



Norwegian
University of
Life Sciences



SELF EVALUATION REPORT

Norwegian University of Life Sciences
Faculty of Veterinary Medicine

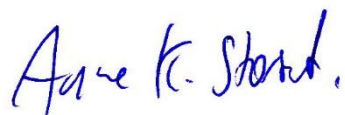
ÅS, NORWAY

EAEVE/ESEVT visitation 16th -20th October 2023

Welcome

This Self Evaluation Report has been finalized and approved by the Board of The Faculty of Veterinary Medicine at the Norwegian University of Life Sciences on August 14th, 2023.

We look forward to welcoming the EAEVE visitation team in October to present the Faculty of Veterinary Medicine and our study program in veterinary medicine in real time and receive the evaluation from the expert committee.



Anne K. Storset

Dean



Lisbeth Hektoen

Head of teaching

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Introduction

Brief history of the VEE and of its previous ESEVT Visitations

The Norwegian School of Veterinary Science (NVH) was established in 1935 as a specialized university institution. As the only institution that offers veterinary education in Norway, NVH has a national responsibility for research and education in veterinary science. NVH was situated together with the National Veterinary Institute (NVI) on the Adamstuen Campus in Oslo. NVI is the Norwegian national research institute for veterinary medicine and provides diagnostics, monitoring, risk assessments and research in mammals, birds and fish. With the commencement of EAEVE visitation in 1994, the veterinary programme at NVH was approved and has maintained its status most recently with the granting of accreditation following the ESEVT visitation in 2014.

In 2008, the Norwegian Parliament decided that NVH was to be merged with the University of Life Sciences (UMB) at Ås. At the same time, it was decided to also relocate NVI to Ås.

The fusion of NVH and UMB into Norwegian University of Life Sciences (NMBU) took place in 2014. The planning and relocation process from Campus Adamstuen to Campus Ås was completed in 2021. Currently, most of the activities of the Faculty of Veterinary Medicine (NMBU-VET) are in the new modern buildings at Ås. In addition, NMBU-VET has retained a section in Sandnes, Rogaland County, an area with large and intensive livestock production, on the south-west coast of Norway, about 600 km away from Oslo. NMBU-VET is now one of seven faculties at NMBU.

Main features of the VEE

NMBU-VET is a specialized teaching institution within veterinary science and offers two study programs: Degree in Veterinary Medicine and a Degree in Veterinary Nursing. From 2020, the VEE has an annual intake of 90 students for Veterinary medicine and 30 students for Veterinary Nursing. NMBU-VET is the only institution in Norway that offers a Veterinary degree. The VEE also has a postgraduate PhD program, residency programs within several colleges, intern programs and several other courses for continuing education. The VEE is led by the Dean and is organized in four Departments, each with one Head of Department, and an administration with an administration manager. The NMBU-VET management team consists of the Dean, Department Heads and Head of administration - all of whom are veterinarians.

Brief summary of the main developments since the last visitation

NMBU-VET has undergone several important processes since the last ESEVT visitation in 2014:

Organisational changes

- 2014: Fusion of NVH and UMB to NMBU
 - Change of status from a specialised University institution to a Faculty within a University
- 2014-2016: Transitional period
 - The four veterinary Departments of NVH incorporated into Faculty VET-BIO from 01.01.2014 to 31.12.2016.
- 2017: Faculty of Veterinary Medicine, NMBU-VET established on 01.01.2017.
- 2020: Restructuring of the four Departments within NMBU-VET.

Localisation in new buildings and new curriculum

- 2020: Relocation from Campus Adamstuen to Campus Ås (December 2020-September 2021)
 - When the Norwegian Parliament initiated the budget process to build facilities for NVH and NVI, the financial commitment represented the largest single investment in the higher education sector in Norway's history. In Norway, the state economy is such that the ownership of the building is transferred to the managing university without remuneration when the building is completed.
- 2020: Annual intake of veterinary students increased from 70 to 90.
- 2021: New curriculum.

Major problems encountered by the VEE (whether resolved or not)

- 2014-2020: The challenges of providing modern veterinary education within outdated facilities at Campus Adamstuen were resolved by relocation to Campus Ås.
- 2019-2021: The relocation of NMBU-VET from Campus Adamstuen to Campus Ås was planned for the non-teaching period of summer 2019 but with delays in completing the new VET Building, the move took eight months and was not completed until September 2021.
- 2020: Covid-19 crisis required compensatory measures to reduce the negative effects on students' learning. The covid-19 crisis was a great strain on staff and students.
- Case numbers for small animals at Campus Ås are increasing, but still lower compared to Campus Adamstuen. The Farm service unit of Herd health services has its clients more distant and requires driving through heavy traffic. The client base for the Equine Hospital has already grown larger than it was at Campus Adamstuen.
- 2023: The extended relocation and start-up period has resulted in NMBU-VET running at a loss. This deficit can be broken down into the following areas: 1) The relocation process itself was not fully funded and delays meant that funds set aside for the relocation were not sufficient. This deficit is still on NMBU-VET's account, but there is communication with the university's administration about offsetting this in future university budgets. 2) NMBU-VET moved from its client base in Oslo. Establishing a new client base at Ås is progressing, but the period with fewer patients for the small animal hospitals has resulted in lower income. 3) The new building is technically advanced, which requires highly educated technical staff and contains advanced equipment with high operating costs and large costs for service and maintenance.
- NMBU-VET was awarded an additional 20 publicly-funded admissions to the veterinary program in 2020. The increase in student numbers provides increased income for the VEE but the full effect will not be realised until 2028. A review of NMBU-VET's total activities aiming at reducing expenses is presently being carried out by the VEE. The report resulting from this work will be presented to the NMBU-VET Board which will decide on permanent cuts in cost to be implemented from 2024.

Version and date of the ESEVT SOP which is valid for the Visitation

The ESEVT SOP which is valid for the Visitation is: SOP 2019 as amended in September 2021 (date: 30 September 2021)

Area 1. Objectives, Organisation and QA Policy

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

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

Description of the mission statement and the objectives

NMBU-VET is responsible for education, research, dissemination and innovation within veterinary medicine, including animal health, animal welfare, food safety and related disciplines. NMBU-VET has a special responsibility for the topics fish health and fish welfare within aquaculture. As the only VEE in Norway, NMBU-VET has a special responsibility for the veterinary profession and its development.

NMBU-VET has the objective to train veterinarians who:

- Have good basic knowledge and skills in veterinary medicine enabling them to work for improved animal health, public health and animal welfare.
- Understand both the meaning of the terms One Health and "animal intrinsic value" and act ethically in line with these principles.
- Have a broad understanding of natural science issues and are able to identify, formulate and solve complex issues within the field of veterinary medicine and research.
- Have the ability to communicate in an understandable, effective and respectful way with clients, the general public, colleagues and responsible authorities.
- Know their professional limitations and take care of the professional obligation linked to further education, training and professional development throughout their life.

Description of how the VEE ensures that the provided core curriculum enables all new graduates to perform as a veterinarian capable of entering all commonly recognised branches of the veterinary profession.

All veterinary graduates from NMBU-VET receive a general authorization as a veterinarian from the National Food Safety Authority (NFSA). The authorization allows a free choice of work within all fields of veterinary medicine after graduation, regardless of tracking during the last year. The learning outcomes of the veterinary programme (Curriculum 2002) are aligned with the ESEVT Day One Competences and recognised as such at the EAEVE visitation in 2014. The ESEVT Day One Competences are also a basis for the 2021 curriculum that is being introduced at NMBU-VET from 2021.

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

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

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

Details of the VEE, i.e. official name, address, phone number, E-mail and website addresses, VEE's Head, official authority overseeing the VEE

Official name: [Faculty of Veterinary Medicine, Norwegian University of Life Sciences](#) (NMBU)

Address: Elizabeth Stephansens vei 15, 1433 Ås, Norway

Tel: +47 67230000

E-mail: post-vet@nmbu.no

Head of Faculty of Veterinary Medicine, NMBU: [Anne Storset](#), Dean, Professor, Cand Med Vet, Dr Scient.

Official authority overseeing NMBU-VET:

Organisational chart (diagram) of the VEE with a brief description of the decision-making process

All 10 universities in Norway are under the supervision of the Ministry of Education and Research as determined by the Norwegian Parliament under the Universities and University Colleges Act (2005). Official names and contact information include:

Minister of Research and Higher Education: [Sandra Borch](#), Kirkegata 18, Oslo Norway.

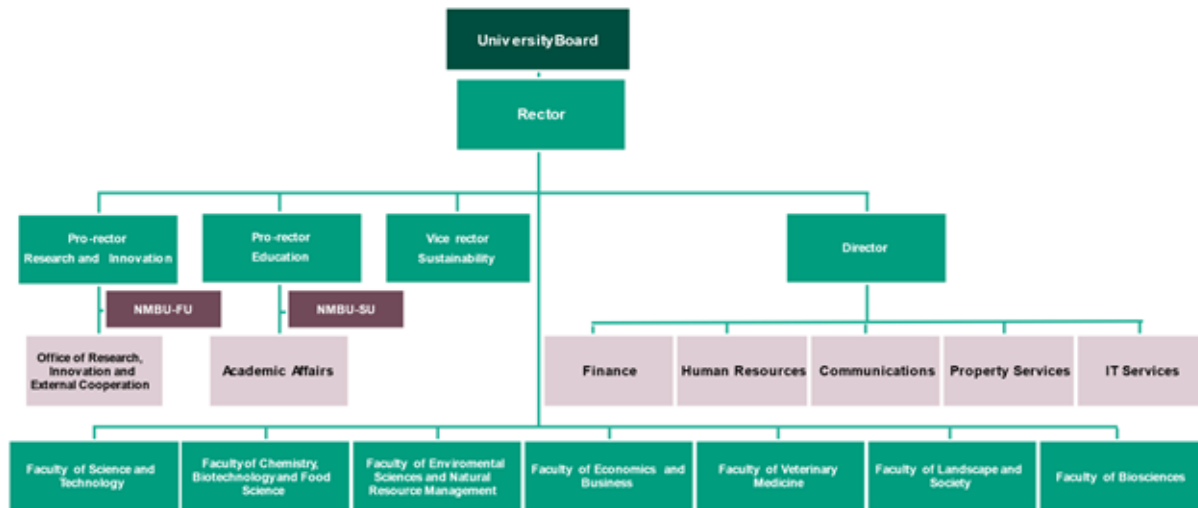
Tel: +47 22249090, E-mail: postmottak@kd.dep.no

Acting Rector, NMBU: [Siri Fjellheim](#), Universitetstunet 3, 1433 Ås, Norway.

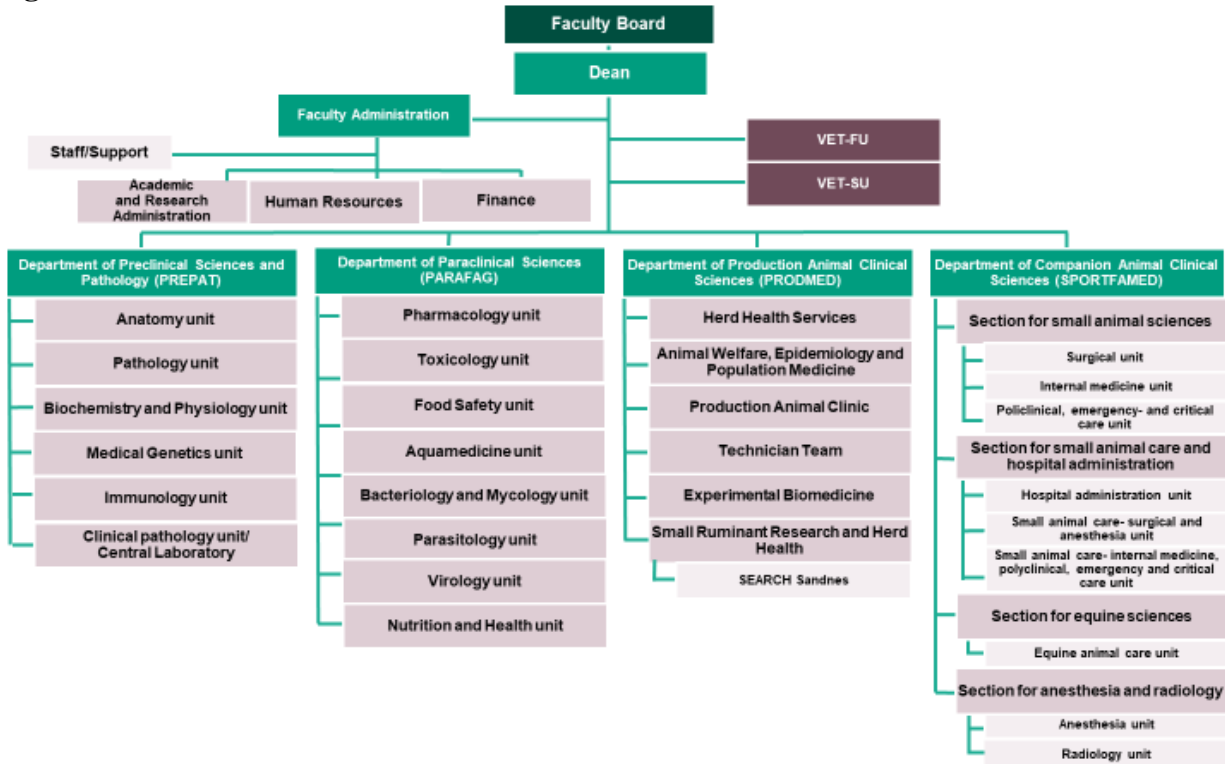
Tel: +47 67232801, E-mail: siri.fjellheim@nmbu.no

NMBU has decision making procedures at three levels: university, faculty and department level. The University Board is the highest authority at the university and answers to the Minister of Research and Higher Education for the activities of NMBU including the administration of NMBU's collective resources.

Organisation NMBU



Organisation NMBU-VET



NMBU-VET Faculty Board

The Faculty Board decides the goals, priorities, and strategies for the faculty ([The Faculty of Veterinary Medicine's board and committees | NMBU](#)). The Board adopts an annual plan and budget and is responsible for follow-up through approval of systems for quality assurance and quality development. The NMBU-VET Board has 3 external members, one of whom is the chairman, 2 members representing permanent staff, 1 member from the temporary staff, 1 support staff member and 2 student members. The Dean of the faculty is secretary.

Dean

Anne K. Storset, Professor, Cand Med Vet, Dr Scient.

As head of NMBU-VET, the Dean has overarching responsibility for the quality of study programmes, for work on the quality of education in NMBU-VET, for personnel management and competence development and economic management of the faculty. NMBU-VET Board sets strategic guidelines for the work. The Dean is responsible for annual and periodic program evaluations at NMBU-VET and for ensuring that the NMBU-VET's measures are followed up. The Dean is appointed by the University NMBU Board for four years and reports annually to the Rector on the status of the quality of education through the NMBU-VET's Quality of Education Report (Study QA report) and study program reports (all levels). The Dean leads the NMBU-VET management team composed of the Leader of faculty administration and the four Heads of Department. Heads of Departments are appointed by the Faculty NMBU-VET Board for periods of 4 years.

List of departments/units/clinics with a very brief description of their composition and management (further information may be provided in the appendices)

Department of Preclinical Sciences and Pathology (PREPAT)

Head of Department Arild Espenes, Professor, Cand Med Vet, Dr Scient.

PREPAT has six units: Anatomy; Pathology; Biochemistry and Physiology; Medical Genetics; Immunology; and Clinical Pathology (Central laboratory). PREPAT contributes to teaching, research and dissemination in the veterinary basic sciences, clinical pathology and pathology. The Department employs approximately 64 staff members. The Head of Department leads the management group composed of Heads of Units.

Department of Paraclinical Sciences (PARAFAG)

Head of Department Thea B. Blystad Klem, Cand Med Vet, PhD

PARAFAG has eight units: Pharmacology; Toxicology; Food Safety; Aquamedicine; Bacteriology and Mycology; Parasitology; Virology; and Nutrition and Health. PARAFAG contributes to teaching, research, and dissemination in the veterinary paraclinical sciences including aquamedicine. The Department employs approximately 109 staff members. The Head of Department leads the management group composed of Heads of Units.

