of the complaint process in place concerning EPT

Complaints concerning EPT and the related procedures are the same as those that apply to other courses and exams, with anonymous evaluations of the course. The course evaluations are read by, and officially commented upon, by both the course leader and a representative from the students. Course evaluations are discussed at the program board and at the program committee. Complaints about the EPT host are directed to the course leader and to the director of studies at the department, and appropriate actions will be taken depending on the nature of the case. As mentioned above, students may also orally evaluate the EPT at the concluding discussion about the experiences. Both the course leader and the examining teacher are present at this occasion, moderating the discussion.

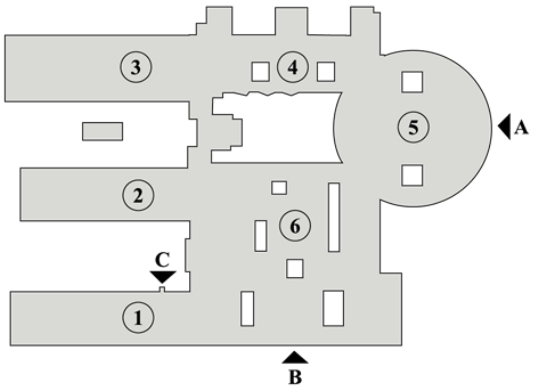
Area 4. Facilities and equipment

Standard 4.1: All aspects of the physical facilities must provide an environment conducive to learning, including internet access at all relevant sites where theoretical, practical and

clinical education takes place. The VEE must have a clear strategy and program for maintaining and upgrading its buildings and equipment. Facilities must comply with all ,relevant legislation including health, safety, biosecurity, accessibility to people including students with a disability, and EU animal welfare and care standards.

SLU, like all other universities in Sweden, has access to a support unit (*Funka*) that provides specific help to ensure accessibility to people with reduced mobility. Swedish construction laws, particularly securing accessibility, are important both for students and staff at SLU. SLU's main campus is Ultuna, 5 km south of central Uppsala. This is also the location of the Vice-Chancellor's office and most of the administration. The faculties of Natural Resources and Agricultural Sciences, and of Veterinary Medicine and Animal Science, are also located at Campus Ultuna. Many of SLU's degree programs are given here.
SLU's Veterinary Medicine program is, with a few exceptions, located in Uppsala, primarily at the Centre for Veterinary Medicine and Animal Science (VHC), but also at Lövsta where the Swedish Livestock Research Centre and the slaughterhouse are situated.

VHC - the Centre for Veterinary Medicine and Animal Science
VHC is the shared workplace of the departments at VH Faculty and VTH. It is also the central focus for the 1000 or so students taking one of the courses or degree programs offered by VH Faculty. The building consists of six connected sections. The gross area is 53,100 m^2 with a floor space of 41,600 m^2, and there are 2319 rooms, of which 391 are offices. A detailed presentation is provided in *Appendix* "*Maps of the VEE _ VHC*". Due to the expansion of the Veterinary Medicine program, VHC will be extended with new infrastructures to fit the purpose.



A: Main entrance for staff, students and visitors
B: Animal hospital entrance for small animals
C: Animal hospital entrance for horses

1: Horse clinic
2: Stables for horse patients
3: Stables for teaching and research
4: Special facilities for pathology and anatomy
5: Laboratories, offices and teaching facilities
6: Animal hospital clinics

Standard 4.2: Lecture theatres, teaching laboratories, tutorial rooms, clinical facilities and other teaching spaces must be adequate in number and size, equipped for instructional purposes and 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 teaching and support staff to support their teaching and research efforts.
VHF has an adequate number of lecture halls, laboratories, training facilities, self-learning and seminar rooms for the Veterinary Medicine program. The lecture halls, laboratories and training facilities are well-equipped.

The entire entrance level of Building (Bldg.) 5 is open to the public. Access to the entrance level of VHC is controlled by the entrance door opening hours (Monday-Friday, 07.30-17.30 h). Admission outside opening hours and to other parts of VHC is controlled by access card authorisation. Depending on course attended, students have access to different parts of the building.

Education Service Office, VHC
The Education Service Office (VHC) is situated in Bldg. 4, third floor. It is an interdepartmental unit with responsibility for supporting VH Faculty students and departments with the administration of first- and second-cycle education.

4.2.1. Lecture halls, anatomy theatres and computer labs

Ultuna Campus
The VHC premises are presented below. Within Ultuna campus there are additional resources that can be utilised for the Veterinary Medicine program. These include the Aula (508 seats), 32 auditoriums/lecture halls (22-208 seats), eight computer labs (6-24 seats), 28 group study rooms (4-10 seats) and three "student workspaces" (10 seats each). The two latter categories can be booked by students.

VHC
Next to the entrance hall of Bldg. 5 there are five **auditoriums/lecture halls** (40-150 seats, total 470), two **computer labs** (2 x 25 seats) and one large '**wet lab**' (60 seats). In Bldg. 4, there are two **amphitheatres,** for anatomy and pathology demonstrations, respectively.

4.2.2. Group study rooms

On the entrance level of Bldg. 5 and in Bldg. 4, there are 20 group rooms for 6-12 persons that are used for teaching and which can also be booked by students using the room booking system. Twelve of the group rooms are equipped with video monitors or projectors, some of them also with desktop computers and microscopy systems. In the clinical area, close to the stables in Bldgs. 2 and 3, there are two divisible **seminar rooms** with 25+25 seats each and a group room with 16 seats. The students can wear their clinic clothes in these rooms.

4.2.3. Premises for practical work

Wet laboratory
Ymer is a laboratory for benchtop experiments handling biological material and chemicals.

Anatomy
In Bldg. 4, special facilities for anatomy and pathology are located next to each other. The part of the building where anatomy is taught includes one amphitheatre for 60 students (video equipment) and, upstairs, six dissection rooms with two tables each (and video screens). For carcasses and organs there is a receiving area, a large frozen storage area (-18 ºC), a cooled storage area, a preparation/thawing room, rooms for specimen preparation and handling (e.g. plastination) and two cooled waste rooms. The passage into the 'wet' area includes changing rooms (lockers), laundry and rest rooms.

On the third floor, just outside the 'wet' anatomy area, there are three divisible group study rooms (20-24 seats each, video screens), two specimen rooms and changing rooms (lockers). One of the group study rooms is used for the Sectra IDS7 workstation, see section 4.1.7.1.

Pathology
The pathology part of Bldg. 4 includes one amphitheatre for 60 students (video equipment) and two necropsy rooms (one large and one small). For carcasses, there is a reception and preparation area, a cold storage area, rooms for specimen preparation and a cooled waste room.

There is also a veterinary office, a writing room for students, a technicians' workroom and storage facilities. To meet the demands of an increased number of students, an adjacent freezer to store carcasses is under construction. The passage into the pathology area includes changing rooms (lockers), a hygiene barrier and rest rooms. Histopathology laboratories are situated in Bldg. 5, on the 4th floor.

Clinical Training Centre - CTC
CTC is situated on the third floor of Bldg. 4. There are two rooms for student activities (up to approx. 14 students in each), one observation room/office and one utility room. In addition, there is a 75 m^2 training room in Bldg. 3. CTC is used by veterinary and veterinary nurse students. Due to the expansion of the Veterinary Medicine program, SLU is increasing the CTC resource with another building, as well as more models in companion animals, equines and food animals.

Adjacent to the anatomy facility, there is a hall with dummies for large animal dystocia (calving) training and a room for bench training of large animal gynaecological examination. These rooms are also used for other teaching activities.

Experimental surgery
In Bldg. 6 there are premises for experimental surgery which are also used for practical training of veterinary medicine and veterinary nurse students. The large animal part includes a preparation (anaesthesia) room, an operating theatre and a recovery room. The small animal section comprises a scrub room, a preparation (anaesthesia) room and three operating rooms.

4.2.3.a Hospitalised animals
For small animals and horses, see section 4.1.4.1. For ruminants, see section 4.1.3.1.

4.2.4. Premises for other student-related activities

4.2.4.1. Study and self-learning
Group study rooms and other facilities, which are always (24/7) open for students, are described in the introduction to section 4.2. Basic anatomy facilities are available at any time for students, but the supply and diversity of available material varies (e.g. osteology and plastinated models always available, fresh organs/soft tissue material etc. only during relevant courses). On the VHC entrance floor and in the University Library, there is plenty of seating at tables suitable for work on laptops.

4.2.5. Restaurants and cafés Central Ultuna
Butiken Ulls hus **-** on the ground floor of Ulls hus. Serves coffee, tea, smoothies and other beverages, as well as pies, salads, sandwiches, etc. Open: Monday-Friday 08-16 h.
Café Moccado **–** on the ground floor of VHC. Serves coffee, tea, smoothies and other beverages, as well as pies, salads, sandwiches, etc. Open: Monday-Friday 08-16 h.
Restaurant Logen **-** on Almas allé 14. Lunch restaurant. Open: Monday-Friday 08-16 h.
Ull's restaurant - on Duhrevägen 8. Lunch restaurant. Open: Monday-Friday 09-15.30 h.
Different food trucks also commonly serve lunch food outside the VHC main entrance on weekdays.

North and South of Central Ultuna
Matverkstan - on Ulls väg 4, close to VMF. Open: Monday-Friday 08-15 h.
Ultuna Thai kiosk & kitchen - on Ulls väg 36. Open: Monday-Friday 08-18 h.

Lunch rooms
On the left-hand side within the main entrance to VHC there is a lunch room for students, which can seat 50. It is equipped with microwave ovens and fridges. There is also a coffee machine and snack and sandwich dispensers, which accept payment by card. At the far end of the atrium in Bldg. 5, there is a public café.

In the campus area there are an additional four student lunch rooms. VTH also has a lunch room for students undertaking their clinical rotations, which can accommodate 28 persons.

4.2.6. Changing rooms (lockers)

The passages for students and staff into the Ymer 'wet lab' and the anatomy and pathology facilities are all equipped with gender-separated changing rooms (lockers). To enter the stables in Bldg. 3 and the VTH clinics, students and staff have to change into clinic clothes in changing rooms (lockers) situated on the first floor of Bldg. 4.

4.2.7. Accommodation for on-call students

In the VTH clinics, there are three overnight rooms for on-call students, two beds each for the ambulatory, small animal and equine clinics.

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***
- ***take into account environmental sustainability***
- ***be designed to enhance learning.***

Premises for animal housing

4.3.1. Healthy animals

Centre for Veterinary Medicine and Animal Science – VHC

VHC Bldg. 3 includes a sealed-off area with separate stables for healthy animals used for teaching and research purposes. There are five stables for horses (total 22 boxes), one large ruminant/horse stable (5 boxes), one large ruminant stable (4 boxes), one tied-cow stable (8 places), one calf/small ruminants stable (6 boxes) and four swine stables (10 boxes each). There is also a large section housing a goat herd and stables for 25-30 dogs.

During the clinical rotation course, three stables are used for incoming ruminant patients. The ruminant clinic has a separate intake for outpatients. Access to the ruminant clinic area is restricted in accordance with the infection prevention and hygiene plan for the building.

Most stables are equipped with spaces for changes of clothing and footwear. Boots with steel cap and helmets (for equine and AI for bovine) are provided to all student and staff to provide a safe work environment. Adjacent to the stables is a minor surgical facility, three examination rooms with stocks (e.g. for gynaecological examination of large animals and for stallion semen sampling), a freezing room, a milking parlour and two small laboratories. There are also spaces for feed storage, for cleaning of animals, and for washing.

The outdoor facilities include a horse walker, seven yards for dogs, one goat yard, about 20 paddocks (gravel surface) and two larger pasture areas for large animals (i.e. horses).

An update of the ruminant clinic at VHC is planned due to the expansion of the Veterinary Medicine program. Moreover, increased focus on teaching at the Swedish Livestock Research Centre at Lövsta is anticipated.

The Swedish Livestock Research Centre – Lövsta

The Swedish Livestock Research Centre was opened in 2012 and is situated 8 km east of the SLU Ultuna Campus. It is a nationally important resource for research and education on dairy

cattle, pigs and poultry. Most students at VH Faculty will be trained at the Centre at some point during their education. For a detailed presentation of the Research Centre, see *Appendix "Maps of the VEE _Lovsta"*.
The *cattle facility* at Lövsta has room for 300 dairy cattle, plus recruitment animals. Milking is performed by an automatic milking system with milking robots. The 2022 annual production was 2908 tonnes of milk, with on average 11,107 kg energy-corrected milk (ECM) yield per cow.
The *pig herd* comprises 110 sows in integrated production. The pig facility also has 960 slaughter pig places and 96 recruitment places. Approximately 2500 pigs are fattened for slaughter each year.
The *poultry facility* allows for research on free-range laying hens, laying hens in cages and broiler chickens. Research on other poultry species is also possible.
There are strict infectious disease control rules for visitors. The Swedish Livestock Research Centre is quality- and environmentally-certified according to the ***ISO 9001:2008*** and ***ISO 14001:2004*** standards.

Röbäcksdalen Research Farm outside Umeå in Northern Sweden (63.81°N 20.23°E) is part of the Swedish Infrastructure for Ecosystem Science (SITES). The entire infrastructure encompasses 280 hectares of fields and pastures. Overall, the infrastructure at Röbäcksdalen provides excellent conditions for teaching and applied studies of crop cultivation, animal and veterinary sciences, soil science and climatology. The research farm has a dairy herd of 120 cows (Nordic Red) with average milk production of 11,000 kg ECM per cow and year. Feed intake, milk production, live weight and greenhouse gas emissions are automatically recorded on individual cow level.
At the field research station, about 40 field trials are conducted annually. The station also coordinates variety trials at three more field stations in northern Sweden, with the focus on crop science. At the research dairy facility, there are 120 dairy cows available for trials, focusing mainly on forage and sustainable food production.

Götala Beef and Lamb Centre, SLU's research facility for beef and lamb production, is located just outside Skara. There are two uninsulated barns which can accommodate 150 cattle in a deep straw system with individual recordings of feed intake and bodyweight. There are two barns for sheep, of which 26 ewes with lamb can be housed individually in one and group-housed sheep can be accommodated in the other. The arable land at Götala is run by SLU Lanna, and comprises in total 300 hectares. At Götala there are also 40 hectares of semi-natural grasslands used for grazing. Götala is used for research and teaching.

At ***Alnarps Södergård***, just outside Malmö, SLU has two special research facilities, one environment stable and one climate stable which can best be described as a climate chamber. Both are mothballed for the moment.

4.3.3. Hospitalised animals

For small animals and horses, see section 4.4.2. For ruminants, see section 4.3.1.

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 the standard of education and clinical research is compliant with all ESEVT Standards, e.g. research-based and evidence-based clinical training supervised by teaching 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 exceed the best available clinics in the private sector.
The VTH and any hospitals, practices and facilities which are involved with the core curriculum must be compliant with the ESEVT Standards and meet the relevant national Veterinary Practice Standards.

4.4.1. Veterinary Teaching Hospital, VTH

VTH, which occupies Bldgs. 1, 2 and 6 in VHC, is essential for training veterinary students and is a unique facility within Sweden. The premises are designed for the students to actively participate in animal care during the clinical part of their education. VTH is directly connected to the round building (Bldg. 5), enabling close collaboration between the hospital and the academic departments. Patients in the hospital provide the basis for education, research and development, while academic staff with specialist expertise can participate in clinical activities. The integration project has resulted in a merge of the VTH into the VH Faculty from January 1st, 2024. The description of VTH below mainly refers to the organisation structure during the evaluation academic years 2020/21-2022/23.

4.4.2. Small Animal Clinic

The VTH Small Animal Clinic occupies most of Bldg. 6. In 2022, it was open 24 hours a day, 7 days a week, during semester times, but with reduced opening hours during the summer break. The clinic provides emergency and planned veterinary care for primary and referred patients. In 2022, the total number of visits to the clinic was 23,123 (70% dog, 26% cat, 4% other), of which 72% were first visits and 28% were revisits to VTH. The clinic had about 106 full-time equivalent employees of different occupational categories in 2022, including veterinarians (30), veterinary nurses (28), animal keepers (19) and receptionists (7). The daily work at the clinic involves veterinary students on most of the days during semester time. Between semesters in the summer time, students may catch up on any days lost for clinical training during the teaching year. VTH also provide teaching of ERASMUS+ students from other VEE:s during Summer semester.
The outpatient clinic has 25 examination and treatment rooms, some of them designed and equipped for specific types of cases such as dermatology. In addition to the general examination and treatment rooms, the clinic has facilities for internal medicine, surgery, dermatology, cardiology, oncology, orthopaedics, dentistry and reproduction. Suspected infectious cases are referred directly to the infectious diseases intake, which has a separate entrance, waiting and treatment area, and a separate ward, to ensure high biosafety. The Small Animal Clinic is certified as a cat-friendly clinic; cats are separated from dogs in the waiting rooms, reception rooms and in the ward. At night-time, at least one veterinarian and one veterinary nurse are on duty, with responsibility for inpatients and emergency services.
Emergency analyses of samples, mainly for different blood parameters, are carried out in the clinic's emergency laboratory. Patients needing further care or investigation are hospitalised overnight for continuing investigation on the following day.
The inpatient ward consists of a general and an infectious section. The general section is divided into a surgical and a medical unit and consists of eight stables with a total of 30 places for dogs and 14 for cats. All stables have their own separate treatment room. For cats with feline

hyperthyroidism treated with radioactive iodine (I-131), there is a radiation-protected room for two patients.
Isolation and infectious diseases, see section 4.6.

The surgical unit consists of six operating rooms, three of which are intended for outpatient procedures such as castration of cats, extirpation of minor neoplasms, dental treatment and gastro/rectal endoscopy. The dental treatment room has capacity for two anaesthetised patients at a time and is equipped with two wall-mounted dental radiography installations, two fully equipped dental pillar units and a scanner image plate system compatible with PACS. The surgical unit is equipped with a mobile C-arm machine (Siemens Cios Alpha), which can be used for both orthopaedic and interventional surgery such as shunt surgery.
To minimise the risk for the staff working in the operating theatres being exposed to the harmful smoke that occurs e.g. when using diathermy, smoke evacuation units (Maquets Fumovac 900) reduce smoke and aerosol to a minimum. LED operation lighting provides optimum brightness and minimal shading for the surgeon. In the orthopaedic theatre, the lamp is equipped with a HD camera with zoom function and monitor on the wall, which allows students to follow surgical procedures.
At VTH, work is ongoing to reduce emissions from anaesthetic gases. As part of this, anaesthetic staff are trained in low-flow anaesthesia. The anaesthesia delivery system (Maquet Flow-i), with high requirements for gas dosing systems, respiratory systems and monitoring of ventilation parameters, is particularly suitable for this.
The Intensive Care Unit (IVA) is equipped with specialist apparatus such as oxygen supply, emergency trolley, infusion pumps, ECG, etc. There is also a blood bank available 24 hours a day.

4.4.3. Large Animal Clinic (Equine)

The Large Animal Clinic has an administrative part with a reception area, offices, waiting room, rounds room, student and staff rooms. Stables and inpatient areas are mainly located at the west side of the long and wide ‘large animal stable corridor’, while most of the examination and treatment facilities are situated on the opposite east side, in Bldg. 6. The stables are mainly found in Bldg. 2. Currently, there are five nursing stables for inpatients with places for 25 horses and one outdoor stable with four boxes. Further, there are eight closed isolation boxes for patients with severe infections and two stables with 18 boxes for outpatients. Rooms for treatment and horse care (showers), washes, utility rooms and a feed barn are situated immediately adjacent to the stable area. This part of the clinic also contains an intensive care unit with six boxes, stocks and an observation room, and an emergency ward with two boxes and a treatment room with stocks.
Isolation and infectious diseases, see section 4.6.

The areas of the Large Animal Clinic where most advanced examinations and treatments are performed are located in Bldg. 6. Five examination and treatment rooms with stocks, one dentistry room and one room for minor surgery are available for outpatient care. The large animal surgical unit has a preparatory/anaesthesia area, scrub rooms, three operating theatres (two for recumbent and one for standing horses) and three recovery boxes. The large animal diagnostic imaging areas accessed from the stable corridor include two radiography, one ultrasonography, one CT, one MRI and one Nuclear Medicine unit.
For orthopaedic and soundness examinations, two 40 m x4 m lameness investigation areas (Bldg. 1), one 20 m x 30 m riding hall and a 12 m x 12 m indoor lunging area are available. The equipment available for research and clinical work includes state-of-the-art equipment

(Qualisys®, Lameness locator®, etc.). A high-speed treadmill is used for exercise tests. A farriery and a shoeing stable are situated in Bldg. 1.
For animal management, access to land outside the stables is essential. The entire field west of the buildings is used as pastures for horses. Directly adjacent to the stables are about 20 paddocks and a horse walker. The areas between the stables are used for parking animal transport vehicles and manure management.

4.4.4. Ambulatory Clinic

The offices of the Ambulatory Clinic are situated in Bldg. 2, close to the Large Animal Clinic offices. Equipment and medicine storage rooms, washes and a small "Mastitis lab" are located by the garage in the riding hall building.

4.4.5. Service

VTH has a central sterile supply unit of a high standard where equipment and accessories have been combined to create an effective system for sterile handling of goods from the equine, small animal and ambulatory clinics. The unit consists of one room for cleaning/disinfection and one with equipment for high and low temperature sterilisation. To reduce the risk of contamination, the rooms have different air pressure.

4.4.6. Diagnostic services including necropsy

Pathology. The pathology section in the Department of Biomedical Sciences and Veterinary Public Health (BVF) performs necropsies of patients from VTH and the VEE's own animals during academic semesters. The necropsies are performed by students on the course "*Diagnostic pathology*" (clinical rotation year), under supervision of a pathologist/teacher who is also responsible for the case and e,nsures that a full necropsy report (after histopathological examination) is sent back to the referring veterinarian. BVF also offers a diagnostic service to VTH and KV on material, including tissue samples from live animals.
Bacteriology, virology and parasitology. For some "routine" diagnostics, the laboratories at nearby SVA (National Veterinary Institute) are consulted. A MALDI-TOF mass spectrometry, used in research projects, routine diagnostics and teaching, is available at BVF. Some necropsy samples are now analysed using MALDI-TOF, which can be employed for e.g. microbial identification and strain typing, fungal typing, epidemiological studies, detection of water-borne and food-borne pathogens, detection of antibiotic resistance and detection of blood and urinary tract pathogens.
A database (VetBact/VetBakt) with information about bacteria of veterinary interest has been developed at the Division of Bacteriology (BVF) at VH Faculty and the Department of Bacteriology and the Office of Science and Quality at SVA. The first version of the database was released online on February 9th, 2006, and, in connection with a major update, VetBakt 1.0 was given a special website on April 16th, 2007. On March 19th, 2010, the bilingual version of VetBact/VetBakt 2.0 was released at a new website (www.vetbact.org). Funding for modernising the platform was granted in autumn 2023.
VetBact is primarily intended to be a tool for veterinary students and their teachers, but can also be useful for veterinary practitioners and students attending other academic courses in bacteriology. Links to course material (video lectures, quizzes, virtual laboratory) are available on the website.
Animal genetics. The Animal Genetics laboratory provides parental and identity controls using DNA profiles and DNA tests for a number of genetic disorders and traits, mainly for horses and dogs. It also offers parental checks for pigs by blood typing. Research is conducted in parallel with these activities, aimed at revealing the background of several genetic disorders and traits.

Diagnostic Imaging Unit. VTH has a state-of-the-art unit for diagnostic imaging, including digital radiography, ultrasonography, computed tomography (CT), magnetic resonance imaging (MRI) and scintigraphy. The number of cases examined by the diagnostic imaging unit in 2022 was 7793 (75% small animals including some exotic animals such as guinea pigs and rabbits, 25% horses). The distribution of cases between procedures was radiography n=3530, ultrasonography n=3177, scintigraphy n=90, MRI n=231 and CT n=571. The unit also has a referral service, giving expert opinions, averaging about 300 cases annually (for 2022 n=194, for Jan-Sept 2023 n=321).
Diagnostic Clinical Pathology. The Clinical Pathology Laboratory is part of VTH. The laboratory analyses some samples from the clinics at SLU (30%), but mainly from other clinics in Sweden (70%). There is also a minor test load of samples from various research projects. Most samples are from dogs, cats, horses and smaller numbers of samples from cattle, pigs, mice, rats, wildlife and exotic or zoo animals. The annual distribution of analyses is approximately 8000 haematology, 18,000 biochemistry, 24,000 endocrinology, and 6000 cytology samples.

4.4.7. FSQ & VPH

Lövsta Kött AB leases SLU's slaughterhouse in Funbo-Lövsta, where in 2022 28,556 pigs, 5324 cattle and 235 calves were slaughtered. The meat from cattle is butchered, but no further meat processing is performed at the site. The lease agreement includes allocating space for teaching and for students doing practical work in the slaughterhouse. There are observation rooms allowing visitors to view the lairage and the various steps in slaughter and butchery, without having to enter the production facilities.

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 clinical skills laboratory, diagnostic imaging, clinical pathology, anaesthesia, surgeries and treatment facilities, intensive/critical care, ambulatory services, pharmacy and necropsy facilities. Procedures and facilities should also be available for soft skills training, e.g. communication skills training through role-play.
Students have access to all diagnostic and therapeutic facilities in VTH/VT Faculty resources during classes and clinical rotations. They also have access to some research facilities during classes and their activities in student research groups. In many of these training sessions, the academic teachers also hold a diploma as EBVS-specialists in the related subject, meaning that the students get the state-of-the-art, evidence-based veterinary medicine education with best practice guidance.
Since 2022, there is a direct bus from Uppsala Campus to the Swedish Livestock Research Centre at Lövsta, leaving Uppsala Campus in the morning and returning in the afternoon. This has increased the availability to this eminent facility for students, teachers and researchers.

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 the prevention of the spread of infectious agents, animal care and student training. They must be adapted to all animal species commonly handled in the VTH. When permanent isolation facilities are not available in any of the facilities used for clinical training, the ability to provide such facilities and the procedures to use them appropriately in an emergency must be demonstrated during the visitation.
Small Animal Clinic – VTH, VHC Bldg. 6. The infectious diseases section is separate from the other activities and has a special changing room area. The section has 20 places and consists

of six stables with separate treatment rooms and in most cases a direct exit to an exercise yard. There is also a "super isolation" area with space for one patient in each stable. These have their own exercise yard and treatment rooms with gas outlets, which facilitates surgery on anaesthetised patients. The isolation facility was updated based on remarks during the last EAEVE inspection in 2017 and was then found approved.

Large Animal Clinic (Equine) – VTH, VHC Bldg. 2. There are eight isolation wards with separate entrances from the stable yard. The passages from the clinics to each of the isolation wards include spaces for dressing, equipment, pharmaceuticals etc. The water supply has check valves, sewage and manure handling is separate and includes decontamination.

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 the supervision of teaching staff.

The Ambulatory Clinic is situated at SLU/VTH and serves Uppsala and Knivsta municipalities, which occupy an area of 2542 km^2 and have a population of about 230,000. The practice area is about 60 km from north to south and 80 km from east to west. This is an area in which conventional farming has partly been replaced by horse stables, in a shift from 'rural' to 'urban' animal husbandry. The total number of cattle in the practice area is approximately 15,000 and the number of horses more than 12,000. There is an ongoing decrease in the number of dairy farms, while at the same time the average dairy herd size is increasing. The number of pig herds has decreased dramatically in recent years, while there has been a small rise in the size of sheep herds.

The Ambulatory Clinic is responsible for teaching veterinary students and for the animal health care of mainly farm animals and horses in the Uppsala region. This involves a 24-hour on-call duty all year round. The clinic also has the function of official veterinarian according to EU standards and staff serve as border veterinarians at the major Swedish international airport Stockholm-Arlanda.

There are nine FTE veterinarians at the Ambulatory Clinic. From Monday to Friday, four veterinarians go out on calls during the daytime together with students (4 students/vet). One veterinarian is on call during weekday nights, while on Saturday and Sunday two veterinarians share these duties. Students participate in the on-call services. The number of farm/stable visits in 2022 was 2289, i.e. on average 6.3 visits/day. The number of cases (animals) was 5662, including 1602 horses, 1451 cattle, 2399 calf dehorning/castration, and 210 "other". This also includes regular visits to the University's dairy cattle (more than twice a week) and pig herds (every 2-3 weeks). Almost 50% of the visits in 2022 were to dairy and beef cattle herds, more than 50% to horse stables, and the remainder to pig and sheep herds. About 30% of the visits were during on-call duty hours (17.00-08.00 h and Saturday-Sunday).

During the clinical rotations (spring in fourth year and autumn in fifth year) in 2022, a total of 85 students attended the course "*Ambulatory clinic*" (7.5 ECTS). In 2022, there were students attending the clinic during 283 days (77.4%).

Descriptions of the vehicles can be found in 4.8.

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 animal welfare, and to prevent the spread of infectious agents.

Student transportation. For transport to extramural facilities, there are two vehicles (Renault Scénic JZ) and two 9-seater minibuses (Nissan M9 and Renault Trafic III). Since 2022, a shuttle bus transporting students and staff daily from the Uppsala SLU campus back and forth to the SLU facility at Lövsta has been provided. This has increased the possibilities to use Lövsta,

especially for teaching, and the use of the animals at Lövsta is now optimised. It has also increased the possibility for students to train basic handling of livestock animals in a purpose-built infrastructure.

Ambulatory Clinic. There are five cars available for use at the ambulatory clinic; two VW Caddy Maxi (1 vet + 4 students), one VW Caravelle (1 vet + <6 students) and two VW Transporter (1 vet + 4 students and 1 vet + 5 students). All cars carry well-equipped mobile dispensaries for 24/7/365 large animal services. For the official veterinarian services and border control at Stockholm-Arlanda International Airport, the Ambulatory Clinic uses a car owned by the Swedish Board of Agriculture (Distriktsveterinärerna).
Live animal transportation.- Except for some cattle, the clinics do not provide any transport services for sick animals. Most horse owners have their own animal transport vehicles. There is also a well-equipped large animal ambulance with trained staff available day and night in the greater Stockholm area.
Cadaver transportation. Closed stainless steel containers are used for the transport of cadavers, organs and biological waste within VHC and from VHC to the incinerator at SVA (500 m away) for companion animals to be cremated or to the rendering plant in Karlskoga. Hazardous waste (pathology, microbiological, animal hospital) is transported separately.

Standard 4.9: Operational policies and procedures (including biosecurity, good laboratory practice and good clinical practice) must be taught and posted (in different languages if the curriculum is taught in them) for students, staff and visitors and a biosecurity manual must be developed and made easily available for all relevant persons. The VEE must demonstrate a clear commitment for the delivery and the implementation of 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 regular monitoring of the feedback from students, staff and clients.
The changes in the facility, equipment and biosecurity are decided and handled similar to the way to other decision-making, consultation and information issues within SLU, as summarised in section 1.2.2.

Environmental Guide for VHC as part of biosecurity at SLU
The *Environmental Guide* is a manual specifically for the environmental work at VHC. It contains overall procedures and documents that apply to all of SLU, as well as VHC-specific procedures. All documents are stored in the "*Edda document management system*" (https://internt.slu.se/en/support-services/administrative-support/environment/local-environmental-pages/environment/environmental-guide-vhc).

Covered in this manual are the following:
Description of operations
Environmental policy
Environmental aspects and objectives
List of laws and evaluation of compliance
Organisation and responsibility
Training and capacity needs
Communication
Emergency preparedness
Non-conformities and improvement suggestions
Records
Management review

Internal audit
External audit
Work procedures

In particular, QA of biosecurity is described in detail under the heading *Work procedures*.

Environmental coordinators at VHF are Christina Larsson and Karin Wallin.
Comments
The renewal that the Ultuna campus has undergone in the last 10 years, with modernisation and densification, has provided new opportunities for collaboration within the university. The VHC is an important boost for VH Faculty activities since, in addition to coordinating laboratory and other resources, it has created a whole new dynamic between individual researchers, subjects and departments. The teaching facilities are extremely well suited to meet the demands from teachers and students.
The introduction of sectioning of buildings and training of staff and students in biosecurity, risk assessment and security has increased awareness of these basic activities.
The investments in a slaughterhouse, the Swedish Livestock Research Centre and the Götala Beef and Lamb Centre are essential for future education and research at VH Faculty.

The current situation at the Small Animal Clinic at VTH is linked to reduced staffing. This has resulted in inability to provide 24/7 service during academic semesters. Currently, the Clinic provides a 24-h service on four days per week, with the intention to return to 24/7 during semester time as soon as the staffing situation is restored. Due to rescheduling of the on-duty week during the small animal clinical rotation, the students still have the same number of on-duty hours compared with when the clinic had a 24/7 service. Thus, the education goals and day one competences in out-of-office hours handling of emergency cases in small animal are still met. We recognise that this situation is suboptimal, and are actively working on hiring new veterinarians and veterinary nurses to re-establish the full service offered previously. Notably, VTH is allowing first-opinion cases without referral, which means that students have access to emergency cases and also first-opinion cases in the polyclinic. This further ensures that the students are trained in Day One Competence handling of first-opinion cases and emergencies also in daytime, supervised by academic teachers. During the Covid pandemic, VTH functioned all the time and the students had practical training as planned, including in the Small Animal Clinic, but the teaching was performed in smaller group sizes. This was a practical training experience to a much larger extent than for many other VTHs in the EU and globally.