Department of Production Animal Clinical Sciences (PRODMED)

Head of Department Ane Nødtvedt, Professor, Cand Med Vet, MSc, PhD

PRODMED has six sections: Herd Health Services; Production Animal Clinic; Small Ruminant Research and Herd Health; Experimental Biomedicine; Animal Welfare, Epidemiology and Population Medicine; and Technicians' team. PRODMED contributes to teaching, research and dissemination in production animal clinical sciences, laboratory animal medicine, animal welfare and population medicine. The department provides the ambulatory herd health service and production animal clinic and employs approximately 100 staff members. The management of PRODMED is comprised of the Head of Department, and the Heads of the six Sections.

Department of Companion Animal Clinical Sciences (SPORTFAMED)

Head of Department Åse Ingvild Risberg, Cand Med Vet, PhD, DACVIM-LA

SPORTFAMED has four sections: Small Animal Sciences; Small Animal Care and Hospital Administration; Equine Sciences; and Anaesthesia and Radiology. SPORTFAMED contributes to teaching, research, and dissemination in veterinary companion animal clinical sciences. The

University Animal Hospital includes the Equine Hospital and the Small Animal Hospital and is the only veterinary teaching hospital in Norway. The department employs approximately 140 staff members. The management of SPORTFAMED consists of Head of Department and the Heads of the four Sections.

NMBU-VET Administration

Administration Manager Hilde Fossum, Cand Med Vet, PhD

NMBU-VET administration has three units each lead by a Head of Unit: Academic and Research Administration; Human Resources and Finance, in addition to a Staff/support unit organized under the Administration Manager. The administration employs approximately 35 staff members.

List of the councils/boards/committees with a very brief description of their composition/function/responsibilities and implication of staff, students and stakeholders (further information may be provided in the appendices)

Faculty Academic Affairs Committee (VET-SU)

VET-SU is the VEE's strategic body within education advising the Dean in educational matters and is the program council for the veterinary program. VET-SU works on delegation from the Dean, who has the final decision-making authority. The Dean decides the mandate for VET-SU. VET-SU has one member from each Department appointed by the Dean for a period of four years and two veterinary student representatives and one veterinary nurse student representative elected by the students for two years. Staff from Academic and Research Administration serve as secretary. The Head of Teaching at NMBU-VET chairs VET-SU and is a member of NMBU-SU. The Head of Teaching is appointed by the Dean in a 50% position. The Head of Teaching is responsible for the development of the learning environment and the academic and educational quality of courses and study programs at undergraduate level. The Head of Teaching participates in meetings in the VET management team when issues concerning teaching and curriculum are discussed.

Faculty Research Committee (VET-FU)

VET-FU works strategically to improve the quality of research at the VEE and advises the Dean on matters related to research. VET-FU discusses relevant matters brought for discussion in the university level research committee (NMBU-FU). The Head of Research at the VEE, who is appointed by the Dean, chairs VET-FU and is a member of NMBU-FU. The committee consists of up to eight members plus a secretary. The Academic and Research Administration is secretary. The Dean decides the mandate and appoints members to the committee. The Head of VET-FU participates in meetings in the VET management team when relevant matters connected to research are discussed.

PhD Programme and Diplomate Education Committee (PhD Committee)

The PhD Committee has the operative responsibility for the contents and organization of the PhD programme, works to improve and develop the program, is responsible for the annual PhD Programme evaluation, coordinates development work and advises the Dean on matters related to the PhD Programme or Diplomate Education. The PhD committee has 9 members, including two PhD candidates, one Resident and one undergraduate student. The Academic and Research Administration is secretary. The Head of the PhD committee participates in meetings in the VET management team 1-2 times per year.

Biosecurity Committee

The biosecurity committee has representatives from PREPAT, PARAFAG, PRODMED, SPORTFAMED Small Animal Hospital and SPORTFAMED Equine Hospital, appointed by the Dean for a period of four years. The biosecurity committee is an advisory body for the Dean and Heads of Departments in matters concerning infection control, while responsibility and authority for infection control work rests with the line management at NMBU-VET.

Appointment and employment authority for academic staff positions (AU)

The Appointment authority (AU) for academic staff positions consists of two committees: A **Nomination committee** consisting of a leader appointed by the Dean, two representatives of permanent staff, two representatives appointed by civil service unions; one student representative appointed by the faculty's student council; and an **Employment committee** consisting of the Dean; two representatives of permanent staff appointed by NMBU-VET board; two representatives appointed by civil service unions and one student representative appointed by the faculty's student council .

Appointment and employment authority for support staff positions (AR)

The Appointment authority (AR) for support staff positions consists of two committees: A **Nomination committee** consisting of the immediate superior of the position who nominates and is assisted by one or more other employees as advisers. One employee representative appointed by the civil service union must be invited to participate in the process; and an **Employment committee** consisting of the Dean, deputy head of faculty, 2 staff representatives appointed by NMBU-VET board, 2 staff representatives appointed by civil service unions.

Student Council at NMBU-VET (VET-SR)

VET-SR is formed by a leader and a deputy leader elected by a general meeting open to all students at NMBU-VET. The general meeting is the highest student body at NMBU-VET. Student representatives to the university's Student Council, AU, the PhD Committee and VET-SU are also elected by the general meeting. The general meeting takes place in April and November.

Description of the formal collaborations with other VEEs

NMBU-VET maintains scientific and research collaborations through numerous individual and institutional professional partnerships. Formal collaborations include student exchange with other VEEs, mainly with VEE teaching in English, but also with VEEs in Germany, Switzerland, Finland, France, and Spain. NMBU is part of the Nordic Forestry, Veterinary and Agricultural University Network, which offers courses for PhD candidates and specialist candidates in veterinary medicine. NMBU-VET is member of the EAEVE region 6. Three members of staff are EAEVE experts, including one coordinator. NMBU-VET is a partner in a European Erasmus+ project (VetRepos) with 5 other Veterinary Schools (Utrecht, Copenhagen, Hannover, Uppsala, and Helsinki) and EAEVE to establish a joint bank with multiple-choice questions that can be used to create progression tests for veterinary education in Europe.

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

Dean: Anne K. Storset, Professor, Cand Med Vet, Dr Scient.

The Dean has overall responsibility for all academic and professional activities in NMBU-VET. The Dean can delegate responsibility.

Veterinary Curriculum: Head of teaching and chair of VET-SU Lisbeth Hektoen, Associate professor, Cand Med Vet, PhD. The head of teaching has responsibility for the veterinary curriculum and reports to the Dean.

Production Animal Clinic: Head of Department of Production Animal Clinical Sciences Ane Nødtvedt, Professor, Cand Med Vet, MSc, PhD
The Head of PROMED has responsibility for the professional, ethical and academic affairs in the Production Animal Clinic and reports to the Dean.

Small Animal Hospital and Equine Hospital: Head of Department of Companion Animal Clinical Sciences Department Åse Ingvild Risberg, Cand Med Vet, PhD, DACVIM-LA (Diplomate Large animal Internal medicine)
The Head of SPORTFAMED has responsibility for the professional, ethical, and academic affairs in the Small Animal Hospital and the Equine Hospital and reports to the Dean.

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

Summary of the VEE's strategic plan with an updated SWOT analysis (Strengths, Weaknesses, Opportunities and Threats) (the full Strategic Plan may be provided in the appendices)

NMBU-VET strategy plan of 2019-2022 was largely characterized by work towards a Unified University, namely, planning the impending move from Campus Adamstuen, relocation, and establishment in new premises at Campus Ås.

In autumn 2022, NMBU adopted the Strategic Plan (2023-2030) that applies to all faculties. NMBU has an overall commitment to continue to develop knowledge and expertise that contribute to comprehensive societal changes towards a sustainable future. The university has a strategic commitment to excellent research, education, innovation, and dissemination of knowledge within environmental and life sciences, targeting the United Nation's Sustainable Development Goals. NMBU has selected four areas of priority to support its overall commitment (1) Lifelong Learning, (2) Joint Research Effort, (3) Innovation, and (4) a Unified University.

In the spring of 2022, NMBU-VET started a process involving all employees, leaders at all levels and staff union representatives working towards a new strategic action plan to follow the NMBU strategy. The NMBU-VET strategic action plan was approved by NMBU-VET board in June 2023 and measures and measurement parameters are now being designed in a process where the faculties at NMBU are coordinated. Measures and measurement parameters will be selected for annual plans. The Strategic Action Plan 2023-2026 identifies five areas of priority. These areas correspond to the four priority areas of the university plus a priority area relating to faculty specific activity (see Appendix 06).

NMBU-VET does annual risk evaluations in association with the annual plans for the VEE. In 2022, NMBU-VET also did SWOT analysis in connection with the process of forming a new strategic action plan.

SWOT analysis:

| | Strengths | Weaknesses |
|-----------------|---|---|
| Internal | <ul style="list-style-type: none"> • Well qualified scientific and technical personnel and highly motivated students. • New, well-equipped, state-of-the-art facilities, including laboratories, hospitals, teaching rooms and experimental animal and fish facilities. • Development of a new curriculum allowing improved teaching methods and better integration of professional expertise across subjects, to provide quality with effective use of resources. • Clinical communication and other professional soft skills are emphasized in the new curriculum, aiming to build independence, self-confidence, and a sense of mastery in the students. • High number of externally funded research projects and PhD students allows for high research activity. • Long tradition of collaboration with industry stakeholders and performing applied research ensures relevance in education. | <ul style="list-style-type: none"> • NMBU-VET’s large budget deficit and high operating costs in the new facilities affect operations and opportunities for development of core activities. • Increasing the activity and caseload in the hospitals and at the same time establishing a new veterinary curriculum are challenging, as resources are limited, and both tasks require attention from teaching- and scientific personnel. • Capacity of facilities is not fully utilized, expenses run without income. • Curriculum overload in the new curriculum due to teachers’ resistance to change and insufficient coordination between subject areas. • Potential to attract international research funding is not fulfilled. |
| | Opportunities | Threats |
| External | <ul style="list-style-type: none"> • Great demand for veterinarians in Norway. • High trust from society, strengthened by accreditation status of both study programs. • Potential for synergy with other faculties at NMBU in both education and research. • Hospital case load is steadily increasing. • Geographical area for production animals can be optimized after relocation and equine ambulatory services can be further developed. | <ul style="list-style-type: none"> • Relocation may still cause drainage of employees, due to more centrally located job opportunities with less commuting. • Inability to reach a sufficient caseload for small animals provides a poor basis for clinical practical training. • Inability to build sufficient independence, self-confidence, and a sense of mastery in the students to prepare them for the challenges related |

| | | |
|--|---|--|
| | <ul style="list-style-type: none"> • Implementation of external practice in the new curriculum may increase the relevance of the program. • Participation in international progression testing may provide valuable information about our curriculum for further development. | <p>to mental health and working environment in the veterinary profession.</p> <ul style="list-style-type: none"> • Economic crisis with increased energy prices changes the financial conditions for universities in Norway. • Reduced ability to pay by animal owners may lead to reduced income at our animal hospitals. |
|--|---|--|

Summary of the VEE Operating Plan with timeframe and indicators of achievement of its objectives

The annual operating plan (measures and measurement parameters) for NMBU-VET's strategic action plan 2023-2026 is being coordinated in a process involving all the faculties at NMBU. In 2023, the plans related to veterinary education at NMBU-VET are prioritized: 1.) Curriculum 2021. The planning of detailed structure and description of all courses including learning outcomes, learning activities and assessment is to be completed and all implemented new courses are to be evaluated and followed up. A specific aim in curriculum 2021 is to introduce sustainability in the course "Professional studies" and to make sustainability visible in all relevant courses. 2.) Pedagogical training. Pedagogical training for all groups of employees who participate in teaching is established and a new pedagogical course for junior staff is introduced. 3.) Clinical communication. The competence of teaching staff to give appropriate feedback to students is to be increased and students' clinical communication skills are to be improved by training clinical communication in difficult situations to prepare for professional work life. Seminars are to be held to develop teaching of clinical communication, and a new research program on the topic is initiated through the allocation of an internally funded PhD position.

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

Description of the global policy and strategy of the VEE for outcome assessment and Quality Assurance (QA), in order to demonstrate that the VEE:

a) has a culture of QA and continued enhancement of quality;

The Act Relating to Universities and University Colleges (2005) regulates higher education in Norway. The Norwegian Agency for Quality Assurance in Education (NOKUT) is an independent government agency that contributes towards quality assurance and enhancement in higher education. NOKUT is a member of ENQA and is committed to the Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG standards). NMBU adopted the current quality assurance (QA) system in 2015. The QA system was evaluated by NOKUT in 2019

and approval granted in 2020. NMBU-VET has a well-established culture for quality assurance. The current system from 2015 is built on the same principles as the system from 2004.

The university's Academic Affairs Committee (NMBU-SU) is led by the Prorector for Education, and deals with all educational policy strategies, policy, and concrete measures for the quality of education in line with its mandate and advises the Rector at University level. The Head of teaching at NMBU-VET sits on NMBU-SU and is Head of VET-SU. VET-SU deals with cases partly on delegation from the Dean and partly in an advisory capacity for the Dean in line with its mandate. There is an annual dialogue meeting between NMBU and NMBU-VET about the QA work.

b) operates cyclical, sustainable and transparent outcome assessment, QA and quality enhancement mechanisms;

The overall understanding of quality forms the basis for all steps of the QA work: Plan-Do-Check-Adjust is described as a learning (PDCA) cycle. This cycle forms the basis for advancement of education and teaching and is the cornerstones of QA work at course and programme level. All elements of the PDCA cycle are dealt with at the lowest possible level (Figure Standard 1.4). The procedures are intended to ensure that relevant parties including students are involved and that decision-making bodies have the necessary knowledge to enable continuous advancement. A division of tasks and responsibility in this work is important to ensure the quality of the process. Together with the evaluations, representation on boards, councils, committees and groups will give all involved parties, students and staff an opportunity to raise concerns and to point out areas for improvement. In addition, the students have a separate channel, '[Speak up](#)', which is NMBU's system for complaints and for reporting nonconformities.

c) collect, analyse and use relevant information from internal and external sources for the effective management of their programmes and activities (teaching, research, services);

Teaching

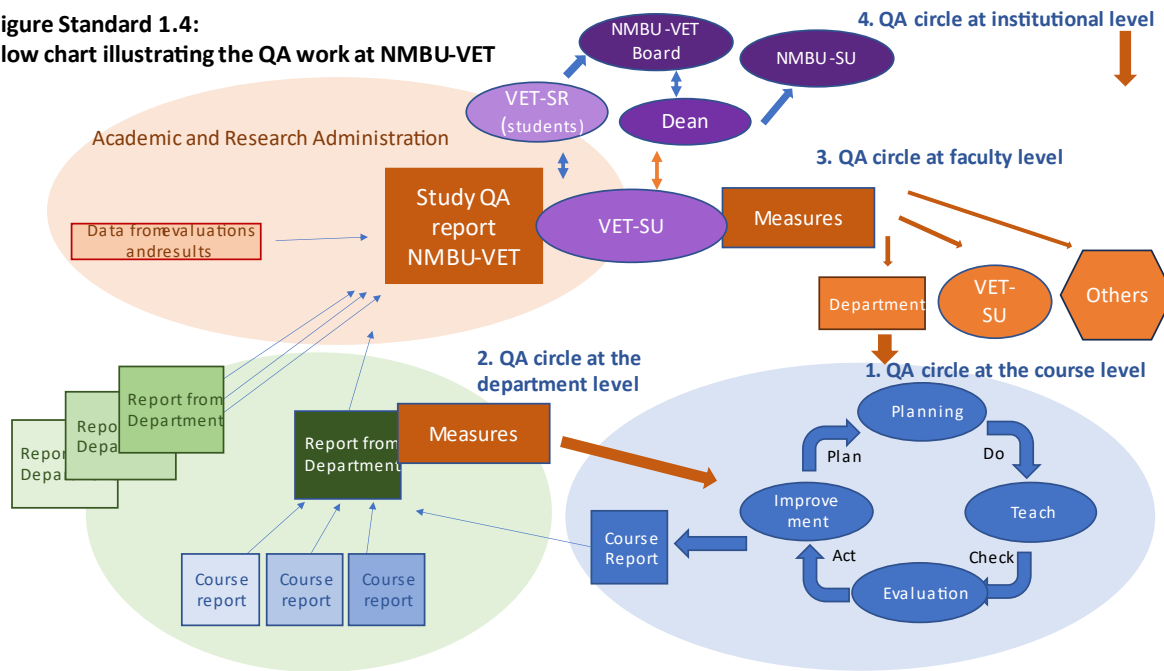
A Quality of Education Report (Study QA report) for NMBU-VET is prepared annually upon request from the Prorector for education at NMBU. This Study QA report describes the QA work for the previous academic year and the results of the measures that were worked on as well as new measures for the coming academic year. The Study QA report contains a quality report and program reports according to a template specified in NMBU's system. In addition, NMBU-VET attaches an appendix with several data, analyzes and assessments, as well as comments on the Study QA report from VEE's student representatives VET-SR. The broad participation in this cyclical QA process is described below:

Each course in the veterinary curriculum has a course coordinator. The course coordinator is, together with the individual course teachers, responsible for planning, implementing, evaluating, and improving the course (Figure Standard 1.4). The course coordinator reports annually to the Head of department and, together with the teachers, is responsible for improvements and advancements of courses. NMBU-VET has two supplementary systems for systematic student feedback; one is a web-based electronic system (Nettskjema_UiO) and the other is the use of student Reference Groups (see standard 9.5). VET-SR has meetings with the NMBU-VET management every 6 weeks and can also raise concerns directly with the Dean and Academic and Research Administration.