5. Animal resources and teaching material of animal origin

Standard 5.1: The number and variety of healthy and diseased animals, first opinion and referral cases, cadavers, and material of animal origin must be adequate for providing the practical and safe hands-on training in all relevant areas 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.

5.1.1. Description of the global strategy of VHF on use of animals and material of animal origin for the acquisition by each student of Day One Competences

In January 2007, the Vice-Chancellor of SLU issued a policy document on the use of animals and material of animal origin for teaching purposes. The policy was last updated in December 2015 (added as Appendix 5.1). The policy stresses the importance of a consistent ambition to keep the numbers of animals used low, to look for alternatives to the use of animals, and to reduce any stress and strain ("suffering") as much as possible (3R, Reduce, Replace, Refine). This is also in line with the EAEVE goal of "never the first time on a live animal". Information and ethical discussions must always precede courses and exercises that include the use of animals and/or material of animal origin. This chapter describes how this policy has been translated into practical action in the Veterinary Medicine program at SLU.

5.1.2. Description of the specific strategy of the VEE in order to ensure that each student receives the relevant core clinical training before graduation, e.g. numbers of patients examined/treated by each student, balance between species, balance between clinical disciplines, balance between first opinion and referral cases, balance between acute and chronic cases, balance between consultations (one-day clinic) and hospitalisations, balance between individual medicine and population medicine

The preparations for, and execution of, clinical training are presented in sections 3.1 as is the documentation of clinical activities and Day One Competences. The latter is also described in section 8.5, and the assessment of clinical practical skills in section 8.1.2.

Course leaders and clinical teachers are responsible for making a representative selection with regard to species, type of disease or injury, primary or referral cases, consultations and hospitalisations, etc. In the small and large animal clinics with their high number of patients, these goals can be achieved relatively easily. The Ambulatory and Ruminant clinics are more dependent on seasonal variations. Students attend these clinics repeatedly during the clinical rotation year, which partly counteracts seasonal side-effects.

5.1.3. Description of the procedures developed to ensure the welfare of animals used for educational and research activities

The Animal Welfare Act (SFS 1988: 534) governs the use of animals in research and education. As mentioned above (section 5.1.1), SLU has a policy on use of animals in research and education (Appendix 5.1). SLU has a designated superintendent who ensures that the work and use of animals are in accordance with the legislation. There is also an Advisory Committee which works to strengthen animal welfare for animals used in research and education at SLU. In addition, inspectors from the County Council (*Länstyrelsen*) conduct annual regulated audits and the inspector can close a facility if its operations do not comply with the legislation.

By law, it is mandatory to have basic education in laboratory animal science before being permitted to work with animals in research and (many) educational activities. Thus, all staff must be adequately educated, trained and competent before working with animals at SLU.

SLU has joined in a partnership with other universities and established a web course in laboratory animal science. There is a basic module on laws and ethics and modules on a few different species. The course is in English. For third-cycle students working with animals, the web-based course is supplemented by a mandatory 1.5 ECTS course that more extensively covers the legislation around laboratory animals, experiment planning and design, the evaluation of pain, stress and well-being in animals, and the 3R concept.

Animal experiments, including some educational activities, can only be performed if there is an ethical permit/ethical licence which is granted by an ethical committee. The permit is valid for up to 5 years and can comprise several projects. The research group leader/project leader submits an application for ethical evaluation of animal experiments, but it is the holder (Principal Investigator/Project Director) of the ethical permit who is legally responsible for all activities covered by the ethical licence.

According to SLU policy, students should be given the opportunity to inform themselves about the policy for the use of animals in research and education if they plan to follow a program/course where the handling of animals and materials from animals is included. There should also be a presentation of course elements where live animals, carcasses or tissues from animals are used, which prospective students can explore before they apply to the program/course.
Students are introduced to the use of live animals and bodies/organs from animals in the VP already during the first course. During the first year of studies (and later!), the students also attend discussions on the use of animals with teachers, researchers, clinicians and a senior lecturer in animal ethics. VH Faculty also holds regular ethical workshops for students and staff, where predefined subjects are highlighted and discussed. There are around three ethical workshops per semester. They are organised by the Senior Lecturer in Ethics at the Department of Animal Environment and Health (Section of Ethology and Animal Welfare).

5.1.4. Description of how the cadavers and material of animal origin for training in anatomy and pathology are obtained, stored and destroyed

Anatomy. The Department of Anatomy, Physiology and Biochemistry (AFB) teaches anatomy during the first (basic anatomy) and third (clinical anatomy) years of the Veterinary Medicine program and is also responsible for other courses, e.g. for animal science and veterinary nurse students. Dissection and demonstration material of animal origin is acquired in several different ways: donated horses and dogs; surgical exercises; organs from cattle, sheep, pigs and horses from nearby slaughterhouses; and laboratory animals that are bought for the purpose.
Bodies and organs that are not used immediately are frozen at -18 ºC. Formaldehyde is not used. For live anatomy (palpation etc.), animals kept at VHC, at Lövsta and at the Cavalry Stables in Stockholm are used. Students may also use their own dogs.
Pathology. During the course "*Diagnostic pathology*", BVF runs a necropsy service which essentially depends on material from the VTH clinics and VH Faculty's own animals. The active periods are usually between September and May.
Clinical measures. The introductory training in gynaecological and andrological examination uses organs from different species, which are bought from slaughterhouses. Calves (unborn) are acquired from the same source for teaching obstetrics. Furthermore, e.g., feet and skulls from horses and feet, udders, skulls and tails from cattle are obtained from a slaughterhouse to be used in the clinical courses. The organs are used either fresh or stored frozen at -18 ºC.
Carcass handling. Carcasses and animal by-products from companion animals (i.e. dogs, cats, rabbits, exotics) are transported to SVA and incinerated. The same procedure applies to waste from the necropsy room (e.g. plastics and paper).
If the owner wishes, it is possible to have separate incineration (cremation) where the owner gets the ashes back for burial.
Carcasses and animal by-products from food animals (i.e. cattle, pigs, sheep, goats, and poultry) and horses are transported by Svensk Lantbrukstjänst to Konvex in Karlskoga, Sweden, and used for production of Biomal, a biofuel produced by crushing animal waste products and grinding them into a fuel with an energy content corresponding to wood chips. This is a way to reduce the energy footprint and costs of carcass handling at VEE.

Table 5.1.1 Cadavers and material of animal origin used in practical anatomical training (mean numbers 2021-2023),

Species	Cadavers	Organs	Origin
Cattle	20	>200	Mainly organs from abattoir
Small ruminants	10	120	Own herd, donated by private owners and abattoir
Pigs	10	100	Other courses and abattoir
Dogs	20	0	Donated by the Swedish Army and private owners
Equine	10	80	Donated by owners and from abattoir
Poultry	40	0	From farms

Rabbits	5	0	For demonstration
Exotic pets	Few	0	From donations
Rats	40	0	Own herd VHC
Mink	40	0	Donated by breeders

This table was edited, compared to the SOP 2023, to give a higher resolution on the types of specimens used in teaching. The number has been constant annually, hence given the mean instead of each year.

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

Species	AY 2022/23	AY 2021/22	AY 2020/21	Mean
Cattle	200	200	200	200
Sheep	20	20	20	20.0
Goats	25	33	26	28.0
Pigs	110	110	110	110
Companion animals (dogs)	27	26	24	25.7
Equine	20	21	20	20.7
Rats	30	30	30	30.0
Mice	30	30	30	30.0

*Number of cattle, pigs, rodents and sheep are estimates.

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

Species	AY 2022/23	AY 2021/22	AY 2020/21	Mean
Cattle	95	58	86	80
Small ruminants	68	56	54	59
Pigs	na	na	na	na
Companion animals (dogs, cats)	4298	4336	4504	4379
Equine	2017	1799	5049	1899
Rabbits	179	421	315	179
Exotic pets (mammals, birds, reptiles)	67	285	289	135
Alpacka, Llama	0	1	3	1.3

The total number of companion animals (dogs, cats) at VTH during the AY:s were 12465, 14568 and 12505. For horses it was 4154, 3653 and 3884.

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

Species		AY 2022/23	AY 2021/22	AY 2020/21	Mean
Cattle	*Farm visits*	*987*	*979*	*874*	*947*
	Individual animals approx	1 300	1 300	1 150	1 250
Castration, dehorning		2 100	2 100	2 100	2 100
Small ruminants	Individual animals	124	137	149	137
Pigs	*Individuals*	14	19	11	15
Equine animals	*Individuals*	1367	1464	1654	1495

Table 5.1.5 Percentage (%) of first opinion patients used for clinical training

Species	AY 2022/23	AY 2021/22	AY 2020/21	Mean
Cattle*	67.8	67.6	67.7	67.6
Small ruminants	71.5	75.3	71.1	72.7
Pigs	na	na	na	na
Companion animals	13.6	12.5	13.4	13.1
Equine	25.7	27.5	26.4	26.5
Rabbits	Estimated 1 out of 2 cases seen by students			50.0
Exotic pets	Estimated 1 out of 2 cases seen by students			50.0

*Excl. castration and dehorning of calves which is always done with students being active

Table 5.1.6 Cadavers used in necropsy

Species	2022/23	2021/22	2020/21	Mean

Cattle	30	37	43	36,7
Small ruminants	27	19	10	18.7
Pigs	38	34	30	34
Companion animals	152	213	179	181.3
Equine	74	65	46	61.7
Poultry & rabbits	53	32	23	36
Aquatic animals	0	0	0	0
Exotic pets	3	11	7	7
Others (alpaca)	0	1	0	0.3

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

Species	2022/23	2021/22	2020/21	Mean
Cattle	80	88	88	85.3
Small ruminants	10	8	8	8.7
Pigs	78	65	59	67.3
Equine	Ambulatory clinic , cf Table 5.1.4.			
Poultry & rabbits	1	1	1	1.0

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

Species	AY 2022/23	AY 2021/22	AY 2020/21	Mean
Ruminant's slaughterhouses	5	5	5	5
Pig's slaughterhouses	5	5	5	5
Poultry slaughterhouses	-	-	-	-
Meat processing plant	1	1	1	1

The use of animals in teaching is regularly reviewed by an ethical committee and requires ethical permission. SLU has a veterinarian responsible for teaching animals and ethical permissions. The basic principle is that clinical skills training begins with training on models at the Clinical Training Centre (CTC), then the exercise is practised on organs/cadavers if possible and then on teaching animals before exercises can be performed on patients. The vast majority of dead animals used for teaching are euthanised for reasons other than use in education. The autopsies performed on privately owned animals take place with the consent of the animal owner, who is informed and understands that the autopsy activity is part of the teaching in the Veterinary Medicine program. The number and variety of animals (cadavers, teaching animals, healthy and diseased patients) required for training is based on practical considerations (availability and group size) and is managed by the department responsible within the curricular framework. For preclinical and clinical courses using teaching animals, the number of animals is adjusted to a predefined student:animal ratio with the aim of including only the number of animals required. The number of animals/animal material is routinely evaluated by the preclinical and clinical teachers and course organisers, together with the individual scientifically responsible for the medical topic of the course, based on an assessment of the students' learning in relation to expected learning outcomes. The students' course evaluations are also taken into account. Identified critical issues are discussed at departmental level, at Program Board level (led by the Program Director) and at Program Committee level (led by the Head of Studies).

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 the supervision of teaching staff and follows the same standards as those applied in the VEE.
Most of the training is provided at the SLU campus, except the EPT described elsewhere.

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.

5.3.1. Description of how and by whom the nursing care skills are implemented and taught to undergraduate students

Nursing care skills are implemented in a two-step process: during theoretical classes on the propaedeutic course by the teaching staff (veterinarians) mainly employed at the Department of Clinical Sciences and, in parallel to these lectures, during an afternoon practising blood sampling, drug administration and bandaging, first on dummies at CTC and then on teaching animals (mainly dogs, horses and cows). After this, practice is followed during clinical rotations with different species (small animals, horses, farm animals) in the fourth and fifth year, supervised by the veterinarian on duty or dedicated to the clinical rotation with students. Students have the possibility to examine animals, learn how to take samples for laboratory tests (blood, urine, faeces, swabs etc.) and practise anaesthesia, including monitoring and how to administer drugs. They take care of the stationary patients, i.e. monitor their health status (measuring temperature, heart and respiratory rate etc.), feeding, check wounds after surgical operation, etc. In the subject Dietetics, students learn the principles of nutrition of sick animals.

5.3.2. Description of the group size for the different types of clinical training (both intra-mural and extra-mural) to guarantee hands-on training of all students

Group size varies depending on the part of the clinical rotation involved. There are 10 main groups of 9-10 students. These are divided into smaller sub-groups of 3-5 students during different parts of the clinical training. When attending the Small Animal Clinic, students often work in pairs, with one being responsible for the case at hand. At the Equine Clinic, students work in groups of 2-5. The Ambulatory Clinic's cars generally carry 3-4 students, but during herd health visits often eight students. During evenings and weekends, there are usually two students on call. The clinical rotation during the pandemic was divided into even smaller groups due to national restrictions, and the students took turn being on-line and briefed by the students and teaching veterinarian doing afternoon rounds, with case discussions, and being at the clinic. SLU was in general still able to commit to clinical teaching, due to a decision by the Vice-Chancellor. This worked very well and no specific increase in health concerns among students, teachers or owners was observed.

5.3.3. Description of the hands-on involvement of students in clinical procedures in the different species, i.e. clinical examination, diagnostic tests, blood sampling, treatment, nursing and critical care, anaesthesia, routine surgery, euthanasia, necropsy, report writing, client communication, biosecurity procedures (both intra-mural and extra-mural)

Passing the exam in clinical propaedeutics is a prerequisite for attending the clinical rotation courses. The practical training preparing students for their clinical rotation year takes account of examination methods, various treatment methods, surgical routines, anaesthesia induction, biosecurity, client communication etc. During the clinical rotation, students are expected to play an active role in the examination, treatment and follow-up of patients. They are assigned a patient and must then take the medical history into consideration, examine the animal and, in consultation with the supervisor, set a preliminary diagnosis and suggest further examination and treatment. The way in which students work practically differs between the clinics. At the Small Animal Clinic, one student is usually responsible for a case, assisted by a colleague. At

the Equine Clinic, several students may work together with a case, under the supervision of a teacher. At the Ambulatory Clinic, there are 3-4 students and one teacher in each car, and there may be 1-4 students per individual animal, mostly consisting of ruminants, but also horses and occasionally pigs. In the new organisation of the Ambulatory Clinic, the students will make one-to-one visits with their supervisor and hence there will always be one student per animal. In porcine medicine, 4-5 farm visits are made, led by 1-2 teachers. Before, during and after these visits, students are expected to act as veterinarians. This means that they pack the equipment and medicines that may be needed, interview the owners and perform practical investigations and treatments. On return to VHC, they take care of the equipment, clothes and boots, and after one of the visits they write a report to the owner. This is the same as the procedure in ruminant medicine.

During on-call duty, i.e. evenings, nights and weekends, students assist in all handling of the patients. Assessment of clinical practical skills is presented in Area 8.

5.3.4 Description of the procedures used to allow all students to spend extended periods in discussion, thinking and reading to deepen their understanding of the clinical case and its management

During the clinical rotation year, the teachers strive to provide enough time for reflection, but the time available may vary depending on current patient flow and individual clinical condition on the patients. There are separate student offices at the clinics with access to reference literature and computers, where students can prepare the cases for which they are responsible and teachers and instructors can conduct reviews and discussions of current patients.

Standard 5.4: Medical records for patients seen intra- and extramurally under Core Clinical Training (CCT) must be comprehensive and maintained in an effective retrieval system to efficiently support the teaching and learning, research, and service programs of the VEE.

Description of the patient record system, its completion, its availability to staff and students and how it is used to efficiently support the teaching, learning, research, and service programs of the VEE

There is one administrative system in use for patients (ProVet Cloud), one version for the large and small animal clinics, and another edited version (masking client id:s to protect farmers' integrity) for the ruminant clinic. Both are centralised case record systems integrated into and accessible throughout the patient flow. The students are active in using the record systems and write patient records themselves. The records are reviewed by the supervising clinician, who provides feedback to the student in question. The students log into the medical record system by personal log-in (with some restrictions of usage compared with DVMs and veterinary nurses). The draft text written by the student shows up in red. When finally revised by the clinical teacher responsible, they sign the medical record and it becomes the official record of the respective case. If the teacher and student lack the possibility to review the medical record IRL, there is a chat function that allows the teacher to provide comments on the draft medical record, ask the student to revise and after this accept and sign.

The record systems were originally developed to support the needs of animal hospitals and general practitioners, and not primarily for research purposes. This has to some extent limited their value and necessitated additional information gathering.

5.5. Comments on Area 5

Access to animals for teaching at VHC and the Swedish Livestock Research Centre-Lövsta, Götala and Röbäcksdalen is important for VH Faculty activities. The professional barn and

kennel staff play a central role to ensure animal welfare. Outdoor areas for horses and dogs, environment enrichment, a horse walker and summer pasture are important contributions to the animals' well-being.
A concern is that the number of production animals in the Ambulatory Clinic practice area is decreasing. In the long run, this may affect the training in food animal medicine. Biosecurity measures have already excluded veterinary students from visiting poultry and chicken farms. Due to this, in 2023 the Ambulatory Clinic changed its organisation and a collaboration with the district veterinary officer (DVO) organisation within the Swedish Board of Agriculture was initiated to secure continuous exposure to a sufficient number of animals within the food production sector. This is especially relevant following the Swedish government's decision to expand the Veterinary Medicine program at SLU from 100 to 145 students admitted annually, commencing autumn 2023.
Among the students, the view of animals as well as the experience of animal husbandry vary greatly. From the first day in the Veterinary Medicine program, the teachers therefore clarify that being a veterinary student means accepting that farm animals are kept for food production and that food safety is an important part of veterinary duties. The Senior Lecturer in Animal Ethics also raises ethical issues in teaching. CTC successfully prepares students (veterinary medicine and veterinary nursing) before meeting live animals, both teaching animals and patients. In this way, the stress is reduced both for students and animals.

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. Learning resources must be suitable to implement teaching facilities to secure the 'never the first time on a live animal' concept. When the study program 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, together with basic English teaching if necessary.

6.1.1. Description of the general strategy of the VEE on learning resources

Within SLU, the Education Development Unit (EPU) is a strategic expert function in higher education pedagogy, IT pedagogy, media and education systems. The unit is also responsible for SLU's higher education courses and digital education system. It supports SLU teaching staff, students and others who are in some way active in education through consultation, project management, courses and seminars. EPU also runs collaborative projects with other universities and networks, both nationally and internationally, and works in close collaboration with the University Library.
Within education, VH Faculty will continue to develop and use/implement digital pedagogy, which provides the opportunity for increased quality and efficiency in education, not least in distance learning. Example are digital exams, recorded lectures for flipped classroom pedagogy, different types of filmed teaching material, seminars and meetings via different web-based learning platforms. Digitalisation of teaching also provides increased opportunities for interaction and communication training. Teaching using filmed material can be particularly valuable for illustrating care routines, animal behaviour, clinical signs in sick animals, animal owners' opinions (interviews) and other topics that are difficult to capture during e.g. study visits. In accordance with digitalisation of the veterinary profession, students in histology and histopathology use a cloud-based internet platform (Aiforia) with scanned slides. This tool can also be integrated with the digital exam system Inspera. Part of the histology teaching is still

microscopy-based, ensuring that the students also have the basic skills in handling a microscope.
The SLU University Library works with and develops scientific communication and supports research and learning in collaboration with researchers, students and employees at SLU. The aim is a university successful in its mission, with research results widely spread and of use to society. The goal is to contribute to making SLU a world-class university in the fields of life and environmental sciences.
The SLU University Library has around 50 employees, spread over different campuses all over the country. Like the university itself, they work together as one library. The SLU Library has approximately half a million visitors to its physical locations, and over a million visits to the digital library per year. The digital services make resources available to all students, teachers and researchers, wherever they are.

There are two departments within the Library, Scholarly Communication and Research and Learning Support. The majority of the department staff are professional librarians, and there are also systems specialists and information officers.

6.1.2. Description of how the procedures for access to and use of learning resources are taught to students.

Introduction to the computer environment - The Division of IT offers new students a brief introduction to the computer environment. The presentation is aimed at new students who wish to gain an understanding of how the computer environment works at SLU. The students are introduced to the web-based self-service system where, via their user account, they can access the student portal, e-mail, user folders on the file server, the computer labs, the printing system and the student network, as well as learn how to connect to the network from home.

Introduction to information retrieval and scientific communication. The first month of studies in the Veterinary Medicine program includes a general introduction to the program and different tools for higher education (Canvas, Course pages, etc.). On completion of the course, the student will be able to use the resources of the library and computer-based information systems for students at SLU, and be aware of the implications of studies in the veterinary program.

Bachelor's degree project. In the 2017 Curriculum, a major difference is that there will no longer be a Bachelor's degree project course within the Veterinary Medicine program. However, the parts described above will be retained in a new course, "*Scientific approach*, 9 ECTS", given during the third year. There is a possibility to participate in an additional course that enables the individual student to obtain a Bachelor's degree.

Master's degree project in Veterinary Medicine, 30 ECTS. The degree project consists of a supervised scientific research project within Veterinary Medicine. The work process must include identification and formulation of issues and questions in order to solve a scientific research task, to independently search for and to use scientific literature of relevance, to apply scientific methods and to present the various parts of the project, both in writing and orally.

Drop-in — get help online! Through the Drop-in service, staff and students can get help from a librarian with searching, evaluating and using information, and from a language tutor with writing assignments and oral presentations. The service is offered once a week during term time.

Book a Librarian. Through the Book a Librarian service, staff and students can get help with a number of different library-related issues, e.g. information retrieval (formulating a search query, finding scientific articles, books, and so on). The librarian provides 30 minutes of individual help, online via Zoom, or at one of the SLU campuses.

Book language support. Through this service a student or PhD candidate can get help with reading strategies, the writing process, academic language and presentation skills. The language tutor provides individual help, online via Zoom during term time.

6.1.3. Description of how (procedures) and by who (description of the committee structure) the learning resources (books, periodicals, databases, e-learning, new technologies, ..) provided by the VEE are decided, communicated to staff, students and stakeholders, implemented, assessed and revised.

These issues are handled in a similar way to other decision-making, consultation and information issues within SLU, as summarised in section 1.2.2.

The Library Council, with members from all faculties, is the body handling all strategic issues concerning the library's activities, including ensuring a high-quality, resource-efficient service for the whole of the university. It also submits proposals for the annual allocation of funding to the library, both from common funds and from the faculty boards.
Furthermore, the University Library regularly consults program Directors of Studies and course leaders, in order to be able to provide copies of recommended course literature, both for loans and as reference copies. Students and staff can also propose new acquisitions using an online form.

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 a qualified IT person, an e-learning platform, and 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).

Table 6.2.1 Staff (FTE) and qualifications

Staff	FTE
Professional library staff (staff with university degree)	30.6
Experts	13.6
Other library staff	2.9
Total	47.1

6.2.1 Opening hours and days

The University Library and the digital customer service are staffed Monday-Friday 09.00-16.00 h. Students and SLU staff have access to the library premises all days 06.00-23.00 h. Students can use their key card to get access outside the library's regular staffed hours. Self-checkout machines are used to borrow and return books. Security guards do their rounds in the library during the evening.

6.2.2. Annual budget and facilities (location in the campus, global space, number of rooms, number of seats) and equipment (number of computers and of electrical connections for portable PCs)

Table 6.2. Library budget 2023, 1000 €

Expenses 2023	**Research**	**%**	**Education**	**%**	**Total**
Personnel	2091	71	854	29	2935
Public premises	153	*29*	375	*71*	598
Other premises	218	*71*	89	*29*	315
Media	1627	*71*	665	*29*	2292
Operating costs	369	*71*	151	*29*	520
Depreciations	11	71	5	*29*	14
Sum	***4 470***	***68***	***2139***	***32***	***6 602***
Revenues 2023					
SLU-financing	4513	*71*	1843	*29*	6 357
Other sources	111	*71*	452	*29*	156
Sum	***4624***	***29***	***1889***	***29***	***6512***

The library overhead for 2023 was 3.2% of direct payroll costs for research, postgraduate education and environmental monitoring and assessment, and €436 per student FTE to cover costs for the library's support to education.
The University Library is situated in the central part of SLU Ultuna campus, 300 m from the VHC main entrance. In addition to the library collections and the public reading rooms (>100 seats), there are eight bookable group study rooms with 6-10 places (total 54) in the library building. For literature searches, 35+ public computer stations and a number of all-in-one printers are available. The two computer labs adjacent to the reading rooms are available for students to use when they are not booked for teaching purposes. One of these is a 'silent' room. No fee is charged for photocopies ordered from the SLU Library's collections. Loans within Sweden and the Nordic countries are also free of charge.

6.2.3. Available software for bibliographical search

Primo is the University Library's tool for simple, one-stop discovery and delivery of local and remote resources, such as books, e-books, journals, articles, dissertations, databases etc. Searches can be made of the catalogue of the SLU University Library, including e-books and e-journals, dissertations and student projects from SLU's open access archive Epsilon, and articles and other publications from a wide range of external databases and publishers, in total over one billion records. Primo also assists with renewing loans, creating favourites lists, saving searches and giving alerts when new content is available, as well as exporting citations to reference management software.
https://primo.slu.se/discovery/search?vid=46SLUB_INST:SLUB_V1&lang=en

Some databases suggested by the Library include Web of Science, Scopus, ProQuest, PubMed and Google Scholar. Within the subject area veterinary medicine, more than 20 more or less specialised databases are also available. In ***Epsilon*** (SLU's open-access archive), dissertations, student degree projects and other SLU publications are freely available in full text. ***SLUpub*** (SLU's publication database) covers publications by SLU researchers. The database was started in 2003, but some older material is included. Many publications are available in full text, mainly the newer material. ***Ebook Central*** is the library's main supplier of e-books, with a collection spanning all SLU disciplines. In addition, a number of major ***e-book suppliers*** are also available: CAB eBooks, Dawsonera, Knovel, Oxford Scholarship Online, ScienceDirect, SpringerLink, Wageningen Academic Publishers, and some free e-book sites (Google Books, Bookshelf (NLM), College Open Textbook Project, FreeBooks4Doctors, and IVIS –

International Veterinary Information Service). The library has made available the lectures from ***HSTalks - The Biomedical & Life Sciences Collection***.

6.2.4. Subsidiary libraries

Campus libraries in Umeå, Skinnskatteberg and Alnarp also support research and education. There are three specialist subsidiary libraries, one for ecology (Uppsala), one for equine studies (Flyinge) and one at the Institute for Freshwater Research (Drottningholm).

6.2.5. Description of the IT facilities and of the e-learning platform (dedicated staff, hardware, software, available support for the development by staff and the use by students of instructional materials).

The mission of the Division of IT is to provide cost-efficient IT infrastructure at SLU. This includes management, development, coordination and support of administrative systems, e-mail systems and telephony. It also monitors that SLU's IT policy is followed and develops SLU standards for hardware and software. The Division is responsible for central services and advice on software, computers, various licences, IT security, lecture room IT facilities, wi-fi, telephony/video meetings, printers and copying machines. It also offers a range of telephony services such as fixed and mobile telephony, mobile broadband, voice mail and call centre services. The Division of IT has offices at all SLU campuses. The total number of employees is about 100, of which almost 50% belong to the IT and Communications support unit. In addition to the Division of IT staff, all departments also have their own IT coordinator.

Support for the development of instructional materials

In order to support the production of instructional materials, the University Library and the Division of Educational Affairs have developed an on-line course *"Use film in your teaching"* for SLU teachers. There are three independent modules: The pedagogy framing films for education; Tools for creating films for education; and How to use and share films for education. The Division of Educational Affairs also offers professional video production support. See also section 9.3. The Education Development Unit (EPU), for a presentation of courses for teachers.

Software support to SLU students

Students at SLU can download and install **Microsoft Office 365 ProPlus** for free. This package includes Word, Excel, PowerPoint and many other applications. **Other software** available for free includes SAS, JMP, Minitab/Minitab Express, Endnote and Umetrics. There are also some applications specially designed for people with a disability, which work very well for all users.

6.2.6. Description of the accessibility for staff and students to electronic learning resources both on and off campus (Wi-Fi coverage in the VEE and access to resources through a hosted secured connection e.g. Virtual Private Network (VPN)

All SLU students and staff have access to Wi-Fi and the SLU network at the Ultuna campus, as well as Eduroam (education roaming). The SLU VPN (Virtual Private Network) service allows staff and students to log in to the University's network from anywhere in the world and get access to the restricted resources. This also means that they have off-campus access to databases, e-journals and e-books to which the library subscribes, which are restricted by licence agreements and can only be used within the university.

Standard 6.3: The VEE must provide students with unimpeded access to learning resources, internet and internal study resources, as well as facilities and equipment for the development of procedural skills (e.g. clinical skills laboratory). The use of these resources must be aligned with the pedagogical environment and learning outcomes

within the program and have mechanisms in place to evaluate the teaching value of changes in learning resources.

The University Library holds about 135,000 printed books, 67 printed periodicals, 255,000 e-book titles and 13,000 e-periodicals. The number of veterinary books and periodicals (not including animal science, zoology, etc.) available to students and SLU staff comprises around 1500 e-books, 250 e-journals, 1000 printed books and a printed journal archive with around 200 historic titles. It also provides a database of veterinary drugs

6.3.1. The available learning resources to students including electronic information and e- learning courses (and their role in supporting student learning and teaching in the core curriculum)

There are primarily five different systems for communication with students. These have different purposes:

- **My studies** – information about the individual's studies from the studies administrative system Ladok**.**
- **Course pages** – links to course pages from My Studies on the student web-start page.
- **Canvas** – digital course rooms available only for teachers and students attending a course. Canvas also contains program-wide, standalone courses/rooms outside the official curriculum, e.g. *Mediaroom – veterinary medicine, the well-being room and the student archive of diagnostic imaging*.
- **E-mail** – each student has access to an e-mail address at SLU.
- ***e-learning courses and materials -*** Through Canvas, students have access to links to compendiums, lecture hand-outs, quizzes and video recordings. The cloud based tool Aiforia (https://www.aiforia.com/) for digital microscopy are available for students during relevant courses. The webbased VetBact database (https://www.vetbact.org/) is publicly available. Different courses use different applications for quizzes and gamification, eg Quizlet.

Clinical Training Centre - CTC

CTC is situated on the third floor of Bldg. 4. There are two rooms for student activities (up to approx. 14 students in each), one observation room/office and one utility room. In addition, there is a 75 m^2 training room in Bldg. 3. CTC is used by veterinary and veterinary nurse students. Due to the expansion of the Veterinary Medicine program, SLU is increasing the CTC resource with another building, as well as more models both in companion animal, equine and food animals. CTC is staffed by two FTE nurses. At planned training, veterinary academic teachers are on-site to instruct the students.

Adjacent to the anatomy facility, there is a hall with dummies for large animal dystocia (calving) training and a room for bench training of large animal gynaecological examination. These rooms are also used for other teaching activities.

Comments

The library provides very good support and is also represented in PN-VH. Further development of IT-based student support systems is ongoing to create easier access.

VH Faculty has invested in a common Education Service Office for the eight programs, which is positive for both students and teachers. Through support to students in practical questions and by standardised management of examinations, the QA and legal certainty are also increased.

Suggestions for improvement

Digitalisation is one of the focus areas in SLU's strategy for 2021-2025. From this, it is clear that the University is supporting expansion of digital learning platforms and possibilities. This process should be strengthened. Access to Wi-Fi on the entire campus (and at VTH) needs to be optimised and this work is a priority for the SLU IT unit.

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 the educational program in all advertisements for prospective national and international students.
Formal cooperation with other VEEs must also be clearly advertised.
All information concerning enrolment into the SLU education is published at the SLU admission webpages Education | Externwebben (slu.se). Specific information about admission requirements and procedures for the veterinary programme can be found here https://www.slu.se/utbildning/program-kurser/program-pa-grundniva/veterinar (in Swedish). Information about procedures are described below.
Information about the ESEVT evaluation is also available https://internt.slu.se/en/targeted-info/faculties/faculty-of-veterinary-medicine-and-animal-science/current-affairs/initiatives-and-projects/accreditation-veterinary-education--establishment.

Formal collaborations with other VEEs are listed at https://slu.moveon4.de/publisher/2/eng, within the *Veterinary Medicine* subject heading. Some collaborations also involve students and teachers in the Veterinary Medicine program, within the *Animal Science* subject.