The four departments of NMBU-VET are responsible for the courses taught in the veterinary curriculum. The Head of each department is responsible for QA work being followed up and annually prepares an aggregated report on their department's QA work. The reports from each

department are presented to VET-SU and are included as core documents for the aggregated Study QA report for the entire VEE. The Study QA report is discussed at NMBU-VET management team and adopted by VET-SU. The report states who is responsible for following up next year's measures. The NMBU-VET Board annually approves the QA work described in the Study QA report. The Study QA report with comments from the VEE's student council (VET-SR) is sent to the Prorektor for education at NMBU and is included as a basic document for both the university's QA report and the learning environment report to the NMBU board. Bi-annual status reports to VET-SU have been introduced to ensure continuity in the QA work through the academic year.

Figure Standard 1.4:
Flow chart illustrating the QA work at NMBU-VET



Research

All PhD students submit an annual progress report to Academic and Research Administration, which in collaboration with the Heads of Departments decide on follow-up if necessary. Along with information from the administrative systems, supervisors, evaluation of the submitted theses, and other available information, the reports of PhD candidates' form the basis for an annual report on the quality of the PhD program. The PhD Committee is responsible for the quality of the PhD program and draft the report. The annual report is formally adopted by the Dean. The final report is sent to the NMBU-VET Board and the Prorektor for Research. In addition to the annual report, NMBU's quality system calls for an external evaluation of each PhD program approximately every 10 years. NMBU-VET's PhD program is to be evaluated in 2023-2024.

NMBU-VET does not have a formal internal quality system for research activities. Academic staff at NMBU-VET have the right under the Universities and University College Act to pursue research within the framework of their institution's mission. The quality of PhD and Post Doctoral projects funded by NMBU-VET are assessed by VET-FU prior to being funded. The quality of research is assured through the process of approval of external applications and application budgets by Heads of Departments and the process of reporting to external funding agencies. NMBU-VET supports a policy of publication of its research in national and international peer-reviewed journals and promotes the use of open-access journals.

Services – diagnostics

NMBU-VET provides diagnostics services for ten quality assured methods that follow the ISO/IEC 17025 standard. The analytical services are performed by seven laboratories in PARAFAG and are within specified microbiological and chemical-toxicological areas. The quality system for ISO standard diagnostics is a web-based system (Landax) containing a QA Manual and a system for reporting deviations. The QA Manual includes a description of the QA system, laboratory protocols for specific analyses and procedures for the correct use, operation and maintenance of instruments and equipment. The diagnostic laboratories that offer services to external clients have web sites where contact information is available, and clients can give feedback on provided services online.

d) informs regularly staff, students and stakeholders and involves them in the QA processes;

The current QA protocol at NMBU-VET is published on the intranet in Norwegian. This QA protocol describes the responsibilities of the VEE and contains templates for reporting for all responsible parties according to the processes previously described.

The students at NMBU are responsible for participating in the QA work, providing input in relevant forums, taking part in evaluations and being active participants in the learning process. At faculty level, students are represented on NMBU-VET Board and VET-SU. Through their representation, veterinary students can contribute to and voice their opinion in processes at all levels. The reports from the students' online evaluation of courses are available to students and staff on Canvas. Canvas is the eLearning platform at NMBU-VET that is described in Area 6 Learning Resources. The annual Study QA reports, the Departments QA reports as well as meeting documents and minutes from VET-SU meetings are also available on Canvas. The Study QA report from NMBU-VET, the University's QA report, LMU report to the NMBU-VET Board and national questionnaires that are processed by VET-SU are available (in the case files) at NMBU.no. Nationally, data from the Study Barometer (NOKUT) and student results (DBH) are publicly available online. NMBU's QA system can be found [here](#). (Appendix 04).

e) closes the loop of any QA Plan-Do-Check-Adjust (PDCA) cycles;

The cyclical nature of QA work (Figure Standard 1.4) permeates NMBU-VET and ensures broad and good involvement of staff and students at all levels, which promotes a culture of quality. A description of all courses planned for the next academic year is published in the Curriculum plan and Semester schedule each June. The academic year commences in autumn (August) and finishes before summer (June). All courses are evaluated by analyzing student results in examinations, informal student feedback during a course and the anonymous student feedback survey at the end of a course. Meetings with the student reference group is a further evaluation of the course. Course coordinators submit a report in August assessing the course and proposing improvements to the respective Head of Department. The Heads of Department check and send a report for all their courses to VET-SU and NMBU-VET management and the combined Study QA report is approved by NMBU Board and sent to NMBU in October. A midway evaluation of the Study QA report is performed in January. NMBU sends a new request for assessment of courses at NMBU-VET in June each year.

f) is compliant with ESG Standards.

NOKUT as a member of ENQA is committed to the ESG standards. NOKUT evaluated the educational provisions at NMBU-VET in 2019 and approval granted in 2020.

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

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

Description of how the VEE informs stakeholders and the public on:

a) its objectives, and b) its education, research and teaching activities,

At its website, NMBU-VET provides information on its objectives and activities for stakeholders and the public. NMBU-VET also arranges meetings with various parts of society when necessary. NMBU-VET invites relevant stakeholders to the annual PhD day where PhD students present their ongoing research. Contact with industry stakeholders is also important to ensure cooperation and co-financing of research projects that is a requirement in some relevant research programs. There is also cooperation with external stakeholders on continuing education courses. NMBU has a formal advisory board for contact with the business world.

c) employment destinations of past students, and d) profile of the current student population

The students at NMBU-VET express a broad field of interest, as mapped in student surveys performed by the Norwegian Veterinary Association. To make potential applicants aware of all career options for a veterinary degree, NMBU-VET uses campaigns in social media (for example films on YouTube [here](#)) and also provides veterinarians with information material describing the veterinary program for their local use. Additionally, the departments at NMBU-VET have extensive contact with their stakeholders through the activities in the hospitals, clinics, laboratories, continuing education (SEVU) courses, research and through meetings and collaboration in various fora such as breeding organisations, the industry and administrative bodies.

Examples of involvement from the most central actors:

- Norwegian Food Safety Authority (NFSA) is an important employer for graduates and contributes to teaching meat inspection in the Food Safety course and host students for participation in inspection work. NFSA organizes yearly contact meetings at director level with NMBU where the Dean of NMBU-VET participates. Heads of departments at NMBU-VET and relevant section leaders at NFSA have meetings each year.
- Norwegian Veterinary Institute collaborates on research and PhD education and their staff contributes to the veterinary education as external lecturers.
- Norwegian Medicine Agency contributes to veterinary education with lectures.
- Norwegian Scientific Committee for Food and Environment. NMBU-VET staff are members of the main committee and the subcommittees Animal health and welfare, Biological Hazards and Plant protection products. The committee contributes to advancing knowledge and identifies new societal issues, which are quickly implemented in teaching.
- Fish health industry contributes to up-to-date and relevant teaching to the aquaculture field-course for all students.
- Industry organisations such as Animalia (Norwegian Meat and Poultry Research Center) and TINE BA (dairy company) as well as breeding organizations such as Geno and Norsvin

have contact with Departments including PRODMED and PARAFAG in relation to teaching, research and other developments.

Description of how to access to the ESEVT VEE's status and to the last ESEVT Self Evaluation Report and Visitation Report on the VEE's website

The ESEVT status of NMBU-VET and the last ESEVT Self Evaluation Report and Visitation Report are available on the University [website](#).

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

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

Description of how (procedures) and by who (description of the committee structure) the strategic plan, the organisation, the activities and the QA policy are decided, communicated to staff, students and stakeholders, implemented, assessed and revised

NMBU's strategies and QA policy are published on NMBU.no. Within the bounds of the NMBU system, NMBU-VET decides how to organise its QA and development work. As described in Standard 1.4, NMBU-VET monitors and periodically reviews its activities and has broad involvement and specified responsibilities in this work. The Study QA report is made known to all staff and students through newsletters and is published on Canvas and the intranet. In addition, students receive a review of the QA system at the start of their studies where they receive information about their role, representation in councils and committees, the student evaluation system and how their feedback is followed up in the organisation. At the start of each semester, the students receive a review of the upcoming semester plan and what improvements have been made at the overall level based on information obtained through the QA system of Academic and Research Administration. Course coordinators are responsible for informing students about changes in individual courses.

NMBU-VET is a small organization with short lines of communication. It is possible for students to contact teachers, Academic and Research Administration and NMBU-VET management directly and informal meetings are also held between students and staff to resolve issues at the lowest possible level. In the ongoing work with the newly introduced Curriculum 2021, there is comprehensive staff and student participation. External representatives (stakeholders) from various areas are invited to seminars and meetings where issues such as required competence for new graduates, need for veterinarians in different areas and sustainability in veterinary medicine are discussed. External stakeholders have also contributed input on the Strategic Action Plan for NMBU-VET (2023-2026). NMBU-VET actively participates in seminars on veterinary education in the Nordic and Baltic countries through the EAEVE network. In these arenas, NMBU-VET receive important feedback and input on how similar challenges facing the veterinary education institutions are handled by others in the EAEVE network.

In 2022, Government Department (Education and Research) established an [interdisciplinary working group](#) on veterinary shortages, in which the dean participated.

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.

Date of the last ESEVT Visitation and description on how the deficiencies have been corrected and how it has been used to enhance quality

The previous ESEVT visit was 24th – 28th March 2014. NMBU-VET submitted its interim report in 2020. No major deficiencies were identified in the last evaluation.

ESEVT Evaluation Report included proposals for improvements. NMBU-VET prepared an action plan with measures, responsibilities, and timetable for implementation, which was adopted by the Faculty Board in 2017 as part of its quality work. In 2018, status of measures was considered by the NMBU-VET Board in connection with the annual Study QA report. By then most measures had then been initiated, implemented, or assessed as not relevant in the period 2014-2018. Remaining measures were reviewed, processed by the NMBU-VET management, and signed off in the winter of 2023 (see Appendix 07).

Comments on Area 1

In the period since the last EAEVE visitation, the objective of NMBU-VET has been to train veterinarians to meet all ESEVT standards. This goal has been consistently maintained in a period of significant changes for the VEE. The relocation project was central in NMBU's strategy of a "Unified University" and involved a physical relocation to new purpose-built teaching and clinical facilities. The relocation also involved organisational changes. With the establishment of a veterinary faculty in 2017, the ability to deliver a cohesive study programme for veterinary training was strengthened. The four departments at NMBU-VET underwent a re-organisation to optimize the use of facilities in the new buildings and the delivery of the new curriculum that was introduced in 2021.

The relocation process proved challenging for NMBU-VET and these challenges were intensified coinciding as they did with the Covid-19 crisis and a period of economic uncertainty in Norway. In NMBU-VET's strategy document for 2019-2022, it is stated that "Establishing the future Veterinary College at Ås requires great resources from our entire organization. Succeeding in this is the biggest and most important goal in the period". Still, we were probably not aware of how much effort and attention the move would require. Managerial attention had to be largely concentrated on the most important things: the move and re-establishment in new premises and to maintain good teaching and study environments during this period.

The move to Campus Ås has promoted the creation of a good, common culture within NMBU-VET. The VEE is now gathered in one large building, and it is much easier to have a dialogue across departments. The extensive collaboration that has been undertaken in connection with the introduction of a new veterinary curriculum (from 2021) has also had positive effects on the establishment of a common culture. The relocation of NMBU-VET to Campus Ås has also been a

co-location process with the rest of NMBU. It is important for NMBU-VET to become part of the new university.

NMBU-VET has a well-established culture of QA and exists within a university with a strong commitment to QA. The strength of NMBU-VET's policies and procedures for QA was recognized in the SWOT analysis and supported by the recent inspection and subsequent approval granted by the national agency NOKUT. The SWOT analysis also identified weaknesses and threats, many related to availability of necessary resources to meet the VEE's ambitions for teaching and research.

Suggestions for improvement in Area 1

The good basis for communication and cooperation established by the relocation and reorganization of NMBU-VET should be utilized further to mobilize and actualize resources to maintain high quality in education and research and to give priority to arenas for formal and informal meetings on campus. The continuous focus on a culture of QA needs to be maintained, particularly for the introduction of new employees.

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).

Description of the global financial process of the VEE

NMBU is a public university and receives funding from the Ministry of Education and Research for the operation of the university. Funds are allocated by the ministry based on a basis component and a results-based component, dependent on students' participation and performance in different study programs. Funds from the basis component are allocated according to the type of educational program and a fixed number of students. Part of the funds allocated to the university for the result-based component for students enrolled in Veterinary Medicine and Veterinary nurse education are distributed to NMBU-VET to cover costs incurred by the VEE. The remainder covers shared costs at university level. The funds are awarded partly on the basis of achieved results in study production, publications, the number of PhD degrees completed, and earnings in research. The main source of revenue for NMBU-VET is the allocation from public authorities, with additional income from the animal teaching hospitals, as well as income from research activity (see Table 2.1.2). The revenue from the animal teaching hospitals is used to fund the teaching activities in the hospital.

% of margin paid as overhead to the official authority overseeing the VEE on revenues from services and research grants

The university retains part of the funds allocated by the ministry for Veterinary Medicine and Veterinary nurse educations. Research projects and services not directly connected to teaching pay overhead on direct labor costs, on average 50%. This overhead is retained by NMBU-VET, which in turn pays for IT equipment and support. NMBU-VET has essential activity in research funded by external revenues. There is separate accounting for activities related to research and to education of researchers. This is included in Tables 2.1.1 and 2.1.2.

Annual tuition fee for national and international students

University education in Norway is free of charge for all students and there is no tuition. All students at NMBU-VET are standard students funded by public authorities, no full-fee students are admitted as illustrated in Table 7.2.1. The students pay a small annual fee of approximately 100 Euro to the student association at NMBU (SiÅs). SiÅs is responsible for student welfare at the university. NMBU-VET does not receive any part of this fee.

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

| <i>Area of expenditure</i> | <i>2021/2022</i> | <i>2020/2021</i> | <i>2019/2020</i> | <i>Mean</i> |
|----------------------------|------------------|------------------|------------------|-------------|
| <i>Personnel</i> | 31 887 828 | 31 121 944 | 31 771 476 | 31 593 749 |
| <i>Operating costs</i> | 12 395 816 | 12 357 526 | 12 640 117 | 12 464 486 |
| <i>Maintenance costs</i> | 459 650 | 387 199 | 420 800 | 422 550 |
| <i>Equipment</i> | 2 560 058 | 1 088 920 | 946 808 | 1 531 929 |
| <i>Total expenditure</i> | 47 303 351 | 44 955 589 | 45 779 202 | 46 012 714 |

The table shows expenditures for each of the three last academic years prior to the Visitation. Since the academic years are different from the financial years, the figures are expenditures for the period August 2019 to July 2020.