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	2022/23	2021/22	2020/21	Mean
Standard students	111	107	105	**108**
Full fee students	0	0	0	0
Total	**111**	**107**	**105**	**108**

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

Year of program	2022/23	2021/22	2020/21	Mean
First year	106	103	104	104
Second year	102	99	110	104
Third year	89	104	90	94
Fourth year	94	93	84	90
Fifth year	86	81	85	84
Sixth year	80	87	99	89
Total	**557**	**567**	**572**	**565**

Table 7.2.3. Number of veterinary students graduating annually

Type of students	2022/23	2021/22	2020/21	Mean
Standard students	78	83	104	**88**
Full fee students	0	0	0	**0**
Total	**78**	**83**	**104**	**88**

Table 7.2.4. Average duration of veterinary studies

Duration	% of the students who graduated on 2022/23
+ 0*	65.38
+ 1 year	20.51
+ 2 years	10.26
+ 3 years or more	3.85

* *The total duration of the studies – 5,5 years*

Table 7.2.5. Number of postgraduate students registered at the VEE

Programs	2022/23*	2021/22	2020/21	Mean
Interns	3	3	3	3
Residents	18	20	20	19.3
PhD students	121	121	120	121
Swedish Specialisation Trainees – together	5	7	9	7

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 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 program 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.

7.3.1. Selection criteria

In order to meet the general entry requirements for Bachelor's level studies, students must have successfully completed their upper secondary (high school) education. Once a student has met the general entry requirements common to all studies at Bachelor's or Master's level, they must also check what specific entry requirements are needed for the course or program they wish to apply for. In order to be admitted to the Veterinary Medicine program, there are specific entry requirements with regard to biology, physics, chemistry and mathematics in addition to general entry requirements.

For all students who apply for a specific course or program, and meet the general and specific entry requirements, a merit rating (also known as grade tariff) is calculated by University Admissions. Based on this merit rating, students are ranked in order from the highest merit rating to the lowest. The merit rating is based on the grades submitted in the supporting documentation. The merit rating scale is from 10 to 22.5 (the higher grades, the higher the merit rating).The central national admission process ensures objective and similar evaluation of the student's merits. Two-thirds of the places on the Veterinary Medicine program are allocated on the basis of the applicant's grades from upper secondary education. Depending on the school type, the applicant is placed in one of four selection groups. Applicants with the same background thus compete with each other for a place in the program. One-third of the students are selected on the basis of their results in the *Swedish Scholastic Aptitude Test* which is a

national test provided twice annually and provides an option for admission into university studies. In each allocation category, the students with the highest merit or test results, respectively, are chosen until the admission is complete. In the situation where more students have the level of merit or test results than available places, a random selection selects the students to be admitted. There are always more eligible applicants than places available; in 2021-2023 the average number of applicants was 1733, of which 902 first-hand applicants. Furthermore, of the 101 admitted students, 87% were female and 79% were younger than 25 years.

7.3.2. Policy for disabled and ill students

At admission to the veterinary program, all students are treated equally and admitted based on their merits, and not medical or other information is enclosed. This supports equal treatment of prospective students for the admission process regardless of any potential disabilities. When admitted to any study program at SLU, a student may apply for special educational support stating the challenges and supported by medical and/or other evaluations. If granted, different types of support are available and is adapted to the particular disability and study situation. Example of support includes note-taking help, mentor support, adapted examination (when possible) and audio books. The contact from the special needs team and the student reach a suggested plan in dialogue, which results in a suggestion of adaptations to course leaders and examinators to decide upon, for each specific course. The information is confidential and the student must inform each course leader of any required adjustments. As stipulated by the law on equal opportunities, universities must ensure equal rights for students with disabilities, so this is of course a focus for SLU. For more detailed information, see section 7.4

7.3.3. Composition and training of the selection committee

There is no selection committee engaged.

7.3.4. Appeal process

The Higher Education Appeals Board is the public authority responsible for hearing appeals against decisions made in the higher education sector. It is the final appeal body and its decisions may not be challenged. Due to the objective selection process for admission to the veterinary program, very few appeals occur regarding admission.

7.3.5. Advertisement of the criteria and transparency of the procedures

Information on how to appeal is attached to all decision documents and indicates in what way, to whom and when the appeal is to be filed. Transparency of the procedures is an essential part of the Swedish principle of public access to official documents.

7.3.6. Description of how the VEE adapts the number of admitted students to the available educational resources (facilities and equipment, staff, healthy and diseased animals, material of animal origin) and the biosecurity and welfare requirements

The number of students admitted annually is decided by the University Board and depends on different factors, e.g. estimated need for newly trained veterinarians, number of applicants for the Veterinary Medicine program, number of incoming veterinarians with education in another country (EEA, Switzerland), financial and learning resources, clinical activities, healthy and diseased animals for teaching purposes and available competent teachers and staff. Over time, these factors have had varying influence, but from 2017 the annual intake has been 100 new students. In 2013, admission of 110 students was introduced, which usually results in about 100 students remaining after the first term, i.e that the program runs “full” also for the study years after year 1. In this way, the student intake are matched against available resources.

Need for newly trained veterinarians

Approximately 4900 veterinarians carry a licence to practise in Sweden (about 500 of these are older than 70 years). The number who are professionally active in the country is estimated to be 3000. Many factors affect the need for veterinarians. The final effects of the recent and still ongoing major restructuring of private animal hospitals and clinics are yet to be seen. The number of pets will probably continue to increase, but the dramatic rise in the number of horses has levelled off. The number of farms with production animals is decreasing nationally and regionally around the VEE. In addition, the number of veterinarians trained in other European countries (EES, Switzerland) that apply for a Swedish licence to practice is considerable, in some years several factors higher than the number of Swedish graduates. A significant proportion of the incoming veterinarians are Swedish students primarily trained in Denmark, Hungary and Poland.
In 2021, the Swedish government initiated an investigation on future needs for the animal health and public health sector, with the focus on the need for labour within the veterinary sector. Different stakeholders participated, and SLU was represented by the Vice-Dean for Education, Associate professor Johanna Penell. The report is currently on referral to collect final inputs from different organisations within this sector. The outcome could be updated legislation and changes in labour recommendations. Initiation of this process was followed by an increased education assignment to SLU to expand both the Veterinary Nurse and the Veterinary Medicine programs. For VHF, it meant a gradual increase in accepted students from 100 in 2021 to 110 in 2022 and fully expanded to 145 students beginning autumn 2023. This expansion was accompanied by a budget increase, based on the financial requirements set by jointly by VH Faculty and SLU. Thus, the additional students will provide a corresponding increase in available financial resources. During the coming years, the increased education assignment will result in substantial upgrades to infrastructure and in employing more teachers. This will contribute to an enlarged critical mass at VH Faculty.

Available educational resources

The most important limiting factors are financial resources and availability of teachers for practical training, especially in practical-clinical parts of the program. The merging of VTH and VH Faculty 1 Jan 2024 and the government expansion assignment of the Veterinary Medicine program provide possibilities for an increase in the current number of teachers and students during the clinical rotation years. As this is an expensive part of the veterinary program, future allocation within the program will be re-weighted towards the clinical parts of the program. This will be visible in the next EAEVE evaluation, in 2031.
The biosecurity aspects are described elsewhere. They are not altered due to the program expansion, but follow the SLU guidelines and QA-procedure. The SLU guidelines are available at (https://internt.slu.se/en/support-services/administrative-support/environment/local-environmental-pages/environment/environmental-guide-vhc). Quality Assurance of biosecurity is described in detail in the section *Work procedures* in the Environmental guide.

7.3.7. Description of the prospective number of new students admitted by the VEE for the next 3 academic years

The projected number of new students admitted by VH Faculty in the next three academic years is 435 (145 students annually).

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 program, taking into account the requirement that all students must be capable of meeting the ESEVT Day One Competences by the time they graduate.

For students with disabilities, the university must provide support for student with disabilities by law as well as treatment on par with all other applicants. For examinations, the university

may adapt exam forms for students with e.g. dyslexia, or mental or physical disabilities, as long as the academic level of the exam is maintained. Adaptations in teaching and assessments are acceptable based on i.e the course examiner's professional judgement that the adaptation still ensures that adequate ESEVT Day One Competence is met.
If a student becomes so ill that they are unable to study for a longer period, they should apply to SLU for approved leave from studies. A student with an approved leave from studies gets a guaranteed place for re-entry and can therefore return to their studies whenever they wish.
For general and acute illnesses, students have access to local health centres and the nearby University hospital. Students at Swedish higher education institutions are insured through the Legal, Financial and Administrative Services Agency's personal injury insurance for students as long as they are registered students. This insurance applies in Sweden when students are on university premises or travelling directly between their homes and university premises.
The Student Health Service offers individual counselling sessions, as well as courses and workshops. The Student Health Service helps with study-related health issues, such as stress, performance and exam anxiety, having difficulty concentrating, fear of speaking in public or a lack of confidence. Everyone at the Student Health Service is covered by an obligation of confidentiality. This means that no information relating to students is passed on to SLU.
If a student misses any compulsory part of a course through illness, they are advised to contact the course leader for the course in question. If a student signed off ill part time or if for some other reason needs to review the studies, the study and career advisors at SLU are there to provide support.

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.

7.5.1. The progression criteria and procedures for all students

In order to provide good conditions for students to carry out their studies successfully, it is important to provide them with clear information early on. By law, university studies must present the formal description of the studies including any additional cost or mandatory requirements before the application period so that the students know what they have applied to. This is an important step to ensure legal certainty which universities must adhere to. The Swedish Agency for Higher Education Services (UHR) coordinates higher education applications in Sweden (www.antagning.se or www.universityadmissions.se). Normally, program students at SLU must apply for program courses for the coming semester. Each course has specific entry requirements, stated in the course syllabus. In accordance to national regulations, any specific entry requirements imposed shall be very essential for a student to be able to benefit from the course or study program. Students who have not met the entry requirements when the admission decision is made can still be conditionally admitted. In those cases, they are required to meet the requirements when the course starts.
The course syllabus is available online and describes the objectives, the compulsory requirements and exam forms. The student must have participated in all compulsory parts of the course (for example laboratory work, practical-clinical education and other specific exercises) including required exams in order to pass the course.
The examiner will communicate the results of an exam no later than 15 working days after the scheduled exam date. SLU offers three exam sessions per year and course.

A student may receive a fail grade and be stopped from participating in the practical training with live animals if there is a tangible risk that the student, through severe incompetence or otherwise, could pose a risk for injuring animals, other persons, themselves, or valuable property if they continued to participate in the practical training. An individual action plan will be established. This plan, which is decided by the program director of studies, should indicate which deficiencies in knowledge and skills the student has, which kind of support the student can receive from the department, and when a control can take place ensuring that the deficiencies have been resolved.

7.5.2. Study breaks and resumption of studies

SLU has decided on a special selection scheme for students returning after study breaks, per category of reasons for the break and this policy is readily available in the study handbook (section 3.13). Available places on a course within the Veterinary Program are distributed according to the following prioritization scheme:

1. Students who have had a study break with a guaranteed place at re-entry and who signed up on time, or requested re-registration for a course.
2. Students who follow the curriculum and have participated in the previous course according to the curriculum of the program and who signed up for the course in time.
3. Students who have had a study break without a guaranteed place at re-entry and who signed up on time, or requested re-registration for a course.
4. Late registrations for the course will be handled after all registrations that were received on time.

If there are more applicants in selection group 2 than there are places, the department(s) responsible for the course will be given the opportunity to expand the number of places.

7.5.3. The remediation and support for students who do not perform adequately

During a course the responsible department must have follow-up procedures for monitoring students who drop out of a course three weeks after the course starts. The students are themselves responsible for reporting any illness or special circumstances affecting their current studies. As described in 7.4, for general and acute illnesses, students have access to local health centres and the nearby University hospital. The study and career advisors as well as the program director are available for counselling if the student so wish at any time, e.g. if support is needed to continue active studies, as well as making plans for return to studies after being absent regardless of underlying reason. Students with disabilities can apply for targeted study support when needed. The program director of studies meets the students from early on and has regular contact with students in different years of studies. The students are informed and well aware that they are always welcome to contact the program director in order to discuss problems during the studies.

7.5.4. The advertisement to students and transparency of these criteria/procedures

Information on criteria and procedures is available at several sites, including Course pages and the SLU Students' website. Course leaders must also inform about the rules when needed. Information on appeals procedures is attached to all decision documents. The transparency of the procedures is an essential part of the Swedish provisions on the publicity of official authority.

7.5.5. The rate and main causes of attrition

Students have no absolute obligation to report that they have discontinued their studies. Therefore, both definitive and probable study breaks are presented in Table 7.5.4.

Table7.5.4. Definitive and (probable) dropouts from the Veterinary Medicine Program and likely causes

Study year	2023/22	2022/21	2021/20
1	1 (7)	1 (4)	1 (4)
2	1 (3)	3 (7)	0 (5)
3	1 (3)	0 (4)	0 (3)
4	0 (0)	1 (2)	0 (4)
5	0 (0)	0 (0)	0 (0)

Medical education	2 (10)
Other univ studies	4 (16)
Illness	N/A
Failed exams	N/A
Unknown	3 (20)
Total	9 (46)

7.5.6 Description of how (procedures) and by who (description of the committee structure) the admission procedures, the admission criteria, the number of admitted students and the services to students are decided, communicated to staff, students and stakeholders, implemented, assessed and revised

A number of laws and regulations govern students' rights and obligations. This also means that universities have a large number of regulations that must be followed. This has been previously described in Chapter 7.
As regards decision-making, consultation and information channels in matters that SLU decides, these are described in section 1.2.
As described in section 7.3 a national university admission system is responsible for all admissions, and are currently based on general qualifications to university studies as well as higher requirements in science topics. Students are then either selected on grades from high school (2/3) or on test results from the national test for higher education entry (1/3). The total number of students are decided on SLU, and is readily available through the Faculty's Program Board documentation and any changes in numbers (which do not happen very frequent) are communicated also in the Faculty Board, to the Heads of departments, and other channels to ensure transparency. Stakeholders are represented in different boards and committees throughout the system and are also regularly invited at special occasions, thus being updated and able to influence the discussions (earlier described in section 1.5).

Standard 7.6: Mechanisms for the exclusion of students from the program 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.
Disciplinary measures may not be invoked more than two years after the offence has been committed.
SLU rules
The disciplinary measures for cheating are a warning or suspension for a maximum of six months. Only the disciplinary measures approved by the disciplinary board may be used.

- When suspended, a student cannot participate in exams, teaching or other activities within the framework of their studies.
- If there are scheduled exams during the suspension period, the student must wait until the next examination session after the period ends.
- While they are suspended, students cannot register on courses.

- They are not allowed to use university resources such as the library or IT services.
- However, they do have the right to contact study counsellors, the Student mediators and the Student Health Centre.

Who is responsible for what?
Once a head of department has reported a case, the vice-chancellor determines whether the case will be referred to the SLU disciplinary board for decision. The disciplinary board decides on the consequences after investigating the case and interviewing the student.
From the 2021 autumn semester, there are Student mediators at SLU. Their tasks include supporting students before and during the disciplinary board's hearing of their case. Information on student mediators: https://student.slu.se/en/rules-rights/rights-and-responsibilities/student-mediators
Once a decision on disciplinary measures has been taken, the Division of Educational Affairs is responsible for registering the suspension in Ladok. The student will also be suspended from Canvas during the period of suspension. The Division of Educational Affairs sends the decision on suspension to the course coordinators for all the student's previous and uncompleted, current and future courses.

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 program. This shall include provision for disabled students, consistent with all relevant equality, diversity and/or human rights legislation.
There must be effective mechanisms for the resolution of student grievances (e.g. interpersonal conflict or harassment).
SLU puts great effort into providing support for the students various welfare needs. Veterinary studies are often stressful to students. One way of supporting the students is to offer high number of contact hours so the time for self-directed studies is lessened. By for example offering more lectures, the VEE helps the students select and digest the study material as compared to fewer contact hours and more self studies. Overall the years 1-5 now offers 250 more contact hours than the last evaluation, of which 100 more lecture hours. For health and welfare, SLU offers support through Career service and through Student Health Organisation. disability and illness, please see 7.4. and also the study support webpage https://student.slu.se/en/study-support/study-support/ability
To ensure that the VEE and SLU meets the legal requirements and goals of equal treatment and opportunities, there are well-established processes and functions in place:
Organisation for gender equality and equal opportunities (JLV)
Equal opportunities is an umbrella term for SLU's work to combat discrimination and promote equal opportunities based on the Swedish Discrimination Act. This work is governed by law, unlike the work on gender equality, which is goal oriented. Gender mainstreaming is a strategy to meet Sweden's political gender objectives. SLU and other Swedish higher education institutions have been given a special task to work for increased gender equality by gender mainstreaming their operations. The university has further an action plan for the work on gender mainstreaming, a document that also meets the requirements of the EU's Horizon Europe framework program, where a Gender Equality Plan (GEP) is an eligibility criterion for all calls for proposals with a deadline from 1 January 2022 onwards.
To meet the requirements above and in our ambition to be even more proactive in our systematic work aimed at combating discrimination, and promoting equal opportunities for all students and employees, SLU has a broader organisation for the work on gender equality and equal opportunities. In this way, the preventive work is conducted at all levels within the

university, and the work includes both staff and students. The organisation for gender equality and equal conditions means further that SLU has a central JLV council and a coordination group that provides central support for the work. Each faculty has a JLV committee and a JLV officer at each faculty office who provide support in the strategic and operational work within the faculties. Students are represented in both the JLV council and the JLV committee on faculty level.