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

| <i>Revenues source</i> | <i>2021/2022</i> | <i>2020/2021</i> | <i>2019/2020</i> | <i>Mean</i> |
|--|------------------|------------------|------------------|-------------|
| <i>Public authorities</i> | 26 905 919 | 25 771 053 | 25 592 324 | 26 089 766 |
| <i>Tuition fee (standard students)</i> | 0 | 0 | 0 | 0 |
| <i>Tuition fee (full fee students)</i> | 0 | 0 | 0 | 0 |
| <i>Clinical services</i> | 5 122 206 | 4 681 319 | 3 965 260 | 4 589 595 |
| <i>Diagnostic services</i> | 1 068 696 | 1 154 105 | 1 540 174 | 1 254 325 |
| <i>Other services</i> | 965 614 | 2 085 696 | 1 809 239 | 1 620 183 |
| <i>Research grants*</i> | 8 817 373 | 9 935 303 | 9 239 873 | 9 330 850 |
| <i>Continuing Education</i> | 77 892 | 61 097 | 75 717 | 71 569 |
| <i>Donations</i> | 0 | 0 | 0 | 0 |
| <i>Other sources</i> | 0 | 0 | 0 | 0 |
| <i>Total revenues</i> | 42 957 700 | 43 688 574 | 42 222 586 | 42 956 287 |

*Research activity has separate accounting revenues shown in the table below. The research grants in this table are income from overheads from research activity.

Revenues in externally financed project during the last 3 academic years (in Euros)

| <i>Revenues in external financed projects</i> | <i>2021/2022</i> | <i>2020/2021</i> | <i>2019/2020</i> | <i>Mean</i> |
|---|------------------|------------------|------------------|-------------|
| <i>Collaborative research</i> | 7 170 145 | 7 167 757 | 8 462 571 | 7 600 158 |
| <i>Research services</i> | 1 925 544 | 1 490 931 | 1 325 438 | 1 580 638 |
| <i>Total revenues</i> | 9 095 689 | 8 658 687 | 9 788 010 | 9 180 795 |

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

| <i>Academic year</i> | <i>Total expenditures</i> | <i>Total revenues</i> | <i>Balance*</i> |
|----------------------|---------------------------|-----------------------|-----------------|
| <i>2019/2020</i> | 45 779 202 | 42 222 586 | -3 556 615 |
| <i>2020/2021</i> | 44 955 589 | 43 688 574 | -1 267 015 |
| <i>2021/2022</i> | 47 303 351 | 42 957 700 | -4 345 652 |

* Total revenues minus total expenditures

Estimation of the utilities (e.g. water, electricity, gas, fuel) and other expenditures directly paid by the official authority and not included in the expenditure tables

NMBU retains part of the funding from the Ministry of Education and Research for operation of the university. This retained funding covers utility expenses and is not included in the expenditure tables of NMBU-VET.

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

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

Description of the modus operandi for the financial management of the clinical and field services

The Production Animal Clinic is operated as a referral teaching hospital. Referring veterinarians submit relevant cases for diagnostic work-up and clinical examination by the students. The service is free of charge for animal owners. Staff salaries are covered by NMBU-VET. NMBU-VET also covers the cost of equipment.

The Farm Service Unit of Herd health services is part of a 24-7 on-call emergency service covered by the municipality. NMBU-VET is reimbursed for operating this service, which covers transportation and running costs for the service. In addition, farmers pay for on-call visits. Administrative staff at PRODMED invoice farmers monthly. Farm visits are recorded in our practice management system, which is also used for invoicing.

The Small Animal Hospital and the Equine Hospital are operated as commercial teaching hospitals with specialist staff and paying customers. The students participate in diagnostics, treatment and management of patients and customers are charged full costs for services.

Degree of autonomy of the VEE on the financial process

NMBU-VET has its own board that is responsible for activities and finances at the VEE. NMBU-VET is responsible for its own finances and can make academic and strategic plans on an independent basis. Deficits and surpluses must be covered by the VEE and must be reflected in the operation of the VEE.

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

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

In 2021, NMBU-VET moved into new facilities following the relocation project with NMBU. Large investments were made by the Norwegian government both in physical facilities and in equipment for clinical activities, diagnostics, and teaching rooms. This investment is not visible in NMBU-VET official accounts, nor does it appear in Tables 2.1.1, 2.1.2 and 2.1.3. Investments in physical facilities were approx. 607 million Euro. Investments in equipment were approx. 82 million Euro. NMBU will not repay these funds to the state, but depreciation of the sums is made visible when costs are calculated for research projects. NMBU and NMBU-VET must set aside funds to be able to replace equipment.

Based on this, low investment costs are planned in future accounts. See table below for budgeted investments over the next five years. Most of the investments relate to upgrading the buildings in PRODMED at Campus Sandnes, as well as investment in vehicles used for student transport in teaching activities. Some of the investments also apply to software system updates in the hospitals and diagnostic services. The investments are mainly financed through funds from the public authorities.

Investments for developing, improving and/or refurbishing facilities and equipment in the next five years. (in Euro)

| Year | 2023 | 2024 | 2025 | 2026 | 2027 |
|-------------|-------------|-------------|-------------|-------------|-------------|
| Investment | 498 039 | 534 804 | 199 020 | 211 275 | 199 020 |

Prospected expenditures and revenues for the next 3 academic years

The prospected expenditures for the next 3 academic years are expected to exceed prospected revenues. The operational costs of running the new buildings at Campus Ås are expected to remain high for this period. There will be a moderate increase in revenues as the full financial benefits of the 20 additional students funded from 2021 onwards come to effect. It is expected that the deficit will be reduced in the next 3 academic years as the programme for reducing costs mandated by the NMBU-VET board is implemented in 2024.

| <i>Academic Year</i> | <i>2022/2023</i> | <i>2023/2024</i> | <i>2024/2025</i> |
|----------------------|------------------|------------------|------------------|
| Revenues | 44 936 386 | 45 374 152 | 45 896 634 |
| Expenditures | 48 525 045 | 47 789 184 | 46 986 204 |
| Annual balance | - 3 588 659 | - 2 415 032 | - 1 089 571 |

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

The budgets for costs, investments, and revenues are worked out by NMBU-VET management and the leader groups of the Departments. Managers at multiple levels are informed and involved in the budget work before the budget plan is proposed by the NMBU-VET management team and approved by the NMBU-VET Board. Throughout the year, financial reports are prepared and presented to the NMBU-VET board every four months. The reports are made available online. Additionally, the contents of the reports are presented and discussed in meetings with managers and at general meetings at the Departments.

Comments on Area 2

In the period since the last EAEVE evaluation, NMBU-VET has undergone organisational and infrastructural change that has affected its financial situation. The incorporation into a new university NMBU involved a relocation to new buildings on Campus Ås 40 km south-east from its original location in the centre of Oslo. Prior to 2019, NMBU-VET had a positive accumulated balance, which enabled planning for more activity and higher expenditure for a period of relocation. Delays in the building and commissioning of these new facilities postponed the move to Campus Ås for almost 2 years. The three years from 2019 have been a period of negative financial balance and the positive accumulated balance was used up by 2020. Additional expenses resulting from the delay were not compensated for by the university and the relocation process itself was not fully funded with the consequence that when NMBU-VET finally completed its relocation to the new buildings on Campus Ås it had acquired a 2.5 million Euro debt. The costs of commissioning and operation of the new buildings and hospitals have proved greater than budgeted and NMBU-VET has operated with a deficit for the last 3 academic years and currently has an accumulated debt of 7.2 million Euro. The board and management at NMBU have expressed on several occasions that they want to help NMBU-VET by offsetting deficits directly related to the move, but no decision has yet been made. This period of unfunded expenses has coincided with a wider period of uncertainty in the Norwegian economy. The dramatic increase in energy costs has been a challenge for NMBU and has limited the ability of the university to compensate NMBU-VET for unfunded relocation expenses. For the time being, NMBU-VET's deficit may remain uncovered as NMBU as a whole is in balance.

The NMBU-VET board has instructed the Dean to balance the VEE's budget in 5 years and has decided that the NMBU-VET budget for the next 12 months will be reduced by 1 million Euro. A review of NMBU-VET's total operations is now being carried out, and permanent cuts will be implemented from 2024. Efforts are being made to solve this by realizing savings that impact on teaching to the least extent possible. The NMBU-VET Board will decide the areas for reducing costs at its meeting in October 2023.

NMBU-VET was awarded 20 new student places in the veterinary program in 2021. The increase in student numbers provides increased income for NMBU-VET but the full economic effect of this allocation will not be realised until 2028. Norway is experiencing an increased demand for veterinarians and the recent governmental report on veterinary shortages states clearly the need for Norway to train more veterinarians. A further increase in number of veterinary students at NMBU-VET from the current 90 to 110 or 120 would be a source of higher future income. Although involving increased expenses such as employing more academic staff, other expenses related to equipment and space will not increase, so the overall economy will improve and contribute to financial stability. A decision on the funding of additional veterinary students has not been made by the government.

Suggestions for improvement in Area 2

NMBU-VET must have an activity that reflects available resources. Efforts must be made to obtain additional external funding from research projects, hospital and clinic operations, and post- and further education. NMBU-VET board's directive for future financial activity will be an important instrument for the continued delivery of high-quality education in veterinary medicine.

The contribution to financial stability of increasing the number of veterinary students at NMBU-VET should be considered.

Area 3. Curriculum

If a VEE offers more than one study programme to become veterinarian, e.g. in different languages or in collaboration with other VEEs, all study programmes and respective curricula must be described separately in this Chapter 3. Similarly, if a VEE implements a tracking (elective) system in its study programme, it should provide a clear explanation of the tracking system in this Chapter.

NMBU-VET offers one full study program in veterinary medicine (Cand.med.vet.). The veterinary curriculum is in the process of revision and a new curriculum has been adopted. Teaching commenced in this curriculum from 2021. Of the 11 semesters taught in the last academic year of this report (autumn 21/spring 22), semesters 1 and 2 were the first 2 semesters of the 2021 curriculum. The other 9 semesters were from the 2002 curriculum. The first graduates of the 2021 curriculum are expected in 2026.

The study program of curriculum 2002 offers a tracking (elective) system in the final year consisting of 5 tracks: Production animal medicine and food safety, Small animal medicine, Equine medicine, Aquatic medicine; and Project specific (research). In the study program of curriculum 2021, tracking is no longer offered.

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

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

Educational aims of the Establishment

The educational aims of NMBU-VET are to educate veterinarians who:

- Have good basic knowledge and skills in veterinary medicine enabling them to work for improved animal health, public health and animal welfare.
- Understand both the meaning of the terms One Health and "animal intrinsic value" and act ethically in line with these principles.
- Have a broad understanding of natural science issues and are able to identify, formulate and solve complex issues within the field of veterinary medicine and research.
- Have the ability to communicate in an understandable, effective and respectful way with clients, the general public, colleagues and responsible authorities.
- Know their professional limitations and take care of the professional obligation linked to further education, training and professional development throughout their life.

These broad educational aims are the same for Curriculum 2002 and Curriculum 2021. Curriculum 2002 was revised in 2006 and 2011 and was evaluated by EAEVE in 2014. The learning outcomes for each course in Curriculum 2002 have been aligned so that the study program delivers Day One Competences as described by ESEVT and the contribution of each course to Day One Competences is provided in Appendix 02. Appendix 02 also includes Day One Competences for the planned courses in Curriculum 2021. This alignment will be revised in accordance with changes in the ESEVT SOP and List of subjects and Day One Competences.

VET-SU has ongoing responsibility for the entirety, coordination and improvements made to the curriculum in close dialogue with NMBU-VET management team. The Heads of department are responsible for the individual courses and appoint the course coordinators. The Heads of departments are also responsible for resource allocation and personnel management in their courses (see Standard 1.4). At Department level, courses are delivered by the Sections or Units within the Department and courses are financed on the basis of individual sections/units budgets that are revised annually.

Basic subjects. The entrance requirements for veterinary medicine at NMBU-VET require the students to have graduated from Norwegian upper secondary school with extended courses in mathematics and chemistry. These requirements are considered sufficient for the Basic Subjects of physics, chemistry, and mathematics. The other basic subjects are integrated into the basic science courses in the first three years of the veterinary medicine programme at NMBU-VET.

Basic Sciences. The basic sciences are taught in courses in the first three years of both Curriculum 2002 and Curriculum 2021. In Curriculum 2002, the blocks (equivalent to courses) taught were Animal Biology, Cell Biology, Population medicine, Integrated Anatomy and Physiology, Animal nutrition, Principles of immunity and disease, Veterinary microbiology and parasitology, Veterinary pharmacology and toxicology. In the first year of Curriculum 2021, the courses [Animal Husbandry](#), [Structure and Function of Animals](#), [Professional Studies](#), [Animal Welfare](#), and Organ System 1 were taught. The details of the specific courses and their contribution to subject areas are listed in the Appendix 02 and Appendix 08.

Clinical Sciences. In Year 1 and Year 2 in the 2021 Curriculum, the students are introduced to clinical sciences through introductory lectures relating to anatomy and diagnostic imaging and to physiology and anaesthesiology. Clinical cases are used as a framework for teaching aspects of anatomy and physiology. The core teaching in clinical sciences relating to companion animals and production animals is provided from Year 3 (Curriculum 2002). Clinical teaching commences with basic propaedeutics in semester 6 as a part of the course Introduction to Diagnostic work and Veterinary Public Health. Introductory clinical training starts in semester 7 with rotations through the Production Animal Clinic and the Equine Hospital. The core clinical rotations are complemented by lectures and seminars in semester 7, 8 and 9. Training in [Pathology](#) including hands-on necropsy is provided in the clinical rotations in semester 7 and 8. In Curriculum 2002, core clinical training at NMBU-VET consists of 3 semesters of compulsory core training and 2 semesters of elective track training. The compulsory core clinical training occurs in semesters 7, 8 and 9.

Tracking. The elective track training occurs in semesters 10 and 11 or 11 and 12 in the 2002 Curriculum. The students can choose between 5 tracks; [Production Animal Medicine and Food safety](#), [Small Animal Medicine](#), [Equine Medicine](#), [Aquatic Medicine](#) and [Project Specific](#). The tracking year is a combination of courses and clinical rotations related to the specific track and courses compulsory for all tracks (Infection Prevention and Control, State Veterinary Medicine, and Wildlife and Exotic Pet Medicine). The students also write a thesis related to the chosen track corresponding to 15, 20 (Aquatic Medicine) or 40 (Project Specific track) ECTS.

Food Safety and Quality, Veterinary Public Health and the One Health Concept. Food safety and quality (FSQ), Veterinary public health (VPH) and the One Health concept are integrated into courses in the basic sciences and included in the core clinical rotations and elective tracks. Students are introduced to VPH and FSQ aspects of the veterinary profession in Year 1 in the [Animal Husbandry course](#) (2021 Curriculum). In Year 3 (2002 Curriculum) the Food Safety course focuses on food hygiene and food microbiology, zoonoses, food technology and toxicology. VPH is included in the courses Introduction to Diagnostic Work and Veterinary Public Health (control of infectious diseases and zoonoses) in semester 6, [Veterinary Public Health 2](#) (meat inspection) in Semester 9 and [State Veterinary Medicine](#) in the final year.

Professional knowledge. Professional ethics and communication are introduced to veterinary students in Year 1 in the course [Professional studies](#), which initiates a thread that is to run through Curriculum 2021. This thread has three main parts: 1) Veterinary Public Health and Veterinary Regulations, 2) Epidemiology, statistics, and research methodology, including a thesis and 3) Clinical communication. Clinical communication and other generic competences are an integral part of the clinical rotations. Practice management will be included in the final year. The thread Professional studies is partly a restructuring of subjects in the 2002 Curriculum, but with a strengthening of generic competences. An optional course including clinical communication, mental health and clinic management is offered in Curriculum 2002 in the final year.

Legal constraints imposed on the curriculum by national/regional legislations and the degree of autonomy that the Establishment has to change the curriculum

The study programme in veterinary medicine at NMBU-VET is governed by the [Act relating to universities and university colleges](#) (2005) and the [Regulation on studies at NMBU](#). The responsibilities of a veterinarian are regulated by the [Act relating to veterinarians and other animal health personnel \(2001-96-15 nr 75\)](#). The veterinary programme is a highly structured professional education and undergraduate training comprises 5 ½ - 6 years of study and leads to the degree *Candidata/candidatus medicinae veterinariae (Cand.med.vet.)*. All veterinary graduates from NMBU-VET receive a general authorization as a Veterinarian from NFSA. The authorization allows all fields of veterinary work, regardless of tracking. The academic year is divided into two semesters and teaching is conducted in 11 semesters. The entire veterinary curriculum is equivalent to 330 ECTS. The veterinary education at NMBU-VET is comparable to a Master's degree (five years, 300 ECTS). NMBU-VET also awards Philosophiae doctor (PhD, 3 year) and Doctor philosophiae (Dr. Philos.) degrees.