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 the compliance of the VEE with national and international legislation and the ESEVT Standards.

7.8.1. Description of the mechanisms allowing students to provide their needs, complaints, comments and suggestions to the VEE

On a course level this is an important integrated part of the VEE QA procedures described in section 1.4. Furthermore; students are encouraged to contact course leaders, for concerns regarding the present course. Each course has a student representative that can raise student concerns anonymously to the course leader, or directors of study if so is necessary. The students also have representative at all educational boards, at department, program and university levels where they can raise questions from the students. The students are also given the opportunity to fill in an anonymous program evaluation at the end of the program as well as to give direct feedback to the Program directors of study during a special event. In additional to the regular course evaluations and representations in all decision-making bodies related to education within the university, students may contact the course leaders, department directors or program directors directly. There is solid knowledge in the well-organised student union on how any needs, comments or other matters may be communicated within the VEE, for example though a standing item of student union report at the program board, faculty board and SLU educational board meetings.

In addition,
Student mediators can assist Bachelor’s and Master’s students with issues related to their rights and responsibilities, disciplinary cases and more – including the way students and staff behave towards each other.

7.8.2 Comments on area 7

The Veterinary Medicine Program has high application pressure. However, a striking imbalance regarding gender is present. Furthermore, SLU's programs needs to improve diversity.
Within 2 years 96% of the students have finished their studies.
The friendly contact between teachers and students is a valuable strength, especially during the clinical practical training. The student union VMF takes a significant responsibility within VH Faculty activities. The system for support to students is well-developed. Veterinary studies are stressful, and the students union VMF, with support from the Faculty, organises the "*SORK board*" (Studenter som orkar – *students that manage*), in complement to the student counselling offered by SLU itself. SORK organises a program-wide mental health and well-being survey for students each year and uses the results where applicable in order to try to optimise general student wellbeing and services concerning this at the university. The SORK results are presented at the program board with feedback of actions taken to reduce stress and support welfare.

7.8.3. Suggestions for Improvement

This is an area of highest importance and is constantly improved. The new curriculum has tried to address student wellness and will be monitored as part of the regular QA-process.

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 program towards entry-level competence.

8.1. Description of the general student's assessment strategy of the VEE

General rules for checking and assessing of achievement of learning outcomes are set out in the Education planning and administration handbook, which defines the rights and obligations of students related to completing subjects, taking exams, completing study stages and completing the education process (https://student.slu.se/en/rules-rights/rights-and-responsibilities/regulations). The general purpose of the handbook is to clarify the rights and obligations of students, teachers and other staff at SLU. The handbook is also a valuable tool for quality assurance of the entire educational process within SLU, including the veterinary program. It covers most issues concerning first-cycle and second-cycle education at SLU. Certain parts of SLU education are governed elsewhere, but described here. In other parts, the handbook acts as the governing document for SLU. In addition, the handbook provides the reader with instructions and references.

Assessment strategy to ensure coherence of the overall assessment regime and to allow the demonstration of progressive development across the program towards entry-level competence (see also 7.5.).

Completed course - the student participated in all compulsory parts of the course, participated in laboratory work, practical-clinical education and other teaching subjects to the minimum required for approved attendance, as indicated by course leaders at the start of the course. In addition, the student must have completed the course assignments, reports, etc.

The total ***number of examinations*** (exam sessions per course) and practicals may be limited only if it would result in unreasonable resource solvency for SLU not to limit them. Such a limitation must be stated in the course plan. In the event of a limitation of the total number of exam sessions, the student shall be entitled to at least five (5) times for each test included in a course. Each occasion on which the student sits an exam is counted as an exam session. A started exam session is counted as a consumed test opportunity.

A student may have to ***discontinue the clinical training*** with live animals if there is a significant risk that the student, other persons, animals or valuable property will be injured as a result of the students' carelessness. An individual plan is prepared by the department responsible after consultation with the student counsellor and the student concerned. This plan, which is decided by the Program Director of Studies, describes the shortcomings in knowledge and skills that exist and the support that the student can obtain from the department. The plan shall also specify when and how the follow-up control will be carried out. The student may not participate in clinical education with live animals until the Program Director of Studies has checked and approved that the student has obtained the required knowledge and skills.

Study breaks and resumption of studies

The Vice-Chancellor has decided on a special selection scheme for students returning after study breaks. Available places on a course within the Veterinary Medicine Program are distributed according to the following prioritisation scheme:

- Students who have had a study break with a guaranteed place at re-entry and who signed up on time or requested re-registration for a course.
- Students who follow the curriculum and have participated in the previous course according to the curriculum of the program and who signed up for the course in time.
- Students who have had a study break without a guaranteed place at re-entry and who signed up on time or requested re-registration for a course.
- Students who have had an unannounced study break and who signed up on time, or requested re-registration for a course.
- Late registrations for the course will be handled after all registrations that were received on time.

If there are more applicants in selection group 2 than there are places, the department(s) will be given the opportunity to expand the number of places.

8.1.2. Description of the specific methodologies for assessing the acquisition of knowledge

Verification of achieved learning outcomes is carried out by means of various forms of checking of the effects related to the category of knowledge, skills and social competencies. Rules for conducting and documenting written and oral examinations at campus and online are described in Education Planning and Administration Handbook. The selection of the methodology used in the construction of staged works, examinations and projects is the responsibility of the academic teacher coordinating a subject. Exams may be written (single/multiple-choice test, essay, etc.), oral, practical or a combination of these formats. The detailed description of the exam procedure is given in the syllabus (which must be presented at the beginning of the course). Exams are usually held during a time when no classes are being held (re-examinations sometimes on Saturdays). The examination groups for the oral and practical examinations usually consist of four (minimum one) student(s). Exams are organised and administered by the head of subject and the results are reported to the student normally through *Canvas or Inspera*.

Theoretical knowledge

Theoretical knowledge is evaluated mainly in oral o,r written exams. The exams comprising both theoretical knowledge and practical skills can be split into several parts.

Pre-clinical practical skills

Pre-clinical practical skills are assessed, as also described in 3.1. Examples on procedures to ensure that each individual student achieves the first day competences during the preclinical years are, practical activities such as laboratory work, study visits, written reports, oral presentations and seminars, are followed up by registration of attendance and, in relevant cases, by submitting lab reports, essays or case reports and summative practical tests. Preparation of an experiment, compilation/presentation of a case report or analysis of a problem is often an element of the examination.

Clinical practical skills

In written format the modified essay questions (MEQ) a case history is presented in stages to mimic the handling of an actual case. The student gradually get answers to enquiries and handles the case on the basis of these. In equine medicine a combine oral-practical and written exam is provided in form of a case based examination with focus on medical reasoning. Practical skills are also evaluated during clinical rotations based on direct observation of the method of performing a practical activity assigned to the student. Skills are also verified as part of practical exams. Compulsory procedures reflecting specific topics within Day One Competence are collected in a logbook. After a pass rating is obtained, the procedure is signed

by the teacher responsible. After the course, all logbooks are scrutinised by the course leader and the examiner.

Soft skills (e.g. communication skills, team player, dealing with pressure, strong work ethic, positive mental attitude, flexibility, time management, self-confidence, dealing with criticism)

Soft skills are verified on the basis of analysis of an ethical problem or case (in ethical workshops), orally or in the form of a presentation, prepared by students individually or as a team and as part of a didactic discussion. In the small animal clinical rotation, students have appointments where they are responsible for the entire handling of the patient, including communication as a part of sending home the patient.

Over the past few years, client communication methods have transformed and evolved. However, while clear, direct and individualised communication is a priority for client-clinician interactions, inter-team communication rarely receives the same consideration. To address this, VH Faculty has begun a student-driven clinic at the Small Animal Clinic where fifth-year veterinary students and third-year veterinary nurse students manage a clinic for consultations with minor complexity, e.g. preventive care, vaccinations, post-operative controls etc., supervised by a clinical teacher. Interdisciplinary team consultation and work planning is a central part of the learning outcome, as well as communication with the animal owners. We believe that effective communication enhances teamwork, as it improves team wellbeing. The latter is very important for sustainability in the profession and preventing early burn-out. Students are also informed and prepared that interpersonal workplace communication is more than simply informing and instructing. Skilled communication can minimise medical mistakes, strengthen teamwork and elevate team wellbeing, and thereby enhance patient care.

Standard 8.2: The assessment tasks and grading criteria for each unit of study in the program 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.

8.2.1 Description of the processes for ensuring the advertising and transparency of the assessment criteria/procedures

Exams must be carried out according to the common SLU rules which are stated in the course syllabus. Grading criteria are made available on the course website no later than at the beginning of the course. Deviations from the course syllabus may be made in the following cases: supplementary assignments for a student who has not obtained a pass grade in an exam; if a student has a documented functional disability; or if a course syllabus is changed or a course is cancelled.

Time and place (location) for scheduled exams and suggestions for first retake sessions should be made clear from the overall timetable for the course, no later than four (4) weeks before the beginning of the course in Time Edit.

8.2.2. Description of the processes for awarding grades, including explicit requirements for barrier assessments

The final assessment is based on results from one or more examination elements (exams). Every course syllabus specifies how the assessment of student achievement is to be made. For the Veterinary Medicine program, a two-point grading scale (G (pass) and U (fail)) is applied. All requirements for a pass grade on a given course must be clearly communicated no later than when the course begins and all official exams have to be passed to obtain the DVM degree. The examiner grades student performance within a course.

Grading criteria connect grades to levels of meeting a course's intended learning outcomes. A pass grade means that the student has met the objectives in the course syllabus. Detailed characteristics of the grading in all particular subjects can be found in course syllabuses on the SLU teaching platform *Canvas*.

It is a strength that examining teachers have not only undergone basic pedagogical training, but also taken a mandatory course for examiners.

8.2.3. Description of the processes for providing to students a feedback post-assessment and guidance for requested improvement

The department running a course should offer, in connection with the course, opportunities for feedback on the assessment. The faculty determines what form of feedback to use. Feedback must be completed before the first retake session. A student is entitled to discuss issues concerning the exam assessment with the examiner. If the student so requests, the examiner must inform them about the grounds for the grading decision.

8.2.4. Description of the appeal processes against assessment outcomes

A grading decision may not be appealed (Ch. 12, Section 2 of the Higher Education Ordinance). This means that a student is not entitled to an assessment by a second person, but a student is entitled to request a reconsideration (Section 27 of the Administrative Procedure Act) of the grading decision by the examiner. Objections to the result should be submitted to the examiner in writing, and with a justification. A reconsideration request should be made as soon as possible. If multiple failures (>2) the student can also ask for change of examiner at next re-take.

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. Program 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.

These issues are handled in a similar way to other decision-making, consultation and information issues within SLU, as summarised in section 1.2. *Organisation of the VHF and description of the decision-making process.*

Standard 8.4: Assessment strategies must allow the VEE to certify student achievement of learning objectives at the level of the program and individual units of study.
The VEE must ensure that the programs 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.

Detailed rules for verification of learning outcomes at VH Faculty are set out in the Education Planning and Administration Handbook. For Standard 8.4, the process is specifically discussed under section *11.3. Program content and design* in this handbook.

EPU's higher education pedagogic courses include constructive alignment as an important feature. It is a prerequisite for course learning objectives to be linked to learning activities and examinations. Furthermore, it is stated in the Orientation Document for education at basic and advanced level 2017-2020 that skills and attitudes must be strengthened in all education programs based on the degree objectives. The degree objectives are also found in educational plans and general study plans. The pedagogic course in examination and grading is also a competence requirement for examiners at the veterinary program. In connection with the expansion project, several courses are undergoing changes. Course managers and subject leaders also work to ensure that the graduation goals are achieved. A matrix model is made for each program, displaying how qualitative targets will be met through the planned program courses. The matrix includes the qualitative targets on one axis and included courses on the other axis. The interface lists relevant intended course learning outcomes that contribute to meeting the qualitative targets in question. The model clarifies how a program is designed and how it will progress in a clear way and must take both subject-specific and general skills into consideration.

At the inspection/evaluation by UKÄ in 2020, the assessment group took a positive view of how that work takes place in practice. In addition, the assessment group was positive to the fact that different people's judged opinions are taken into account when it comes to designing and implementing training courses. VH Faculty management also holds regular dialogue meetings with a number of actors within the HEE's environment (authorities and key companies), to get feedback on how the courses can be improved and developed.

In the standard course evaluation tool *Evald*, students are asked anonymously at the end of every course to comment on how well the learning outcomes were met by the content of the course. They are also asked about the degree to which the examination enabled them to demonstrate how well they had reached the learning outcomes of the specific course. More information on the course evaluation tool can be found https://internt.slu.se/en/support-services/education/educational-and-digital-support/educational-systems/evald-programme/

The results from the course evaluations are thereafter compiled and communicated by the course leader to the teachers. If needed, learning outcomes are revised. If more substantial revisions are needed, the Program Director and ultimately the Program Board can be involved in revisions of learning outcomes and content of specific courses. In all steps of this process, students are involved in the decision-making via elected representatives.

Standard 8.5: Methods of formative and summative assessment must be valid and reliable and comprise a variety of approaches. Direct assessment of the acquisition 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 regular quality control of the student logbooks, with a clear distinction between what is completed under the supervision of teaching staff (Core Clinical Training (CCT)) or under the supervision of a qualified person (EPT). The clear distinction between CCT and EPT ensures that all clinical procedures, practical and hands-on training planned in the study program have been fully completed by each individual student. The provided training and the global assessment strategy must provide evidence that only students who are Day One Competent are able to graduate.

The use of different examination formats and the clinical log-books containing procedures addressing specific goals in EAEVE Day One Competences that are signed by the teacher and then checked by course leaders and examiner allows for verification of learning objectives corresponding to the level of training and the assessment of theoretical, clinical and soft skills

and Day One Competences. The aim of these initiatives is to achieve the substantive specifications in Article 38 of Guideline 2005/36/EG and EAEVE Day One Competences.

Comments

- ✓ The assessment strategy is closely monitored by the Program Director, Vice-Dean for Studies and Program Board.
- ✓ Comprehensive student-level monitoring of the examination process is registered by USOS.
- ✓ Regular evaluation of the learning process by students with feedback for academic teachers.
- ✓ Appropriate and reasonable provision is made for pregnant students and students with disabilities, tailored to the individual.
- ✓ A reasonable appeals procedure is provided.
- ✓ The Swedish Council for Higher Education regularly reviews the quality assurance process at SLU. At the latest inspection (2020), the work was approved as fulfilling all areas of inspection set for the Council in its commission from the Swedish government.

Area 9. Teaching 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 quality-assured program of teacher training[1] (including good teaching and evaluation practices, learning and e-learning resources, use of digital tools education, biosecurity and QA procedures) must be in place for all staff involved with teaching. Such training must be mandatory for all newly appointed teaching staff and encouraged on a regular basis for all teaching staff.

Most teaching staff (calculated as FTE) involved in core 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.

The Swedish Ordinance of Higher Education stipulates that university education must rest on a solid foundation of active research. This also means that teachers are expected to be active scientists. Around 200 academic staff at VH Faculty have a PhD degree and more than 100 have a 'docentship' (Associate Professor, see below). At VTH, the veterinary clinicians are mainly involved in clinical work and may also instruct students.

With few exceptions, academic staff holding teacher positions are engaged in both research and teaching. This means that it is almost impossible to divide the staff into individuals who teach and those who do research. As a rule of thumb, it can be said that among teachers and instructors:

- ***Professors*** at VHF do a higher proportion than usual (compared with other Swedish universities) of first- and second-level education, and are very involved as supervisors of degree projects and of PhD students.
- ***Senior lecturers*** (*universitetslektor*) are expected to perform approximately half-time education and half-time research.
- ***Lecturers*** (*universitetsadjunkt*) are mainly engaged in first- and second-level education.
- ***Postdoctor*** (*postdoktor*) is a limited-term (two-year) employment intended for researchers who have obtained a doctorate in the past three years.
- ***Doctoral studentship*** (*doktorandtjänst*) is a position for third (doctorate)-level students, who have a four-year appointment for research training.
- ***Veterinary clinicians*** (*klinikveterinär*) are employed by VTH for clinical work and may also instruct and supervise students.