NMBU-VET has full autonomy in curriculum development within its financial framework. The Act relating universities and university colleges requires NMBU-VET to have a satisfactory internal system for quality assurance including student evaluations and to meet the requirements of the [Norwegian Agency for Quality Assurance in Education](#) (NOKUT). In NMBU's quality system, the audit/evaluation of veterinary studies must also take place in line with EAEVE's requirements.

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

The veterinary curriculum and its courses are regularly evaluated and improved as problems and challenges, financial requirements and new strategic initiatives arise. Student evaluations, course evaluation reports and the Study QA reports at both department and faculty level provide important input to the cycle of improvement. Once to twice a year, if necessary, VET-SU makes small revisions to the existing curriculum according to the study QA work. VET-SU adopts the course descriptions and semester plans for the coming year in May. In September, VET-SU processes the

Study QA report, based on the Departments' reports and student evaluations (see Standard 1.4 and 1.6). Through this process, major measures to be worked on in the current academic year can be introduced. It is possible to adjust the semester plan in November, if necessary. In addition to these formal evaluation procedures, students also have direct dialogue with teaching staff, course coordinators, Academic and Research Administration and NMBU-VET management.

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

| Academic years | A | B | C | D | E | F | G | H |
|----------------|---------------|--------------|--------------------|--------------|--------------|---------------|------------|---------------|
| Year 1 | 303.5 | 404.5 | 82.5 | 76.0 | 281.5 | 0 | 0 | 1148.0 |
| Year 2 | 270.0 | 92.0 | 94.0 | 142.0 | 111.0 | 0 | 1.0 | 710.0 |
| Year 3 | 253.0 | 99.0 | 94.0 | 80.0 | 70.0 | 35.0 | 3.0 | 634.0 |
| Year 4 | 211.0 | 215.5 | 27.0 | 2.0 | 24.0 | 499.0 | 0 | 978.5 |
| Year 5 | 18.0 | 34.5 | 446.0 [#] | 5.0 | 34.0 | 372.0 | 0 | 909.5 |
| Year 6** | 208.0 | 18.0 | 178.0 | 42.0 | 0 | 150.0 | 1.0 | 597.0 |
| SUM | 1263.5 | 863.5 | 921.5 | 347.0 | 520.5 | 1056.0 | 5.0 | 4977.0 |

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 (information meetings); H: total

* Curriculum hours delivered in the last academic year before ESEVT visitation (2021/2022). Note that Year 1 is Curriculum 2021 and Years 2 – 6 are Curriculum 2002.

** Elective track courses for Aquatic Animal Medicine are included in Year 6 (470.5 hours, see Table 3.1.4).

[#] Includes Graduate thesis of 15 ECTS. The hours for this work are placed in Year 5. The Graduate theses for Aquatic Animal Medicine (20 ECTS) and for Project track (40 ECTS) are larger. The additional 5 ECTS for Aquatic Animal Medicine are placed in Year 6. The additional ECTS for both these Tracks (Aquatic Animal Medicine 5 ECTS; Project 25 ECTS) are included in Table 3.1.4.

Table 3.1.2. Curriculum hours* taken by each student

| Subjects | A | B | C** | D | E | F | G | H |
|---|------|-------|------|------|-------|---|---|-------|
| Basic Subjects | | | | | | | | |
| Medical physics | 3.0 | 3.0 | | | | | | 6.0 |
| Chemistry (inorganic and organic sections) | 2.0 | 1.0 | | | | | | 3.0 |
| Animal biology, zoology and cell biology | 21.0 | 19.0 | 8.0 | | | | | 48.0 |
| Feed plant biology and toxic plants | 3.0 | 3.0 | | | | | | 6.0 |
| Biomedical statistics*** | 13.0 | 15.5 | 1.0 | | | | | 29.5 |
| Specific Veterinary Subjects | | | | | | | | |
| Basic Sciences | | | | | | | | |
| Anatomy, histology and embryology | 79.0 | 102.0 | 31.0 | 70.0 | 171.0 | 0 | 0 | 453.0 |
| Physiology | 78.0 | 105.0 | 13.0 | 10.0 | 0 | 0 | 0 | 206.0 |
| Biochemistry | 29.0 | 74.0 | 3.0 | 14.0 | 0 | 0 | 0 | 120.0 |
| General and molecular genetics | 45.0 | 29.0 | 7.0 | 8.0 | 0 | 0 | 0 | 89.0 |

| | | | | | | | | |
|--|-------|-------|---------------------|-------|-------|-------|-----|-------|
| Pharmacology, pharmacy and pharmacotherapy | 54.0 | 5.0 | 5.0 | 16.0 | 0 | 0 | 0 | 80.0 |
| Pathology | 84.0 | 18.0 | 22.0 | 30.0 | 0 | 15.0 | 0 | 169.0 |
| Toxicology | 57.0 | 15.0 | 4.0 | 3.0 | 0 | 0 | 0 | 79.0 |
| Parasitology | 32.0 | 19.0 | 11.0 | 16.0 | 0 | 0 | 0 | 78.0 |
| Microbiology | 99.0 | 30.0 | 42.0 | 106.0 | 0 | 0 | 0 | 277.0 |
| Immunology | 48.0 | 31.0 | 8.0 | 8.0 | 0 | 0 | 0 | 95.0 |
| Epidemiology | 37.0 | 16.5 | 15.0 | 0 | 0 | 6.0 | 1.0 | 75.5 |
| Information literacy and data management | 22.0 | 20.5 | 380.5 [#] | 3.0 | 3.0 | 15.0 | 0 | 444.0 |
| Professional ethics and communication | 26.0 | 12.5 | 3.0 | 0 | 0 | 37.0 | 0 | 78.5 |
| Animal health economics and practice*** | 5.0 | 0 | 0 | 0 | 0 | 143.5 | 0 | 148.5 |
| Animal ethology | 21.0 | 4.0 | 0 | 0 | 0 | 13.0 | 0 | 38.0 |
| Animal welfare | 72.0 | 51.0 | 10.0 | 0 | 0 | 78.0 | 0 | 211.0 |
| Animal nutrition | 124.0 | 16.0 | 72.0 | 0 | 29.5 | 2.0 | 1.0 | 244.5 |
| Clinical Sciences | | | | | | | | |
| Obstetrics, reproduction and reproductive disorders | 15.0 | 4.0 | 4.0 | 5.0 | 53.0 | 51.5 | 1.0 | 133.5 |
| Diagnostic pathology | 11.0 | 126.0 | 7.0 | 17.0 | 0 | 58.0 | 0 | 219.0 |
| Medicine | 75.0 | 37.0 | 1.0 | 0 | 0 | 65.0 | 0 | 178.0 |
| Surgery | 25.0 | 15.5 | 7.0 | 0 | 3.0 | 29.0 | 0 | 79.5 |
| Anaesthesiology | 15.0 | 0 | 3.0 | 0 | 0 | 20.0 | 0 | 38.0 |
| Clinical practical training in common animal species | 1.0 | 4.0 | 10.0 | 0 | 0 | 236.0 | 2 | 251.0 |
| Preventive medicine | 33,5 | 23.0 | 37.0 | 0 | 0 | 15.0 | 0 | 108.5 |
| Diagnostic imaging | 20.0 | 4.0 | 1.0 | 0 | 0 | 25.5 | 0 | 50.5 |
| Therapy in common animal species | 13.0 | 15.5 | 0 | 0 | 0 | 84.0 | 0 | 112.5 |
| Propaedeutics of common animal species | 4.0 | 0 | 3.0 | 0 | 28.0 | 0 | 0 | 35.0 |
| Animal Production | | | | | | | | |
| Animal production, including breeding | 12.5 | 0 | 1.0 | 0 | 192.0 | 112.5 | 0 | 318.0 |
| Herd health management | 20.0 | 8.0 | 128.0 ^{##} | 0 | 0 | 26.0 | 0 | 182.0 |

| Food Safety and Quality, Veterinary Public Health and One Health Concept | | | | | | | | |
|---|---------------|--------------|--------------|--------------|--------------|---------------|------------|---------------|
| Veterinary legislation including official controls | 11.0 | 20.5 | 81.0 | 0 | 29.5 | 9.5 | 0 | 151.5 |
| Control of food, feed and animal by-products | 12.5 | 0 | 2.0 | 0 | 11.5 | 0 | 0 | 26.0 |
| Zoonoses | 8.0 | 0 | 0 | 0 | 0 | 14.5 | 0 | 22.5 |
| Food hygiene and food microbiology | 25.0 | 16.0 | 1.0 | 41.0 | 0 | 0 | 2.0 | 85.0 |
| Food technology | 8.0 | 0 | 0 | 0 | 0 | 0 | 0 | 8.0 |
| TOTAL | 1263.5 | 863.5 | 921.5 | 347.0 | 520.5 | 1056.0 | 5.0 | 4977.0 |

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

* Curriculum hours delivered in the last academic year before ESEVT visitation (2021/2022).

**Supervised self-learning was categorized as sessions of individual students making use of defined teaching material that was assessed by formative testing during teaching and/or summative examination at the end of the course.

*** Biomedical statistics was taught in VET303 Population Medicine in Curriculum 200. This course was taught in semester 2 (last taught in spring 21). In Curriculum 2021, Population Medicine is to be taught in semester 6. Thus, in the mapped curriculum in academic year 2021/2022 (last academic year before evaluation), Population Medicine was not taught. The 69 curriculum hours of Population Medicine taught in spring 2021 have been included: 29.5 hours in Biomedical Statistics; 25.5 hours in Epidemiology; 13 hours in Information literacy and 1 hour in Professional ethics. These curriculum hours have been included in Year 1 in Table 3.1.1.

Includes Graduate thesis of 15 ECTS. The hours for this work are placed in Year 5. The Graduate theses for Aquatic Medicine (20 ECTS) and for Project track (40 ECTS) are larger. The additional ECTS for these Tracks (Aquatic Medicine 5 ECTS; Project 25 ECTS) are included in Table 3.1.4.

The additional ECTS for Aquatic Animal Medicine (5 ECTS). The hours for this work are placed in Year 6.

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

| Types | List of practical rotations (Disciplines/Species) | Duration (weeks) | Year of programme |
|--|---|------------------|-------------------|
| Intramural (VTH) – all students | Small Animal Medicine | 6 | 4/5 |
| | Equine Medicine | 3 | 4/5 |
| | Production Animal Medicine | 5 | 4/5 |
| | Pathology | 3.8 | 4 |
| Extramural (production animals) – all students | Herd health | 1 | 4 |
| | Farm Services Unit | 3 | 4/5 |
| FSQ & VPH – all students | Food Safety (Meat Inspection) | 1 | 5 |
| | Public Veterinary Medicine | 1 | 5 |
| | Disease control | 1 | 5 |

| | | | |
|---|--|----------|-----|
| Electives (tracking courses) - all students must choose one of the tracks | Production animal medicine and food safety | 12 | 5/6 |
| | Small animal medicine | 10 (+2)* | 5/6 |
| | Equine medicine | 10 | 5/6 |
| | Aquatic animal medicine | 3 (+1)* | 5/6 |
| | Project specific | 8.5 | 5/6 |
| | | | |

* Students may elect additional weeks

Table 3.1.4. Curriculum hours taken as electives for each student

| Electives | A | B | C | D | E | F | G | H |
|--|-----|-----|-----|-----|----|-------|---|-------|
| Production animal medicine and food safety | 76 | 74 | 90 | 9 | 69 | 336 | 0 | 654 |
| Small animal medicine | 84 | 2 | 42 | 38 | 21 | 588 | 0 | 775 |
| Equine medicine | 0 | 108 | 27 | 14 | 32 | 501 | 0 | 682 |
| Aquatic animal medicine | 163 | 0 | 154 | 33 | 0 | 112.5 | 8 | 470.5 |
| Project specific | 0 | 12 | 625 | 150 | 46 | 188 | 0 | 1021 |
| | | | | | | | | |

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: hours to be taken by each student per subject group

Note. Graduate thesis (15 ECTS, 375 h) is included in core curriculum (Table 3.1.2). The graduate thesis for Aquatic animal medicine is 20 ECTS and for Project specific is 40 ECTS. The additional ECTS for these tracks are included in Table 3.1.4.

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

| Subjects | A | B | C | D | E | F | G | H |
|--|----|----|----|---|---|---|---|----|
| All Tracks – Clinical communication, mental health and clinic management | 13 | 15 | 0 | 0 | 0 | 0 | 0 | 28 |
| Track Equine medicine – Optional feeding course | 16 | 5 | 3 | 0 | 5 | 0 | 0 | 29 |
| Track Equine/Prod medicine – Animal welfare | 6 | 6 | 15 | 0 | 0 | 0 | 0 | 27 |
| | | | | | | | | |

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

A preliminary clinical course in semester 6 as a part of Introduction to Diagnostic work and Veterinary Public Health is “Propedeutics” with smaller groups of students (4 groups of ca. 17 students) that rotate through introductions to clinics for the first 14 weeks of the semester. This module includes handling of animals, clinical examination, introduction to reproduction, hoof trimming, aseptics, antiseptics and basic suture skills. Furthermore, there are modules in diagnostics methods and anesthesia, obstetrics (one-week practical course using models) and small ruminant disease and herd health management.

Description (timing, group size per teacher, ...) of the core clinical rotations and emergency services (both intramural VTH and ambulatory clinics) and the direct involvement of undergraduate students in it (responsibilities, hands-on versus observation, report writing, ...)

Core clinical rotations. The core clinical training starts in semester 7. In the course [Special pathology, Introduction to Diagnostic Work and Animal Welfare](#), teaching is organ systems-based, and there are courses in preventative medicine and reproduction. In addition to lectures and seminars, the students are divided into groups of 10 -12 students and spend 3 hours daily in the first 6 weeks of the semester rotating through Pathology (9 mornings), Production Animal Clinic and Reproduction (6), Equine Hospital (2), Surgery (1) and Small Animal Hospital. During core clinical training in semesters 8 and 9, students rotate through Small Animal- and Equine-Hospitals, and Production Animal Clinic, Herd health services and pathology (only semester 8). The number of rotation weeks is shown in Table 3.1.3. In semester 8, all students participate in a compulsory field trip to salmon aquaculture facilities as part of the course [Aquatic Medicine](#). In semester 9, the rotation also includes Food and meat inspection (1 week in Sandnes), Public Veterinary Medicine (1 week including 3 days with regional NFSA) and Disease Control (1 week). In [Pathology](#), students are given a total of 19 days during the semesters 7 and 8 with diagnostic pathology doing hands-on necropsies supervised by a trained pathologist. In addition during semester 8, student groups are given training in necropsy procedures for poultry.

In the rotations through the Production Animal Clinics (VTH and Farm Service Unit) and the Small Animal and Equine Hospitals, the students are divided into smaller groups and all clinical rotations including emergency after hours rotations are compulsory. The clinical rotations included in the course [VET315](#) occur in semester 8 (5 weeks per group) and 9 (4 weeks per group). Each student receives in total 2 weeks of small animal surgery (1+1 week), 2 weeks of small animal internal medicine (1+1 week), 2 weeks of First Opinion practice (1+1 week) and 3 weeks of equine medicine and surgery (2+1 week). Teaching in Diagnostic Imaging is included in the rotations. The compulsory clinical rotation in [VET316](#) involves 5 weeks in semester 8 and 4 weeks in semester 9. Each student rotates through 3 weeks in the Production animal clinic (internal medicine and surgery) (2+1 week), 2 weeks in the Reproduction Clinic (1+1 week, also including horses and dogs), 1 week in Herd Health (8th semester) and 3 weeks in the Farm Service Unit (ambulatory clinic) (1 + 2 weeks). The students participate in the Emergency Services of the Farm Service Unit and an evening duty in the Production Animal Clinic.

Involvement and responsibilities of the students in the clinical rotations. In the **Small Animal Hospital**, students participate in all activities supervised by staff. Students are included in consultations by taking the history and performing physical examinations. After discussions with the supervising clinician on initial findings students create a problem list, list of differential diagnosis and a diagnostic plan. General information about their responsibilities on different rotations is available to students on Canvas. Students are involved with all diagnostic tests, treatments, management and care of their patients. The students also perform supervised basic surgical procedures and assist surgeons on more advanced surgical procedures.

All hospitals and clinics at NMBU-VET use the digital journal system ProvetCloud (see Standard 5.4). In the Small Animal Hospital, students are responsible for recording the patient's history and

physical examination findings in the patient files. In the Small Animal Surgery Service, the students are also responsible for describing the surgical procedures and writing the discharge statement. The supervising clinicians in the Small Animal Hospital assess the students' recordings in the journal before the clinician confirm and finalize the patient files.

In the **Equine Hospital**, students participate in the internal medicine and surgery service. During morning rounds, each student presents status and progress on their hospitalized patients. The students take the patient's medical history, perform a clinical examination, participate in diagnostics and treatments, and write a problem-orientated summary for each patient. Unlike the Small Animal Hospital, students in the Equine Hospital are not responsible for writing patient records or discharge statements. In the afternoon, all patients staying in the hospital overnight are discussed with the emergency clinician on call. Clinical rounds are held once weekly on Wednesday afternoons.

At the **Production Animal Clinic**, the students are assigned hospitalized patients and work in groups of 2-3. The patients in the clinic (cattle, small ruminants, and pigs) are referrals. The students are required to do a full patient work-up including clinical examination, necessary diagnostic tests, differential diagnosis list and treatment. A student version journal (on paper) is used as a teaching and assessment tool. However, the students are also responsible for updating the digital journal system under close supervision of the supervising clinician. The students provide status reports of their patients to clinicians and present their cases to the other students. Students take part in after-hours activities, which consist of evening rounds to assess the condition and progress of patients, as well as providing medication and care. The ambulatory **Farm Service Unit** operates as a regular production animal practice, based at NMBU-VET. A group of two to four students accompanies the clinician to the farms. Students are involved in and take responsibility at all stages of the work, from history taking to diagnosis and treatment. The students are expected to suggest relevant additional tests and to investigate the relevance of preventative measures in each case. Student involvement applies to surgical cases as well as medical cases and herd health visits. Students are responsible for maintenance of drugs and equipment in the service vehicles. Student performance is monitored by supervision. There is extensive use of student journals, presentations, and case reports.

Emergency services and on call duties. The Emergency Service of the Small Animal Hospital is part of the clinical rotation. Students participate in on-call and emergency work during the clinical rotations in semester 8 and 9 and in the small animal track (semester 10/11 or 11/12). In the Emergency Service of the Small Animal and Equine Hospital, students participate in taking the patient's medical history, perform a physical examination, present the patient to the clinician, discuss the case and assist the clinician in diagnostic and treatment procedures. At the Production Animal Clinic, students do evening rounds (ca. 1 evening per week) and administer necessary medications. The Farm Service Unit has a 24/7 call duty and the students take part mandatory on-duty during which they are available for emergency calls for about two weeknights and one weekend. The students are involved in the clinical work in these emergency calls.

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 basis for the practical training in meat inspection and related topics and food control is the theoretical teaching in the 6th semester, which includes a full-day excursion to abattoirs that also perform deboning and processing. Half of the students visit the Fatland abattoir at Furuset Oslo (40 km from Ås campus), which is an abattoir slaughtering cattle, pigs and sheep/lambs and the other

half of the students visit the Nortura abattoir at Tønsberg (60 km from Ås campus), which is an abattoir slaughtering pigs. Both plants have facilities for deboning, processing, and packaging.

During the rotation in the 9th semester, groups of 5-6 students live at NMBU campus Sandnes for one week and are trained in meat inspection including animal welfare, ante mortem inspection, slaughter hygiene and HACCP. The students must demonstrate theoretical knowledge within these topics during the examination on the last day of the week. In addition, the students must demonstrate practical skills related to the post-mortem inspection. In the 9th semester, two abattoirs are used for training in meat inspection and related topics for production animals and one abattoir for poultry. Veterinary Officers employed by NFSA provide the teaching in meat inspection. The responsible veterinary officer works with and delegates training tasks to the official veterinarians at the relevant slaughterhouses. The veterinary officer works in close contact with the NMBU-VET staff member responsible for meat inspection.

Description of the selection procedures of the Electives by the students and the degree of freedom in their choice (e.g. what happens when too many students select one specific track)

In the 10th and 11th or 11th and 12th semesters, the students are assigned to one of five differentiation tracks according to certain criteria. Assignment to a track occurs at the end of 8th semester. The tracks are: 1) [Differentiation in Production Animal Medicine and Food Safety](#) (35 places); 2) [Small Animal Medicine](#) (25 places); 3.) [Equine Medicine](#) (10 places); 4) [Aquatic Medicine](#) (12 places); and 5) [Project Specific](#). The last cohort of students in the 2002 Curriculum is larger than previous years (90 students) and the numbers of places in the tracks have been increased accordingly. The tracking is 2 semesters (40 weeks; 60 ECTS) and consists of 3 parts: 1) Compulsory component of track; 2) Optional courses; and 3) Graduation thesis. Each student applies to three differentiation tracks in order of preference to the Academic and Research Administration. The allocation is done by lottery and the majority of students are allowed their preferred track. The allocation is binding and can only be changed under special circumstances if it is professionally justifiable and practically possible for the Departments concerned.

At the end of 8th semester, the students elect to be “Autumn graduate” or “Spring graduate”. “Autumn graduates” complete their studies and receive their degree after the 11th semester. “Spring graduates” receive their degree after the 12th semester. All candidates take the examination in small animal and equine medicine at the start of 10th semester. The “Spring graduates” do not take their production animal medicine examination in 9th semester but wait and take the examination in the 10th semester. In 10th semester, the “Spring graduates” do not follow teaching at NMBU-VET. The division between autumn and spring graduates is approximately 25/45.

In the tracking year, the students, working in groups of 2-3, submit a final graduation thesis. The topic of their thesis is usually related to their chosen track. A list of potential topics within each track is provided by the supervisors. If there is more than one student group interested in a proposed thesis, an allocation is done by lottery. The students can also propose a topic for their own thesis, in cooperation with a supervisor.

Procedures used to ascertain the achievement of each core practical/clinical activity

Practical activities are mandatory (generally a minimum of 80% attendance is required to pass a course). In the first year of the 2021 curriculum, this includes courses in animal husbandry (VET350), practical activity in cell biology and histology (VET351) and anatomy and physiology (VET354) (Appendix 02). In the curriculum of 2002, practical activities in preclinical and

paraclinical courses such as anatomy and physiology, laboratory courses in microbiology and immunology are mandatory. In the clinical courses and rotations, including pathology and meat inspection, all courses are mandatory, and require active participation. Attendance and participation must be approved by the teaching staff. Approval of submitted records are used in some clinics, such as the Farm Service Unit and Small Animal Hospital. Many courses require course reports to be submitted for approval. Practical skills are tested in an OSCE- examination in small animal and equine medicine and in a final practical/clinical examination in production animal medicine.

Standard 3.2: Each study programme provided by the VEE must be competency-based and designed so that it meets the objectives set for it, including the intended learning outcomes. The qualification resulting from a programme must be clearly specified and communicated and must refer to the correct level of the national qualifications framework for higher education and, consequently, to the Framework for Qualifications of the European Higher Education Area.

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

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

Description of how the VEE:

a) ensures that the study programmes meet the objectives. In Curriculum 2002, work has been performed to ensure that the plan satisfies Day One Competences as well as meeting the national qualification framework and the Universities and Colleges Act with its underlying regulations. The new Curriculum 2021 includes all subjects from the old curriculum, but places emphasis on delivering a broad basic veterinary education at the expense of the choice offered in the tracking year of Curriculum 2002. The annual QA study report to NMBU documents whether the veterinary study programme meets its objectives. The overall goals are written into the general descriptions for both current curriculums. The learning outcomes for the individual courses are listed in the course plans available online (EPN) and are listed in Appendix 02.

b) promotes an academic environment conducive to learning. Through the [Act relating to universities and university colleges](#), the NMBU Board has full responsibility for the students' learning environment. The university is also required to have a learning environment (LMU) committee with student representation that reports directly to the University Board. The annual QA study report from NMBU-VET to the Pro-Rector for Education provides basic data for the LMU report. Measures related to the physical and psychosocial learning environment are then implemented at faculty level according to the QA loop. The quality and qualifications of academic staff at NMBU-VET contribute to a learning environment directed to research-based education. In clinical environments, many staff members have “double competence”, with qualifications in research and board certification in a clinical discipline. The academic environment for students at NMBU-VET is also contributed to by the PhD programme and the intern and residency programmes and the involvement of students within active research groups in NMBU-VET.

c) encourages and prepares students for self-learning and lifelong learning. In the development of Curriculum 2021, there are requirements for student-activating learning methods, less use of traditional lectures to stimulate students' self-activity and the use of cases to highlight relevance and increase motivation. The teachers at the NMBU-VET have didactic freedom and VET-SU

holds seminars and gives instructions to promote teaching forms that facilitate the students' self-learning and activity. The development of skills in self-learning prepares the student for lifelong learning. The academic environment at NMBU-VET also prepares the student for lifelong learning by exposing and informing the students on career development through PhD, intern and residency programmes and continuing education networks.

Standard 3.3: Programme learning outcomes must:

- **ensure the effective alignment of all content, teaching, learning and assessment activities of the degree programme to form a cohesive framework**
- **include a description of Day One Competences**
- **form the basis for explicit statements of the objectives and learning outcomes of individual units of study**
- **be communicated to staff and students**
- **be regularly reviewed, managed and updated to ensure they remain relevant, adequate and are effectively achieved.**

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

The educational aims of NMBU-VET are stated under Standard 1.1. To achieve these learning outcomes, the curriculum 2021 has adopted an educational framework of three levels (Figure Standard 3.3). Level 1 focuses on the healthy animal (semester 1-4), level 2 focuses on the diseased animal (semester 5-7) and level 3 focuses on applied veterinary medicine (semester 8-11).

Figure Standard 3.3. Educational framework of Veterinary Curriculum 2021



The other strategic changes in the curriculum have been to promote a better integration between the basic science and clinical science subjects and to introduce early animal contact. An organ-based approach to subjects in the “healthy” (level 1) and “diseased” (level 2) animal contributes cohesion in the curriculum, as do the longitudinal threads in professional studies and animal welfare.

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

NMBU-VET performed extensive mapping of Day One Competences across the Curriculum 2002 and the same task is being done with Curriculum 2021. With the completion of the learning outcome descriptions including all clinical subjects in Curriculum 2021, VET-SU will be responsible for requiring a mapping of learning outcomes to Day One Competences (Appendix 02).

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

The course coordinator is responsible for defining learning outcomes for all courses. In the development and planning of new courses, working groups are appointed by VET-SU and asked to suggest learning outcomes. Learning outcomes are adopted by VET-SU who are responsible for the entirety of the programme. The learning outcomes are revised annually together with the rest of the course descriptions following the QA loop described under Standard 1.4.

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

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

Description of how (procedures) and by who (description of the committee structure) the core curriculum is decided, communicated to staff, students and stakeholders, implemented, assessed and revised

VET-SU is the VEE's strategic body within education. The committee provides advice and strategic input to the Dean in matters relating to education. VET-SU has two veterinary student representatives and one veterinary nurse student representative, one staff member from each department and a leader (The Head of Teaching). The Academic and Research Administration is secretary and observer. Working on delegation from the Dean, VET-SU has a central role in the quality assurance system and in developing the curriculum (See Standards 1.4 and 3.3). VET-SU is responsible for the development of educational strategy, for effective use of teaching resources, for quality assurance of the educational activities including the annual Study QA report, for national and international educational cooperation including exchange, for international accreditation, for guidelines in educational matters, for revision of the annual curriculum and semester plans, for pedagogical development work and for local student admissions.

Quality assurance. The annual QA cycle is presented under Standard 1.4 and 1.6. The Head of Teaching (chair of VET-SU), head of Academic and Research Administration and QA senior advisor and secretary in VET-SU have weekly meetings (here referred to as the Study management). These meetings facilitate work with the study programs and provide administrative support to the Head of Teaching. As the Academic and Research Administration administers the student evaluation system and the study administrative system, deviations are rapidly detected, e.g. if a high proportion (more than 20%) of the students have below average satisfaction with a course or if a high proportion of the students have failed the course or the participation in the voluntary teaching in the course is low. Measures can then be initiated, either immediately by the Study management or discussed in VET-SU or introduced as measures in the Study QA report. The Study management may also meet with student cohorts to obtain suggestions for changes when necessary.

Seminars for employees and the activities of VET-SU. See Standard 9.1 for VET-SU initiated seminars. The Study QA report gives an annual account of the activity of VET-SU and the seminars that have been conducted. In the last academic year, 12 seminars related to educational matters have been held in addition to three open information meetings related to planning and implementation of Curriculum 2021.

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

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

Description of the organisation of the EPT and how it complements (but not replaces) the academic clinical training

In the summer between the first and second year of study ([VET350b](#)), veterinary students have four weeks of practice on a farm or in sea-based fish farming to gain practical knowledge and experience of animal husbandry in Norway. The farm practice can be on a dairy farm, or on farms participating in dairy goat, piglet or poultry production. Each week must have minimum 37.5 working hours. After completion of the 3rd year of study and before the end of their studies, students must complete 3 weeks of observing veterinary practice (VET323 Compulsory Practices). This practice comes in addition to the clinical training at NMBU-VET and aims to give the students contact with and knowledge of working life as a veterinarian. The student is free to choose the type of practice and location, in Norway or abroad. The hosting veterinary practitioner must complete a form confirming that the student was present for the allocated period.

Meat inspection is mainly taught by veterinary officers in NFSA. Students also follow veterinary inspectors in NFSA in their daily work. Both activities are under close supervision of academic staff at NMBU-VET.

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

| Field of Practice | Minimum duration (weeks) | Year of programme |
|---|--------------------------|-------------------|
| Production animals or fish farming (pre-clinical) | | |
| VET350b | 4 | 1 |
| Companion animals (pre-clinical) | 0 | |
| Compulsory Practices | | |
| VET323 | 3 | 4/6 |
| FSQ & VPH | | |
| Meat Inspection (Sandnes) | 1 | 5 |
| Food safety authority | 0.6 | 5 |

Standard 3.6: The EPT providers must have an agreement with the VEE and the student (in order to state their respective rights and duties, including insurance matters), provide a

standardised evaluation of the performance of the student during their EPT and be allowed to provide feedback to the VEE on the EPT programme.

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

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

EPT providers in VET350b are required to sign a contract with the student and a form documenting completion of the period. The hosting veterinary practitioners in VET323 must complete a form confirming that the student was present for the allocated period. The contract and registration forms were digitalized in 2023. For examples, see Appendix 09. Today this is a “seeing practice” without requirement for “hands-on” training. Thus, we have not previously considered this as an EPT and the practice is not awarded ECTS. One reason for this are the challenges associated with economic compensation of the veterinarians and additional liability insurance, for students as well as patients. In the Curriculum 2021 we aim at implementing mandatory EPTs in veterinary practice, fulfilling with requirement for hands-on training and full implementation of assessments, case logs etc. We aim at solving the challenges related to economy and liability insurance in cooperation with The Norwegian Veterinary Association. For Meat Inspection and practice (see Table 3.1.3), NMBU-VET has an agreement with NFSA for students to receive instruction from their veterinary officers. The responsible academic staff (see below) have close contact with the responsible staff in NFSA to plan teaching, get feedback from NFSA and to discuss feedback from students.

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

The academic person(s) responsible for:

- EPT activities on farms (VET350b) is Sveinung Eskeland PRODMED.
- Supervision of EPT activities at slaughterhouse is Eystein Skjerve (course coordinator) PRODMED and Atle Domke PRODMED (practical follow up and contact with students and personnel in NFSA).
- Practice with the NFSA is Marit Nesje, PRODMED (practical follow up and contact with students and staff in NFSA).

Academic and Research Administration is responsible for EPT documentation and student feedback on EPT at veterinary practices (VET323).

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.

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

After the period of extramural work on animal production farm, the students must write an individual report that has to be approved by the supervising teacher. After the practice period, students come together and share their reflections and experiences in an afternoon workshop

supervised by academic staff.

The EPT at veterinary practices requires students to observe veterinary practice outside the VTHs for the stipulated period and to document their attendance. It is not a requirement to keep a record of their experience. This observation of practice will not be continued in its present form in the 2021 Curriculum (See Comments).