- ***Researchers*** (*forskare*), academic personnel whose main task is to conduct research work, may from time to time participate in teaching.

Technical and administrative staff includes all posts, regardless of the work undertaken; administrators, laboratory technicians, veterinary nurses, animal caretakers, etc.

Standard 9.2: The total number, qualifications and skills of all staff involved with the study program, including teaching, technical, administrative and support staff, must be sufficient and appropriate to deliver the study program 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, teaching or support staff, senior or junior, permanent or temporary, teachers. Guidelines for the minimum training to teach and to assess are provided in Annex 6, Standard 9.1.

Table 9.2.1. Teaching staff involved with the core veterinary program

Type of contract	2023/22	2022/21	2021/20	Mean
Academic staff (FTE)	77	72	70	73
Interns (FTE)	1	1	1	1
Residents (FTE)	8.0	6.2	6.2	6.8
PhD students (FTE)	2.0	1.8	1.6	1.8
Diplomates (FTE)	48	49	49	48.7
National specialists (FTE)	10	11	12	11
Practitioners (FTE)**	3.0	3.2	3.9	3.3
Others *(*specify*)* (FTE)	0	0	0	0
Total (FTE)	114	108	108	330

** All staff included in this table have received a training to teach and to assess undergraduate students. Practioners involved with EPT are not included in this table.*
*** Teaching performed by VTH staff veterinarians*

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

Type of contract	2023/22	2022/21	2021/20	Mean
Permanent (FTE)	79	80	81	80
Temporary (FTE)	80	80	80	80

Table 9.2.3. Support staff of the veterinary program

Type of contract	2023/22	2022/21	2021/20	Mean
Permanent (FTE)	45	46	45	45
Temporary (FTE)	6	6	6	6
Total (FTE)	**51**	**52**	**51**	**51**

Example of support staff: Animal technicians, pathology and anatomy technicians, IT-support and department associated education administrative staff. Central university education administration excluded as being shared by all teaching programs at SLU.

Table 9.2.4. Research staff of the VEE

Type of contract	2023/22	2022/21	2021/20	Mean
Permanent (FTE)	115	116	120	117
Temporary (FTE)	12	17	24	18
Total (FTE)	127	134	144	135

9.2.1. Prospected number of FTE academic and support staff of the veterinary program for the next 3 academic years

VH Faculty expects significant changes in the nominal position plan within the next three years, due to the expansion in the Veterinary Medicine program. Hence, the number of academic staff will increase.

9.2.2. Description of the formal program for the selection and recruitment of the teaching staff and their training to teach and assess students (including continuing education)

For the post of *Professor*, the applicant must produce documented evidence of scientific and pedagogic skills. A *Senior Lecturer* must have a PhD degree and documented evidence of pedagogic skills. A *Lecturer* must possess an MSc in Veterinary Medicine (or other relevant field) and documented evidence of pedagogic skills. For the post of *Veterinary Clinician,* an MSc degree in Veterinary Medicine is needed.
In nomination of a Professor or Senior Lecturer, the Faculty Appointments Board is assisted by three (professorships) or two (senior lecturers) external subject experts. Members of the Appointments Board comprise four teachers/researchers and one student representative. There are also five alternate members of the Board.
Indefinite-term employment and temporary positions
One of the main lines of thought in the Employment Protection Act (LAS) is that as many as possible should have permanent employment. A permanent position may be terminated via a notice of termination (from the employee or the employer) or resignation.
There are a number of exceptions to the ground rule on indefinite-term employment. Some examples are:
Temporary employment. A person employed for short, limited periods.
Postdoctor. A temporary position for two years, with the main focus on research.
Residency. Veterinarians at SLU who complete their residency may be offered fixed-term employment. Here the different colleges within EBVS allow for different amounts of research and teaching. The majority of time should be within the area of specialisation (pre- or paraclinical work). In general 30-40% of the time can be allocated to research and/or teaching within residencies.
PhD student position. This four-year position must always be full-time. If a doctoral student so requests, the position may be for part-time work. Accordingly, if the PhD student also acts as tutor/instructor 20% of full time, the employment period will be five years. This is generally encouraged at VH Faculty and many PhD students are engaged in teaching in the Veterinary Medicine program.

9.2.3. Description of the formal program for selection, recruitment and training to perform their specific duties (including continuing education) of the support staff

Selection and recruiting
When a support staff position is advertised, it is clearly described if student supervision will be included in the duties. This is always followed up during the employment interviews.
Support staff also attend the below-mentioned courses and conferences which are relevant to them in their roles and assignments in the Veterinary Medicine program.
Furthermore, UN arranges biannual conferences not only for teachers, but also for those in university administration who work with questions related to education.

9.2.4. Description of the formal rules governing outside work, including consultation and private practice, by staff working at the VEE

Secondary employment is any work carried out alongside regular employment at SLU. Teachers at SLU must keep the University informed of any secondary employment that they have which is related to their employment field. As a general rule, secondary employment is permitted provided that it is not in competition with SLU's activities, does not impair the employee's work or adversely affect SLU's image, or in any way undermines the public's trust

in SLU.A veterinarian employed at SLU may not conduct or participate in other clinical veterinary services in the counties of Uppsala, Stockholm and Västmanland, i.e. the primary area of activity for VTH.

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 systems of reward for teaching excellence in operation.
Teaching positions must offer the security and benefits necessary to maintain the stability, continuity, and competence of the teaching staff. Teaching 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.
The Educational Development Unit (EPU) at SLU is a strategic and support source within educational services and IT education. EPU is also responsible for providing the higher education competency courses and offers a number of basic and more specialised courses:

- Teaching in Higher Education, basic course (3 weeks)
- Teaching in Higher Education, Step Two (2 weeks)
- Course in Grading and Assessment (3 day - compulsory for examiners
- Supervision of Bachelor's Dissertations (1 week)
- Course in Doctoral Supervision (3 weeks)
- Project course (2 weeks)
- Project course, advanced (4 weeks)
- Teaching in the Global Classroom (1 week)
- Education for Sustainable Development; course leaders (1 day)

Continuing education, seminars, etc.
SLU teachers' days. Every second year, EPU arranges a two-day internal education conference primarily intended for those who teach and supervise in the first- and second-cycle education programs at SLU. The focus is on current pedagogic issues and includes presentations by leading national and international experts. Several parallel thematic break-out sessions with different group activities and presentations offer opportunities to delve deeper into pedagogic questions.
In between the EPU conferences, the Program Board arranges an education conference for all staff engaged in teaching or supervising students.
VH Faculty teachers' day. VH Faculty annually assembles teachers and other interested staff for an education day. The 2017 theme was "One day for feedback" and questions covered were how to provide feedback on e.g. "Professional approach", oral presentations and how students interact with each other.
Education days at the departments. All departments within VH Faculty organise regular internal conferences on different education issues, such as coordination between courses, practical-clinical supervision and examination, and the pedagogy of knowledge, skills and attitude.
EPU pedagogic seminars. Regularly lunch seminars are organised by EPU, where pedagogic experts are presenting different topics concerning teaching, examination and student wellness.
VETREPOS
VHF has been a part of the pilot upstart ERASMUS+ project of VETREPOS. The overall goal of this project is the establishment of a common procedure for valid longitudinal assessment of knowledge, skills and competences (progress testing) within European Veterinary Schools with reference to subjects defined in EU Directive on the recognition of professional qualifications (Directive 2013/55/EU) and the Day One Competences and Underpinning

Knowledge and Understanding required by European Association of Veterinary Establishment and approved by the Federation of Veterinarians in European (FVE). This is an exciting project with high potential.

For description of the peculiarities of the work contract for teaching staff (e.g. permanent versus temporary, balance between teaching, research and services, continuing education, etc), please also see section 9.2.1, where different forms of positions are described in detail, as is the standard schedule between teaching, research and in some instances clinical work. As a mean, 80% of the teaching staff at the veterinary program are veterinarians (Table 9.2.2).

Standard 9.4: The VEE must provide evidence that it utilises a well-defined, comprehensive and publicised program for the professional growth and development of teaching 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 teaching 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.
Staff development review. All members of staff at SLU must have an annual prepared and structured discussion with their supervisor (e.g. Head of Department/Division) about their work and their potential to be successful in it. The staff development review aims at bringing individual and departmental development forward by both assessing the past and talking about what can be developed in the future. In this way, the dialogue between the supervisor and the employee becomes an important part of the quality improvement of the department.
Salary discussion. The supervisor holds individual discussions with their members of staff before an upcoming revision of salaries. The purpose of the salary discussion is to evaluate individual results based on a number of pre-set criteria, goals and expectations.
Forum for career development at SLU. The FOCUS project aims to make better use of and develop the skills and resources that exist among SLU employees. Through FOCUS, SLU employees have access to an individual professional discussion partner, whether they want an inventory of their skills and development needs more systematically or help with individual issues or "dilemmas" related to well-being and development of their work.
Appointment of docent (Reader/Associate Professor). The selection and appointment of docents at the faculties within SLU is an important part of quality assurance regarding research and the supervision of PhD students. Academic staff holding a PhD degree can apply to be assessed by the Research Fellowship Award Board as Associate Professor (docent). In order to be assessed, the candidate has to present scientific papers showing continued post-doctoral research progress and attend six weeks of general pedagogic courses and a four-week pedagogic course focused on the supervision of third-level (doctoral) students. Experience as PhD co-supervisor is expected. In order to assess the applicant's scientific competence, the Research Fellowship Award Board usually appoints an external expert.
Excellent Teacher. Excellent Teacher (a.k.a. *Distinguished university teacher*) is a title at SLU, as well as many other universities in Sweden, which is an important part of the University's quality work in education and educational development. The appointment of excellent teachers gives the University an opportunity to reward and highlight skilled and pedagogically conscious educators. Excellent teachers are expected to participate actively in their subject area and the University's quality work. Those qualified to apply for the title of excellent teacher at SLU are permanently employed teachers (Lecturer, Senior Lecturer, Professor), or permanent

employees with equivalent qualifications and duties. Applications are assessed by external peer reviews and a subsequent half-day interview. VH Faculty currently has eight excellent teachers, working in the Veterinary Medicine program. A document describing the procedure for applying for the title of Distinguished University Teacher at SLU can be found at: https://internt.slu.se/globalassets/mw/org-styr/styr-dok/7-personal-arbetsmiljo-likavillkor/rutin-sokande-excellent-larare-en.pdf

Pedagogic prize. Each year, SLU awards two prizes for "exemplary efforts in education and training", one to an individual teacher and one to a team of teachers. Nominations can be made by students and teachers. The concluding assessment is made by a panel consisting of the Pro Vice-Chancellor, one representative from each faculty and two student representatives. The decision is made by the Vice-Chancellor. In addition, the student union (VMF) annually awards the prize for best teacher.

National Veterinary Specialist

The title of veterinary specialist has legally protected status in Sweden and can only be used after an approved application to the Swedish Board of Agriculture. Only a veterinarian who has the formal title 'Specialist' is allowed to use this designation.

The Swedish Veterinary Specialist program comprises two steps. Step I leads to specialisation in small animals, equine, bovine, pig or food safety. Step II only exists for small animals. The specialist programs are a cooperation between the Swedish Veterinary Association and the Swedish Board of Agriculture.

VH Faculty has 20 national specialists (10 step I and 10 step II). At VTH, there are 10 step I and 2 step II specialists. At present, five candidates are attending a program at SLU for a step I or II specialist degree.

European and American Veterinary Specialisation (Diplomates)

The European Board of Veterinary Specialisation awards European Veterinary Specialist status based on a specialist diploma being awarded by one of the 27 recognised veterinary specialist colleges following the completion of rigorous postgraduate training, education and examinations. In addition, European Veterinary Specialists are required to demonstrate that they still satisfy the criteria for specialist status every five years. The American Board of Veterinary Specialties runs a similar system in North America. There are 48 European or American Veterinary Specialists (European/American Diplomates) employed at SLU, 38 at VH Faculty and 10 at VTH. At present, 18 candidates are registered in a training program at SLU for a European Veterinary Specialist degree.

Salary supplements for special skills

Salary increases result from regular negotiations with the representatives of the personnel unions and SLU. Negotiated supplements for special skills (e.g. PhD, Docent, Excellent Teacher, National Specialist, Diplomate) are in the range of €160-420 per month.

Standard 9.5: A system for assessment of teaching and teaching staff must be implemented on a cyclical basis and must formally include student participation. Results must be communicated to the relevant staff and commented upon in reports. Evidence must be provided that this system contributes to correcting deficiencies and to enhancing the quality and efficiency of education.

9.5.1. Description of the formal system in place for assessing the teachers by the students

SLU must enable students who are participating in or have completed a course to anonymously express their experiences of and views on the course through a course evaluation. Course evaluations must be followed up and used as a tool for developing the quality of courses and programs. The course coordinating department (or equivalent) is responsible for summarising and following up on each course evaluation, unless the supervising faculty has decided that this

is to be done in a different way. Every student has the right to make a course evaluation for each course they have attended. This is an important opportunity for them to influence their education and is part of SLU's quality assurance procedures.

How course evaluations are handled at the Veterinary Medicine Program
At the start of each course, students are reminded that by the end of the course they are expected fill in a course evaluation. At this time, a student representative is appointed by the Veterinary Students' Union (VMF) from among those attending the course, and they are paid a small sum (€40) for the task. The student representative helps to collate the results of the evaluation and must also perform the following:

- Complete the course evaluation themselves and look at other responses submitted.
- Hold a discussion on the quality of the course and the results of the evaluation with the students who completed the course.
- Together with the course leader, the student representative has the final responsibility for the "student comments section" of the evaluation report.

The course leader then goes through the evaluation result with the teachers involved in the course, makes comments in the "Course leader comments section", and submits a summary of the result to the Program Director of Studies. The evaluations for all program courses given during an academic year are compiled and followed up by the PSR-V. The compilations are then reported at the PN-VH and the Faculty Board.
This and program evaluations below are also described in detail in the Education Planning and Administration Handbook (Chapter 5 *Quality assurance*).
Program evaluations
Students who are participating in or have completed a degree program are given the opportunity to express their experiences of and views on the degree program through a program evaluation organised by the Program Board. Program evaluations are followed up and used as a tool for developing the quality of the program. The Program Board is responsible for summarising and following up on program evaluations.

9.5.2. The strategy for allocating and recruiting academic teachers
VHF works strategically with the long-term supply and development of competence. Within the next five years, 29 of 50 professors and nine of 49 senior lecturers will reach the age of 65 years. The Faculty Board faces the challenge of deciding, for each emerging vacancy, whether a similar position with the same competences should be advertised or if a re-prioritisation is required for this higher academic position. The duty of the Board is also to identify new subject areas where higher academic positions should be established, for example recently in veterinary nursing.
Students are represented in the selection and decision-making process of recruiting higher academic staff, as they are represented both on the Appointments Board and the Faculty Board. All vacancies at VH Faculty are advertised on the central SLU website for vacancies at SLU, both in Swedish and in English. The decisions of the Faculty Board are communicated regularly on the SLU website, alongside shorter broadcasts/interviews with Faculty senior management. Furthermore, VHF holds continuous dialogue with representatives from stakeholders (other authorities as well as relevant companies and NGOs) to gather information about their expectations and needs, as well as to communicate new and future appointments at SLU/VHF

Area 10. Research programs, continuing and postgraduate education
Standard 10.1: The VEE must demonstrate significant and broad research activities of teaching staff that integrate with and strengthen the study program through research-based teaching. The research activities must include veterinary basic and clinical

sciences. Evidence must be provided that most teaching staff are actively involved with research programs (e.g. via research grants, publications in congress proceedings and in peer-reviewed scientific journals).

Description of how the research activities of the VEE and the implication of most teaching staff in it contribute to research-based veterinary education

The many active research-based residency programs conducted at VH Faculty/VTH will guarantee a contemporary and evidence-based approach in teaching of veterinary students, as most VH Faculty researchers are also involved in teaching. Moreover, all Program Directors/supervisors on clinical and para-clinical EBVS-authorised residency programs teach within the Veterinary Medicine program, as do residents as part of their residency training. The amount of accepted teaching/research varies between programs but is around 20-30% of full-time. Having residency program directors (Diplomates) as well as residents tutoring veterinary students automatically increases the standard of the teaching, constantly forces teaching to be contemporary and provides state-of-the art recommendations/instructions in all levels of para- and clinical teaching. As all residency programs involve research projects, all teachers within the programs conduct research themselves and consequently there is a research-based approach in teaching.

The compulsory MSc. degree projects in the Veterinary Medicine program integrate research into teaching, as project supervisors must hold at least a PhD degree (or European or American certified Diplomate) and the projects themselves must include a small research task conducted by the veterinary student. The goal is for all teachers to perform research and for all researchers to teach. A total of 16 new Assistant Professors (Senior Lecturers - universitetslektor) added in connection with the program expansion all have research time, and this investment thus promotes and further strengthens the research connection.