The meat inspection teaching is mandatory, and the students must pass a practical examination at the end of the week. The practical training with NFSA in semester 9 is mandatory. In semester 11, the students must pass an examination in State Veterinary Medicine including the role and tasks of the NFSA. The meat inspection teaching and the practice in NFSA are included in the students' course evaluations.

Description of the complaint process in place concerning EPT

The complaint process for EPT consists of direct contact with the responsible person for the EPT activity and/or Academic and Research Administration.

Comments on Area 3

The veterinary curriculum at NMBU-VET is in a process of revision. The main principles for the new curriculum were adopted by NMBU-VET management in 2016. However, the new curriculum was not implemented until 2021 because of the Covid-19 crisis and delays in relocation to Campus Ås. The new curriculum will not contain a tracking year. This change will give all students a broader basis for entry-level tasks in all important veterinary fields and a sound foundation for further development and specialisation. Although there will no longer be a Project specific track, students will still be able to involve themselves in research by following the Student Research Program. In curriculum 2021, all students will be required to produce a 12 ECTS literature-review as their graduate thesis in semester 8.

Curriculum overload has been a focus of the annual revision QA cycle for curriculum 2002 with the aim of achieving Day One Competences, reducing the amount of organized teaching, and promoting self-learning. The regular dialogue between VET-SU and teaching staff has sustained a reduction in organized teaching in the veterinary programme since the last ESEVT visitation. However, the increased emphasis on subject areas such as sustainability, One Health, professional knowledge, animal welfare, animal health economics, evidence-based veterinary medicine, own mental health and clinical communication in the new curriculum will be a challenge that has to be achieved through better integration with existing subjects and the awareness and competence building of teaching staff.

External practical training requiring observation only of veterinary practice is to be discontinued in Curriculum 2021. In the 2021 curriculum, EPT at veterinary practices will be part of tentatively 6 elective weeks. Active participation of students will be required and there will be stricter requirements for follow-up and documentation for both students and external practitioners.

The impact of the Covid-19 crisis on students, staff and teaching in the three academic years of this evaluation has been presented in the Covid-19 Addendum (see Appendix 10). Compensatory measures were introduced to enable teaching and examinations to be conducted, and student progression was maintained.

Suggestions for improvement in Area 3

The implementation of Curriculum 2021 should continue with its focus on the integration of basic

and clinical subjects and the expansion of core clinical training following the removal of tracking.

The work on reducing curriculum overload should continue but must be balanced with the need for an increased emphasis on subject areas such as practice administration, working environment, and leadership and generic competences such as communication and mental health. Training of staff and continued focus on D1C at all levels of curriculum planning and implementation will help teachers prioritize subjects for their teaching.

Area 4. Facilities and equipment

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

Description of the location and organisation of the facilities used for the veterinary curriculum (surface area, distance from the main campus for extramural facilities, ...) (maps to be provided as appendices)

The maps of the VEE are provided in Appendix 03.

Campus Ås

With its relocation to Ås, NMBU-VET became part of Campus Ås - Norway's largest interdisciplinary professional environment within environmental and life sciences. The campus covers about 6000 acres and houses NMBU, NVI and two large research institutions within food research, namely central parts of Norwegian Food Research Institute (Nofima) and Norwegian Institute of Bioeconomy Research (NIBIO). As part of the project, NMBU was granted a new “University Farm” and fish laboratories, organised as part of the Livestock Production Research Centre (SHF) at NMBU. SHF is Norway’s largest educational and research facility for fundamental and innovative research as well as practical solutions for sustainable and profitable livestock farming. The SHF facilities are used in teaching veterinary students.

The Veterinary building has a total area of 63,000 m² and includes several distinct but connected buildings and is as such the largest public building in Norway. The building combines research facilities and teaching rooms for veterinary medicine. The special requirements for infection control, animal hospital and research facilities make the building one of the most complex construction projects ever carried out in Norway. The building is owned by NMBU, but 18,000 m² houses The Norwegian Veterinary Institute (NVI). NMBU’s part of the Veterinary building complex constitutes 45 000 m² and houses the Faculty of Veterinary Medicine (NMBU-VET), in addition to the NMBU University Library and some support functions of the University, including IT-support.

VET Building is a complex of buildings. The VET building contains a total of 2,400 rooms that include auditoriums, laboratories, animal hospitals, research facilities with aquariums and other special areas for veterinary medicine that are furnished with modern facilities for veterinary education.

- The **Main VET building (Hippocampus)** contains central teaching facilities including large auditoria, teaching laboratories, group seminar rooms and student facilities, in addition to faculty administration and staff offices.
- State of the art veterinary teaching hospitals with rooms and facilities for medicine, surgery, and diagnostic imaging for companion animals (**Small Animal Hospital**), and equines (**Equine Hospital**), and production animals (**Production Animal Clinic**).

- The **Morphology building** contains an auditorium and advanced modern facilities for Anatomy dissection and for Pathology necropsy examinations and experimental fish facilities.
- The **Laboratory building** (“**Lab Sør**” and “**Lab Nord**”) consists of 4 wings containing diagnostic and research laboratories for histology, advanced imaging, cell biology, laboratory for clinical pathology, biochemistry, physiology, immunology, genetics, microbiology, pharmacology, and toxicology that are equipped and organized to enable laboratory work at biosecurity level II (BSL2) and to meet GMO standards.
- The **Norwegian Veterinary Institute** is situated in buildings in the VET building complex.

In addition, the **University building** (“**Bikuben**”) contains auditorium, seminar and group rooms, as well as a canteen and student facilities.

Campus Sandnes. Campus Sandnes of NMBU-VET is located at Høyland in Sandnes, Rogaland County on the south-west coast of Norway and is about 600 km away from Ås. The region has the most highly concentrated number of farm animals in Norway and one of the highest in Europe. The campus houses the Section of Small ruminant research and farm animal health of PRODMED. The campus has around 600 ha of agricultural land (the experimental farm), a sheep house with space for 180 ewes, isolation facilities, surgery facilities, necropsy rooms, and laboratories. On campus is also a building for experimental biomedical research (SEARCH) in cooperation with University of Stavanger Hospital as well as the regional laboratories of NVI.

Description of the strategy and programme for maintaining and upgrading the current facilities and equipment and/or acquiring new ones

The VET Building and most equipment were new in 2020, and the building was officially opened 1st September 2021. NMBU’s Real Estate Department (EIA) is responsible for management and maintenance of the university’s buildings. NMBU-VET is responsible for everything related to its activities. An investment and maintenance plan is currently being drawn up, and continuous assessments are made on service agreements on equipment as required.

Description of how the VEE ensures that all physical facilities comply with all relevant legislation

The VET building complex was designed and constructed in accordance with the special requirements for education, infection control, animal hospital and research facilities. Norwegian legislation concerning health, safety, biosecurity, accessibility, animal welfare and care standards has been followed during construction of the building. All employees are obliged to undergo training in health, safety, and environment (HSE). HSE representatives, radiation protection coordinators and the clinic managers oversee that Norwegian laws and regulations are followed at NMBU-VET including Campus Sandnes. At Campus Sandnes, the buildings used by students during their stay are in accordance with the Norwegian housing regulations.

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

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

Students and staff have access to free, wireless internet on the whole campus area.

Short description (number, size, equipment, ...) of the premises for:

a) lecturing. All lecture theatres are equipped with audio-visual equipment and free, wireless internet. There are 4 large lecture theatres: Hippocampus (Hippocampus, 108 seats); Pegasus (Hippocampus, 112 seats); Gullvepsen (Common building, 150 seats) and Amfi (Morphology building, 90 seats). Smaller lecture/seminar rooms include: Vomma (Production Animal Clinic, 50 seats); Innsikten (Hippocampus, 90 seats); Admiralen (Common building, 60 seats) and Fornix (Hippocampus, 36 seats).

b) group work (seminars, tutorials, ...). All lecture theatres and group rooms are equipped with audio-visual equipment and free wireless internet. In Hippocampus, there are 12 group rooms (2 x 16 seats; 7 x 12 seats; 1 x 10 seats; 2 x 8 seats). In the Common University building “Bikuben”, there are 4 group rooms each seating 5.

c) practical work (laboratories, ...). In the Morphology building, there is an anatomy dissection hall for 90 students (anatomy), and two necropsy halls for group teaching (pathology). In connection to the dissection hall, there are study rooms and anatomical and pathological preparations. A room equipped with a discussion microscope for 15 students is easily accessible for all students on the ground floor. In the Hippocampus building, there are two teaching laboratories: Basic Sciences laboratory is a room with 90 seats and 1.5 monitors pr student for teaching courses in cell biology/biochemistry, physiology, histology (anatomy and pathology) and other dry or “semi-wet” student activity without infectious agents; and Microbiology laboratory is a BSL2 laboratory for activities involving infectious agents. The room seats 90 and can be divided into two teaching rooms. The laboratory is equipped for teaching bacteriology, virology, mycology and parasitology. The laboratory is equipped with 90 microscopes for students.

d) skill labs (preclinical stimulation-based training on dummies, ...). The students have access to two skill labs. At the skill lab in the Small Animal Hospital, students can practice basic clinical skills on clinical models. The lab is freely available to the students. On Wednesdays, the lab is staffed by an older student or a veterinary nurse. The staff guide in clinical skills and sometimes arrange workshops for the students. There is a skill lab in the Production Animal Clinic that contains models for training in reproduction, obstetrics, and surgery. The lab is accessible when teaching staff are present.

Short description (number of rooms and places, ...) of the premises for:

a) study and self-learning. There is one reading room with 47 seats in the Hippocampus building. In the University building (Bikuben) there is a reading room with 70 seats. All group rooms in Hippocampus are available for the students after working hours, in the afternoons and during weekends. There are many reading rooms and group rooms at other faculties on campus. The University is working on joint use of these rooms to provide extra flexibility.

b) catering, canteens, ... The University building (Bikuben) has a canteen available to all students and staff. There are in total 4 other catering establishments on campus Ås, in addition to an open commercial café/restaurant.

c) locker rooms. All students are given their own locker when they start their studies. A large locker room in the Hippocampus building is available for both students and staff. There are locker rooms with showering facilities in connection with the Hospitals and Clinics. Changing rooms are also available in other buildings on campus.

d) accommodation for on call students. On call students have access to sleeping facilities in both the Small Animal and Equine Hospitals. The facilities at the Sandnes Campus include accommodation for up to 48 students in two separate buildings.

e) leisure. The students have a separate area with a kitchenette and sofas. VET-SR and other student organizations have their own office/meeting room. There are several large, open areas where the students can both study and relax. The NMBU [student community](#) has a joint building and organization for students that arranges social measures for the students.

f) sanitary (toilets, washing and/or shower facilities, ...). Restrooms and shower facilities including universal access facilities are provided in all buildings in accordance with the number of students and staff.

Brief description of the staff offices

Most employees sit in multi-person offices. Heads of Departments and leaders of units and sections with personnel responsibility and professors can be assigned a single-person office. Laboratory technicians and support staff are placed in larger multi-person offices, while permanent academic staff sit in two-person offices. Staff with work tasks in laboratories or in clinics can be allocated a shared office space (“clean desk”). Former staff with Professor emeritus status use shared office spaces.

Brief description of research laboratories

The research laboratories consist of 4 wings over 2 floors (“Lab Sør” and “Lab Nord”). The wings are connected through stairs and passages. The laboratory wings are separated from the office area. Access to the laboratory area is permitted only for authorized personnel. Wearing a laboratory coat and designated shoes are mandatory inside the laboratories. Some rooms contain advanced equipment or are designated for special procedures, such as handling infectious agents or work with accredited procedures and have limited staff access. The laboratories are approved for Biosecurity Level 2/GMM2 work, so a resting area with a small kitchen and coffee machine is located right outside the laboratory entrance on each floor.

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

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

Description (number, size, species, ...) of the premises for housing:

a) healthy animals. The **University Farm** is located close to NMBU-VET at Ås (for maps see appendix 03). The farm buildings consist of 12,000 m² for cattle, sheep and pigs (SHF – Ås Gård) and a 1500 m² house for poultry (SHF – Syverud). The University farm is used for teaching in animal husbandry (VET350), propedeutics (VET334) and production animal medicine (VET316). There are two **fish facilities** for rearing salmon, one in a neighboring building (NMBU Fish Laboratory) and one (smaller) inside Morphology building of NMBU-VET, with a total capacity of around 10 000 salmon (depending on weight). **Production Animal Clinic** houses 4-6 sheep (ewes and rams) and 1-2 dairy cows and a few goats that are used for teaching. The Section for

Small Ruminant Research and Farm Animal Health in Sandnes has a commercial sheep flock of approximately 180 ewes. **Equine Hospital** houses 5 horses for training in clinical examination. Private dogs owned by the staff at the **Small Animal Hospital** are used for training in clinical examination and noninvasive practical procedures.

b) research animals. The facilities for laboratory experimental animals are in the Morphology building and include laboratory fish and salmon aquaria and facilities for rodents and production animals. The rodent facility has separate rooms (about 72 m² in size) for teaching of students. At Campus Sandnes, there is an isolation facility used for research and a porcine research facility (SEARCH) equipped with a total of six pens.

c) hospitalised animals. The **Small Animal Hospital** has 7 dog wards each housing 7 dogs and two cat wards each housing 8 cats, in addition to the isolation and infectious disease area. There are also 12 roof-covered outside kennels. There is one room for housing and examination of exotic animals equipped with 3 cages. The infectious disease ward has a separate examination room and housing for 4 dogs, each with separate inside and outside kennels and two rooms for cats, each with 4 cages. The isolation ward has one inside/outside kennel housing for one dog.

The **Equine Hospital** has stabling for a total of 40 in-house patients, in addition to 8 teaching horses. The stabling area is further divided into 3 surgery areas with a total of 12 stalls, 3 medicine areas with a total of 16 stalls, an ICU unit with two stalls for mares and foals. There are 6 out-patient stalls in an area separate from the main hospital. There are 7 turn-out paddocks and a larger field for the teaching horses. There is also an isolation unit with separate access from the main hospital providing four stables.

The **Production Animal Clinic** has the following rooms and pens for hospitalized patients: two rooms for small ruminants each with five pens; three rooms for cattle (two each with 4 large pens for cows or bulls); one with 5 small pens designed for young cattle (calves) and 1 large pen designed for cow and calf or alternatively two young cattle). There is a Pig room with 3 sow pens. There is an isolation room, which contains one large pen and a cattle crush for examination and fixation.

Description (number, size, equipment, species, disciplines, ...) of the premises for:

a) clinical activities. **Small Animal Hospital** includes separate reception areas for dogs and cats. There are 11 examination rooms for dogs and 5 for cats, 6 specialist rooms cardiology, oncology, ophthalmology, ultrasound, dentistry, and endoscopy. There are 6 hospital treatment rooms, with 4 dedicated for specialist rooms. The ICU has oxygen cages and houses 11 dogs, one treatment room for dogs and one for cats as well as housing for 6 cats. There are 6 surgical theatres, with dedicated rooms for dentistry, blood bank and physiotherapy with water treadmill and swimming pool. The infectious disease ward has a separate examination room and housing for 4 dogs, each with separate inside and outside kennels and two rooms for cats, each with 4 cages. The isolation ward has one inside/outside kennel housing for one dog. There is a cadaver room and a diagnostic laboratory as well a diagnostic imaging unit with CT, MRI, two digital radiography rooms and an ultrasound room. The **Equine Hospital** includes a reception area with seating for clients, 3 surgical theatres (including one for standing surgery), induction areas, padded recovery stalls (2), isolation facilities separated from the main hospital, lameness evaluation areas with hard and soft lunge areas, one trot-up strip inside the hospital and an indoor arena for lameness evaluation equipped with camera system for gait evaluation, high speed treadmill room, examination rooms (4), theriogenology area with phantom for semen collection, food preparation room, storage rooms for drugs, fluids and medical equipment. For diagnostic imaging, there is a 3T MRI scanner, digital radiography, fluoroscopy, ultrasonography, standing magnetic resonance imaging and state-of-the-art large bore computed tomography on a sliding gantry system as well as a separate room for scintigraphy. The **Production Animal Clinic** includes an operation theatre, a clinical examination room, clinical

demonstration room and a clinical laboratory. The operation theatre has a padded entrance room and one table for large ruminants and smaller and more flexible solutions for small ruminants and pigs. The clinical examination room has one hydraulic cattle hoof trimming chute and one cattle crush for fixating cattle during clinical examination and a portable digital x-ray and ultrasound machine, as well as endoscopic equipment. There is a clinic pharmacy. The clinical demonstration room is used as a wet lab and as a skills lab with models for training, mainly in reproduction and obstetrics. This room has access to the auditorium where an animal can be introduced for demonstration in a closed pen inside the auditorium. The main rooms used for teaching at **Campus Sandnes** are the operating theatre for small ruminants, the necropsy hall for performing postmortem of small ruminants submitted by local farmers during periods of teaching, and the laboratory facilities for blood samples, bacteriology, and parasitology.

b) diagnostic services including necropsy

Clinical Pathology Laboratory in laboratory wing performs clinical-chemical, hematological, and endocrinological analyses on patient samples requested from the clinics at NMBU-VET and external private veterinary practices. The use of high-capacity analysis equipment and a laboratory information system enables rapid quality-assured analysis results on the same day the sample is received for most analyses. There is a smaller laboratory in the Small Animal Hospital with one engineer and one clinical pathologist contributing to the daily teaching. Microbiology laboratory in the laboratory wing has defined areas for virological, bacteriological, and parasitological diagnostics. Samples from the routine diagnostics in bacteriology and parasitology are used in teaching of veterinary students in the microbiology teaching laboratory. In Pathology, there is a BSL2 necropsy hall with student changing rooms with showering facilities. In the necropsy hall, there are 3 adjustable tables for necropsy of smaller animals and 2 larger mobile tables for larger animals. There is a separate room for euthanasia of animals. Necropsy findings are demonstrated in the adjacent auditorium.

c) others (specify). None

Description of the equipment used for clinical services (diagnostic, treatment, prevention, surgery, anaesthesia, physiotherapy, ...)