Table 10.1.1. List of the major funded research programs in the VEE which were ongoing during the last complete academic year prior the Visitation

Scientific topic	Grant/year 1000 €	Duration years	Main source(s)
PATHWAYS: Pathways for transitions to sustainability in livestock husbandry and food systems	1 674	5	EU
SustAinimal: A center of excellence for identifying and developing the role of animals in increased food production.	1 091	4	FORMAS
Green food from green feed: Research on the production of food from sustainable feed sources.	841	2	VINNOVA
Development and analysis of recombinant Streptococcus suis and Staphylococcus aureus antigens for use in: Research on the development of vaccines against swine and staph infections.	473	3	Industry
Digital precision breeding - increased welfare and production in dairy cows: Research on the use of digital technology to improve the welfare and productivity of dairy cows.	454	3	FORMAS
Fish farming in the North; a food production with environmental potential: Research on the environmental impact of fish farming in northern Sweden.	418	5	Swedish foundation
The application step - Competitiveness and climate adaptation in beef and lamb production: Research on how to make beef and lamb production more competitive and climate-friendly.	374	3	Swe Regional auth
Effect-driven analysis as a tool for a non-toxic environment - identification of mixture effects and toxic substances in water (DANTE): Research on the development of methods to identify and reduce the environmental impact of chemicals.	273	4	FORMAS
Increased use of grass in feed for organic pigs: Research on the use of grass as a feed source for organic pigs.	271	4	FORMAS
Research and competence development regarding retinal diseases (chorioretinopathy) in: Research on the causes and treatment of retinal diseases in humans and animals.	233	5	Swedish foundation

Marbled, tender and environmentally friendly - the search for the perfect beef: Research on the production of high-quality, sustainable beef.	227	3	FORMAS
GenoAvel - Genomic selection for more productive rainbow trout in Sweden: Research on the use of genomic selection to improve the productivity of rainbow trout.	211	3	Industry and grants
Green Valleys 2.0. Promoting the transition to a circular and resource-efficient economy: Research on the development of circular and sustainable food systems.	203	3	EU
The Beijerlaboratory for animal science research: Research on animal welfare and production.	182	2	Swedish foundation
Feeling safe: Promoting positive welfare and resilience in laying hens: Research on the impact of the barn environment on the welfare of laying hens.	182	4	FORMAS
The important individual - how personality links to health, growth and welfare in dairy cows: Research on the relationship between personality and welfare in dairy cows.	182	3	FORMAS
Development of species-specific recommendations for slaughter of fish in Swedish aquaculture: Research on the development of humane slaughter methods for fish.	181	4	FORMAS
Supervision of animal welfare and welfare with multisensor technology and computer vision: Research on the use of technology to improve animal welfare.	181	4	FORMAS
Research and development on dog diseases. Diseases that are common to: Research on the causes and treatment of dog diseases.	180	10	Donation

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

- ***Students are made aware of the importance of evidence-based medicine, scientific research and lifelong learning.*** An introduction to evidence-based medicine takes place through lectures and exercises during the third year (see Chapter 3). In the context of practical clinical work and case discussions, these aspects come naturally and therefore form an important part of the clinical education.
- ***Students are introduced to bibliographic searches, scientific methods and research techniques, and writing of scientific papers.*** See section 6.1 and the presentation of "Master's degree project" below.
- ***Students are offered the chance to participate to research programs.*** Master's degree projects are often related to ongoing PhD student projects and other research projects. There are also instances where students are 'employed' for help with sampling and other activities in research projects. Sometimes, researchers advertise for assistance from first- and second-cycle students, and sometimes recruitment is simply by means of mentioning the possibility to assist in a project during a lecture.
- ***Master's degree project in Veterinary Medicine, 30 ECTS.*** This final semester course gives the student opportunities to gain in-depth knowledge in a subject within veterinary medicine, as well as independent planning and investigation of a research- related problem. Through *Minor Field Studies (MFS)*, a travel scholarship for undergraduate students. The scholarship offers the opportunity to do field studies in a low- or middle-income country when writing an essay or performing an degree project focusing on development issues. The grant is administered by Sida (https://www.sida.se/en). The course includes the presentation of a graduation thesis. The degree project mainly consists of a supervised scientific research project within veterinary science. The work process includes identification and formulation of issues and questions in order to solve a scientific research task within a given framework, to independently search for and use

scientific literature of relevance, to apply scientific methods and to present the various parts of the project, both in writing and orally. The written report is published through Epsilon. The oral presentation is conducted for an academic audience and students are appointed as 'opponents' at each other's presentations.

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

10.3.1. PhD study

Doctoral education at VH Faculty aims at giving the doctoral student a scientific way of working, subject knowledge and training in pedagogics and leadership. The PhD program is four years of full-time work and is not allowed to be conducted on less than 50% of full time, i.e. it must be completed in a maximum of eight years. Maternal/paternal leave and sick-leave are allowed and will extend the PhD period accordingly.

The following doctoral education subjects are offered at VH Faculty:

- Animal Science
- Bioinformatics
- Biology
- Biomedical Science
- Technology
- Veterinary Nursing Science
- Veterinary Science

The Graduate School for Veterinary Medicine and Animal Sciences (GS-VMAS)

A research (graduate) school established within VH Faculty supports all graduate students and research topics at the VEE, coordinates PhD courses and arranges seminars and workshops.

10.3.2. Continuing education programs provided by the VEE

Swedish competent authorities do not require veterinarians to prove that they have spent a minimum number of hours each year on CPD to retain their licence to practise.

CPD courses for active professionals

Contract education is regulated by Ordinance (2002:760) for contract education at HEIs and Regulations of the Swedish National Agency for Higher Education concerning contract education at universities and higher education institutions (HSVFS 2003:3). The rules for contract education have resulted in a drastic drop of VH Faculty's own range of CPD courses. Instead, many teachers, researchers and clinicians at SLU are engaged in courses organised by external actors, such as SVF/SVS, VeTA-bolaget, Gård och Djurhälsan, and the major veterinary companies (e.g. AniCura, Evidensia/IVC). As a result, formal agreements are now in place or are being negotiated between VH Faculty and some of the course suppliers.

The CPD courses for veterinary professionals offered by VH Faculty and VTH 2021-2023 are summarised in Table 10.1.4. There are also CPD courses directed at other groups in industry, livestock farming etc., but these are not included in the table as they are mainly given by the animal science departments. One-day conferences and seminars are not considered to fall under the regulations for contract education. Several conferences, seminars and evening lectures are given by VH Faculty and VTH each year, often aiming at a wide audience, including lay people. The annual Veterinary Congress, which is the major CPD meeting for Swedish veterinarians, is arranged by the Swedish Veterinary Association. A number of parallel themes covering different species and subjects are offered during this two-day meeting. Veterinarians employed by SLU can attend this congress at the department's expense. Veterinary students are invited at no, or reduced, cost.

National Veterinary Specialist Recognition
Currently, approximately 6 candidates are registered in a training program at SLU for step I or II Veterinary Specialist Recognition.

European and American Veterinary Specialisation (Diplomates)
Currently, approximately 18 candidates are registered in a training program (residency) at SLU for a European Veterinary Specialist degree.

Supplementary education for veterinarians with degrees from countries outside the EU/EEA and Switzerland (TU-VET), 120 ECTS
Individuals from outside the EU/EEA/Switzerland area holding a Degree in Veterinary Medicine which comprised at least five years full-time studies can apply for a Swedish veterinary licence from the Swedish Board of Agriculture. A possible decision from the Board may be that the applicant has to undergo supplementary training (TU-VET), which is organised by SLU. With the exception of the first courses in the TU-VET program, TU-VET students join regular Veterinary Medicine program courses.

Table 10.3.1.a. *Number of VHF employees registered at postgraduate clinical training*

Training	2023/2022	2022/2021	2021/2020	Mean
Swedish specialist candidates				
Companion animals step 1	-	1	1	0.7
Internal medicine step 2	-	-	1	0.3
Diplomate candidates				
ECAR	3	2	2	2.3
ECAWBM	1	1	1	1
ECHBM	1	1	1	1
ECEIM	1	1	1	1
ECPHM	1	1	1	1
ECVAA	0	0	2	0.7
ECVIM-CA	1	2	2	2.3
ECVP	1	1	1	1
ECVPH	1	1	1	1.0
Total	***10***	***11***	***14***	***11.7***

Table 10.3.1.b. *Number of VTH employees registered at postgraduate clinical training*

Training	2023/2022	2022/2021	2021/2020	Mean
Swedish specialist candidates				
Companion animals step 1	5	6	7	6
Diplomate candidates				
ECVCP	1	3	2	2
ECVDI	5	5	4	4.7
ECVS	2	2	2	2
Total	***13***	***16***	***15***	***14.7***

Table 10.3.2. *Number of VHF students active (registered) at postgraduate research training*

Degree	2023/2022	2022/2021	2021/2020	Mean
PhD	149 (157)	168 (172)	169 (179)	**162 (169)**
Licentiate	12 (16)	13 (15)	10 (13)	**11.5 (15)**
Total	**161 (173)**	**181 (187)**	**179 (192)**	**174 (184)**

Table 10.3.3. *Number of students registered at other postgraduate programs (including any external/distance learning courses)* ***None***

Table 10.3.4. *Number of attendees to a selection of continuing education courses* ***for veterinarians*** *provided by VHF and VTH*

Courses	2023	2022	2021	Mean
Companion animals				
Diagnostic imaging – CT of the abdomen	18	0	0	
Ultrasound diagnostics, basic	31	36	18	
Ultrasound diagnostics, advanced	15	0	0	
Skeletal radiology small animals	8		20	
Interactive diagnostic imaging thorax and abdomen	15	0	0	
Small animal reproduction ultrasound	25	0	0	
Small animal MRI		10		
Cardiology I	80	80	80	
Cardiology II	80	80	80	
ECG	15	15	30	
Internal medicine	0	0	30	
Artificial insemination	0	10	0	
Equine				
Equine dentistry diagnostic imaging	25	25	25	
Anesthesiology	15	0	0	
Artificial insemination	18	0	18	
The hoof	52	56	2	
Equine dentistry clinical	89	64	0	
Bovine				
Artificial insemination	0	0	13	
Porcine				
Artificial insemination	0	0	7	
Total	**486**	**376**	**323**	**395**

10.3.3 Prospected number of students registered at post-graduate programs for the next 3 academic years

No major changes are expected.

10.3.4. Description of how the postgraduate clinical trainings of the VEE contribute to undergraduate veterinary education and how potential conflicts in relation to case management between post- and undergraduate students are avoided

Students conducting their PhD studies are often involved in teaching undergraduate students, with a maximum of 5% of full time teaching/administrative work permitted per year. Many are employed in the role of teachers (approx. 20%) in practical clinical rotation teaching, as well as seminars and lectures. This extends their PhD period according to the amount of teaching performed. Some PhD students work as part-time clinicians at VTH (not allowed to exceed 50% of full-time) and in this role participate in the practical clinical training of students in the Veterinary Medicine program. All PhD students who participate in teaching must have attended mandatory pedagogic training.

Several EBVS-recognised residency programs are given at VH Faculty/VTH. Teaching may be a part of each program to the extent the specific program allows (differs between specialties, normally not exceeding 20% of full time during the three years of residency). The students receive contemporary training, as the residents and PhD students perform state-of-the art studies and training, while post-graduate training candidates develop their skills in supervising

and communication. This strengthens the competence of the staff in VH Faculty, as we select most of our senior teachers from this group.
No conflicts concerning management arise between different levels of education, since the number of patients available for teaching purposes is adequate and enables differentiation of severity levels of patients for undergraduate and postgraduate students.

10.3.5. Description of how the continuing education programs provided by the VEE are matched to the needs of the profession and the community
Please see the description in section 10.3.4 *(CPD courses for active professionals).*

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 study program.

10.4.1. Description of the mechanism used by VEE to ensure that its research activities contribute to research-based education
The VEE's academic staff should both teach and carry out research. VEE's strategic aims are high-quality academic research and teaching in the fields of veterinary medicine and animal science. Both the free search for knowledge and needs-motivated research have a natural place at VEE. Research, education and environmental monitoring and assessment must be characterised by high quality, an international dimension and strong links between the various activities. VEE also works to ensure that scientific results and data are disseminated and used in society, in both the short and long term. VEE's students must be able to establish a good foundation for a changeable professional life. Whenever academic staff are hired, promoted or the salary is reviewed, their accomplishments in teaching and research are reviewed. The professors at VEE have the responsibility for directing the research and applying for funding, guided by the Faculty Development Strategy (VH's presentation | Medarbetarwebben (slu.se)).

10.4.2. Description of how (procedures) and by who (description of committee structure) research, continuing and postgraduate education programs organised by the Establishment are decided, communicated to staff, students and stakeholders, implemented, assessed and revised
All programs with relevance to research and continuing and postgraduate education are subject to approval by the Dean and Vice-Chancellor, as required by Swedish Law, and the Dean's and Vice-Chancellor's Delegations of Authority, which state the responsibilities and powers of bodies and decision-makers within the university. Decisions of the Dean are supported by the advisory bodies, including the Dean Council and Faculty Board. All programs undergo regular evaluation. Information on the program evaluation results is communicated to internal and external stakeholders. The continuing education courses are communicated to prospective participants via the VHF website and intranet and also by advertisements in e.g. the Journal of Swedish Veterinary Association.

Comments
The Swedish Higher Education Authority's (UKÄ) quality assurance process evaluation of the third-cycle (PhD) education in veterinary medicine at VH Faculty was published in March 2020. The assessment determined that the education meets all the quality requirements and concluded the education can be rated "high quality". The Faculty has great potential for education at PhD level, and larger groups of graduates could be admitted. However, the most important factor limiting this kind of activity is the funding probabilities for sole research within veterinary medicine, especially clinical research. It is a strategic decision to enhance the

interdisciplinary research collaboration and expanding the activities within One Health. This will hopefully lead to increased funding and result in more PhD students being appointed.

Suggestions for Improvement

There is a strong desire to combine third-cycle (PhD) studies with European specialist education, which could attract young veterinarians to the academic sphere. Based on a recent policy for facilitating this, para- and clinical research will hopefully increase within the EBVS colleges adopting this combined approach. There are already a few shared positions at VH Faculty where veterinarians are combining their PhD and EBVS-college residencies, improving the clinical/para-clinical research focus. These veterinarians are a highly appreciated part of the teaching staff, as they are very skilled in their topic and are helping to promote evidence-based veterinary medicine teaching.

Glossary

CIQA: Committee on Internal Quality Assurance
CCT: Core Clinical Training
CPD: continuous, professional development
D1C: ESEVT Day One Competences
DEQAR: Database of the European Quality Assurance Register
EAEVE: European Association of Establishments for Veterinary Education
EBVS: European Board of Veterinary Specialisation
ECCVT: European Coordinating Committee on Veterinary Training
ECDC: European Centre for Disease Prevention and Control
ECOVE: European Committee on Veterinary Education
ENQA: European Association for Quality Assurance in Higher Education
EPT: Elective Practical Training
ESEVT: European System of Evaluation of Veterinary Training
ESG: Standards and Guidelines for Quality Assurance in the European Higher Education Area
ExCom: EAEVE Executive Committee
FSQ: Food Safety and Quality
FTE: Full-Time Equivalent
FVE: Federation of Veterinarians of Europe
HACCP: Hazard Analysis and Critical Control Points
IAWG: International Accreditors Working Group IT: Information Technology
JLV: Gender equality and equal opportunities
OSCE: Objective Structured Clinical Examination PDCA: Plan Do Check Adjust
PN-VH: The Program Committee for the VHF
QA: Quality Assurance SER: Self-Evaluation Report
SOP: Standard Operating Procedure
SORK board: Students that manage (Student well-being formation)
SPF: Specific Pathogen Free
SWOT: Strengths, Weaknesses, Opportunities and Threats
VEE: Veterinary Education Establishment
VHF: Faculty of Veterinary Medicine and Animal Science
VPH: Veterinary Public Health
VTH: Veterinary Teaching Hospital, in Swedish *Universitetsdjursjukhuset - UDS*
WHO: World Health Organisation
3R: Replacement, Reduction, Refinement

List of Appendices: Current teaching staff; Units of study of the core VP; Maps of the VEE; Written assessment procedures for QA; List of scientific publications; SLU and VHF Strategies and WP:s; Previous evaluations; VHF:s new organisation; Course schedule and Clinical Rotation; Contracts EPT; Policy for animal use and handling; Mapping of 1st Day Competence.