The main equipment used for clinical services are described in relation to descriptions of rooms above.

Brief description of the premises (both intra-mural and extra-mural) used for the practical teaching of FSQ & VPH (slaughterhouses, foodstuff processing units, ...)

The practical teaching in FSQ and VPH takes place at five slaughterhouses, all are also foodstuff processing units. These facilities are Nortura abattoir at Tønsberg (60 km from campus Ås) slaughtering pigs or Fatland Furuset at Oslo (40 km from campus Ås) slaughtering cattle, sheep/goats and pigs; and at Sandnes, Nortura Forus slaughtering sheep/goats and pigs; Fatland Jæren slaughtering cattle, sheep and pigs and Nærbø Kyllingslakt slaughtering poultry.

Standard 4.4: Core clinical teaching facilities must be provided in a veterinary teaching hospital (VTH) with 24/7 emergency services at least for companion animals and equines. Within the VTH, the VEE must unequivocally demonstrate that standard of education and clinical research are compliant with all ESEVT Standards, e.g. research-based and evidence-based clinical training supervised by academic staff trained to teach and to assess, availability for staff and students of facilities and patients for performing clinical research and relevant QA procedures.

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

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

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

Description of the organisation and management of the VTH and ambulatory clinics (opening hours and days, on-duty and on-call services, general consultations, list of specialised consultations, hospitalisations, emergencies and intensive care, ...)

The **Small Animal Hospital** is divided into three separate sections: Internal medicine, Surgery and Outpatient/Emergency/Intensive care. The hospital is open daily (Monday-Friday) between 08.00 and 15.45, but accessible for emergency/intensive care 24/7. Between 15.45 and 22.00, the emergency intensive care unit is operated by one veterinarian, one anesthetic nurse, one internal medicine/intensive care nurse and one student assistant nurse. During the night there is one veterinarian and one surgical nurse on duty. These teams also take care of hospitalized patients. The hospital emergency services include surgical procedures served by an on-call surgeon and an anesthesiologist.

- Normal working hours: 8-15.45
- Outpatient clinic (policlinic): 30 minutes consultations
- Specialized consultations /referrals: Every day: internal medicine, surgery, acute/intensive care, neurology, oncology (oncologist on maternity leave). Reproduction; 2-3 days a week. Cardiology, one day per week.

The normal opening hours for the **Equine Hospital** are 8-14 Monday-Friday. Ambulatory services are provided within these hours as well. The hospital emergency services are available 24/7 and include critical care and surgery procedures. The on-call staff includes one veterinarian, one nurse and one anesthetist. For procedures requiring two surgeons, a surgical back-up is available. The ambulatory emergency service is also available 24/7 and covers the Oslo area.

The **Production Animal Clinic** is a teaching hospital and only admits patients during the teaching semester. No patients are admitted during evenings and weekends. A 24/7 on-call service for production animals is operated by the **Farm Service Unit**. Students participate during periods of clinical rotation. The practice area covers the greater Oslo municipality and typical cases include obstetrics and emergencies for cattle, sheep and pigs and artificial insemination of cattle.

Description on how the VTH and ambulatory clinics are organised in order to maximise the hands-on training of all students

Small Animal Hospital. During the 8th and 9th semester, students are divided in groups consisting of 4-7 students. Each group performs in total 2 weeks surgery (1+1 week), 2 weeks internal medicine (1+1 week), 2 weeks of first opinion practice (1+1 week). Teaching in Diagnostic Imaging is included in the rotations, and students also rotate through anesthesia one day while on the small animal surgery rotation. Students have one evening or one day shift on the weekend/public holidays per week in rotation. In all units (internal medicine, surgery and outpatient/emergency/intensive care), 1-2 students in each group of 4-6 are responsible for their own patients under the guidance of a senior clinician. There is an introduction to preventive health work, environmental issues, handling, behavior, owner communication and ethics. As far as practically possible, castration of male cats and ovarian hysterectomy of female cats are offered as surgical training to all students. Routine procedures are performed by the students under supervision of staff, and as their experience increases, they may perform routine procedures

independently and take part in the more complicated procedures. In the internal medicine unit, specific days of the week are scheduled for gastroenterology, urinary tract disease, cardiology, neurology, and oncology patients.

During 10th and 11th semester, students who have chosen small animal track (25 students) are required to spend three weeks in internal medicine, three weeks in surgery, three weeks emergency/critical care, one week anesthesia, one week of nightshift. In addition, students can choose to spend an additional two weeks at the hospital. During this time, students have two evening/nightshifts per week, including weekends and public holidays. During these tracking semesters, the students work more independently, have more responsibility for their patients, but are still under supervision by senior staff members. The students participate actively in more complex diagnostic and surgical procedures. They must attend practical courses in clinical pathology (one week), clinical neurology (two weeks), anesthesia (one week), Reproduction and obstetrics (one week), Radiology (two weeks). There is also a one-week optional course in clinical communication, mental health and business administration, a course they are encouraged to attend. Students demonstrate cases for younger students and senior staff. For on-duty, afterhours work, the participation of students in the clinical work is the same as their obligations during normal working hours, and the focus is on hands-on training.

Equine Hospital. All students are allotted hospitalized patients that they are responsible for. This includes at least one full clinical examination per day and medications during working hours. The students also follow the diagnostic work up and treatment of their patient, in close cooperation with the attending senior staff. At morning rounds every day, the students present their cases and discuss the progress and plans for the patients with the attending clinicians. As a referral hospital, many procedures are advanced and performed by senior staff with assistance from students. Simpler procedures are done by the students under supervision of staff, and as students progress, they gradually work more independently. All students do one mandatory day and night of on-call duty per week where they work independently and unassisted with monitoring and treatment of critical care patients with the veterinarian on-call available by telephone. The students also assist the on-call staff with emergencies. Ambulatory equine service is available for the students during their weeks of clinical rotation and includes more basic procedures where the students work independently according to their level of competence, supervised by the attending clinician. Ambulatory emergency practice is optional and voluntary for the students.

Production Animal Clinic and Herd Health Services. During clinical rotations, each student receives 3 weeks teaching in the Production Animal Clinic (internal medicine and surgery) (2+1 week), 2 weeks teaching in Reproduction (1+1 week, also including horses), 1 week in Herd Health (8th semester) and 3 weeks in ambulatory Farm Service Unit (1 + 2 weeks). The students participate in the Emergency Services of the Farm Service Unit and evening duty in the Production Animal Clinic. Students are divided into groups of 4-7, and often further subdivided to groups of 2-3 students per patient, allowing for maximum hands-on training. Students in the elective Production Animal Medicine and Food Safety track are stationed in the Production Animal Clinic (one week) and Farm Service Unit (3 weeks) during semester 10/11 and 11/12 in addition to mandatory courses in e.g., surgery, herd health and reproduction.

Section of Small Ruminant Research and Herd Health. Students assigned to Production Animal courses at Sandnes are given wide responsibilities in handling the Section's own 180 sheep during lambing, as well as sheep received from the region. There is at least one caesarean performed per week during 4 weeks of the lambing season (two courses in the Production Animal Medicine and Food Safety track), as well as handling of numerous other diseases around lambing. During the lambing season, the availability of animals, both live and dead (for necropsy), is very good. The

students are expected to have direct contact with the farmers, and treatment and recommendations are given related to the flock situation, and in agreement with the clinicians.

Statement that the VEE meets the national Practice Standards

NMBU-VET including the Small Animal Hospital, Equine Hospital, Production Animal Clinic and Farm Service Unit, meets national Practice Standards. Clinical activity and teaching are research- and evidence- based and the standards are comparable to, and in some areas, exceed the best available in the private sector. The hospitals also provide 24/7 emergency services of a high national standard.

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

Description of how all students can have access to all relevant facilities

NMBU has a card access system that enables access to be given to relevant students, either as full access in defined periods or access during certain hours of the day for facilities not approved for students to work on their own such as the necropsy hall.

The **Small Animal Hospital** is an accessible area where students may move freely and have access to all areas except for MRI and scintigraphy. The students can observe and participate in a broad range of diagnostics. There is a well-equipped in-house laboratory extensively used by students. Students can attend surgery in the operating theater, or through streaming from the surgical areas as all operation lamps and rooms are equipped with camera and microphone. Also, endoscopic examinations can be followed remotely through streaming. The students usually follow their patients and take part in diagnostic imaging. In the **Equine Hospital**, all areas are open to students except MRI and scintigraphy where safety and radiation control restrict access. Spacious facilities allow students to observe and participate in all procedures and all theatres are equipped with cameras and microphones for streaming. In the **Production Animal Clinic and Farm Service Unit**, students in clinical rotation have access to all relevant diagnostic facilities. During the farm service rotation, students are divided into groups of up to 4 and are transported to relevant farms using practice vehicles. Clinical teaching of students at **Section of Small Ruminant Research and Herd Health** is only available during the lambing period, and students have access to facilities to perform necessary diagnostic and therapeutic treatments of farm animals, including an operating theatre, a laboratory, and a necropsy room. Students in the relevant semester are given access to **necropsy facilities** during daytime but they are not allowed to work inside the area without supervision. All students can enter the demonstration auditorium where the findings from necropsies are demonstrated every day.

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

Description (number, size, species, ...) of the premises for housing isolated animals and how these premises guarantee isolation and containment of infectious patients

Small Animal Hospital. Patients suspected of having an infectious disease are directed to the infection unit through a separate entrance from the parking area outside the clinic. Examination in a separate examination room, before eventually entering further into the unit where dogs/cats are separated. Staff enter through barriers and utilize appropriate, disposable garments. The unit has its own laundry and kitchen for preparing food. The Isolation units include:

Cats: Two separate rooms, each including 4 cages, examination table and equipment. One room is reserved for airway diseases the other for gastroenterological cases.

Dogs: Four separate units designed for one dog. Two rooms are reserved for airways diseases, one for gastrointestinal diseases and one for other diseases, in the current situation.

The Isolation unit also includes an isolation facility for suspected severe zoonoses, such as rabies.

Equine Hospital. The isolation unit consists of 4 separated stalls and an examination room. Patients for the isolation unit are delivered in an area closed off from the rest of the admittance area by a fence. Staff enter the isolation unit through barriers and utilizes appropriate, disposable garment. Advanced equipment such as ultrasound and endoscopy are kept in the examination room and dedicated to the patients in the isolation unit. Manure is loaded into a separate container.

Production Animal Clinic. Patients with suspicion of severe contagious disease on referral are not admitted to the production animal clinic. If contagious disease is suspected or diagnosed after arrival, the patients can be isolated in the clinic. Most patients in the Production Animal Clinic are not returned to the herd of origin for biosecurity concerns, but there is a designated isolation room used to keep valuable animals separated from other patients.

Section of Small Ruminant Research and Herd Health. The isolation facilities are only used for research purposes.

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

Description of how and by who field veterinary medicine and Herd Health Management are taught to all students

The **Equine Hospital** currently employs one associate professor in ambulatory services. In addition, interns and other senior clinicians do ambulatory visits. The emergency service is covered by the associate professor, interns and PhD-candidates. The Equine Hospital has one practice vehicle available, seating 4 students in addition to the clinician. Equipment for routine procedures and emergency field medicine are available. In addition, radiography, ultrasonographic and endoscopy equipment is brought as needed. Students take part in routine visits during their equine rotations and can take part in emergency calls.

The **Farm Service Unit** operates in the greater Oslo area and provides Herd Health services to approximately 20 farms. Students are involved in regular scheduled visits and emergency calls. These farms are predominantly family run dairy operations except for the University farm, which is the largest dairy farm in the region with 130 milking cattle. Students participate in a specific one-week Herd Health rotation in semester 8, in addition to performing Health Management tasks during their farm service rotation (pregnancy diagnosis, udder health programs, disbudding, vaccination and more). Each student in the production animal track is assigned a farm ("My farm") in the beginning of their year and groups of two to three follow this farm as Herd Health Managers through their final year. The students are responsible for communication with the farmer,

diagnostic testing, and analyses of these results, setting up a treatment plan and evaluation of the program after a year.

Description of the vehicles and equipment used for the ambulatory clinic

The Farm Service Unit has five fully equipped practice vehicles with room for five people. These are used for transportation of clinicians, equipment, and students. A mobile hoof-trimming chute (hydraulic) and vehicle are also owned by the department and transported to farms when needed.

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

Brief description (number, size, equipment, ...) of the vehicles used for:

a) transportation of students (e.g. to extramural facilities). NMBU Real Estate Department (EIA) has 5 cars equipped with 9 seats that are used for transportation of students to classes outside the campus.

b) transportation of live animals. A separate vehicle is used for transporting live animals from the field and into the Production Animal Clinic. This vehicle is approved for such transport and operated by a trained animal handler.

c) transportation of cadavers/organs.

All vehicles and containers are disinfected before leaving necropsy area. Cadavers from the Equine Hospital/horses from field are transported on forklift in custom-made closed metal containers. Horses may be transported dead from the field. Horses may also come in for euthanasia and killed before taken into the necropsy hall. Cadavers from the Production Animal Clinic are transported in the corridor directly to the necropsy facilities either alive or in closed metal containers as described for the Equine Hospital. Cadavers of production animals from field are transported the same as for horses from field. Cadavers from the Small Animal Hospital and Cadavers from Unit for Experimental Animals are transported in close containers directly into the necropsy facilities. Organs from abattoir are transported in closed boxes in a car.

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

Description of how (procedures) and by who (description of the committee structure) changes in facilities, equipment, biosecurity procedures (health & safety management for people and animals, including waste management) good laboratory practices and good clinical practices are decided, communicated to staff, students, stakeholders (and, if appropriate, to the public), implemented, assessed and revised.

NMBU-VET has a Biosecurity committee appointed by the Dean that is responsible for matters related to biosafety and biosecurity (described under Standard 1.2). Issues related to health and

safety for staff, students and environment are revised annually through the Landax system (digital system for quality management and control) and through the teaching QA system and feed-back from students in every course taught.

A Health Safety and Environment (HSE) Inspection is conducted annually involving a systematic on-site review of facilities by representatives from the NMBU-VET administration and including the HSE-coordinator, the safety representative of the relevant area and the staff unions. A report from the inspection documenting areas and practices for improvement or correction is sent to the Dean detailing needs for action.

HSE coordinator and safety representatives: The HSE coordinator is responsible for keeping the Landax system in a well-organized state, organizes HSE inspections, suggests what to prioritize in the HSE work and deals with any HSE-related notifications. The safety representatives have a role independent from the employer, to represent their colleagues and address any deficiencies related to HSE, either reported by staff members or observed by themselves. The occupational health service assists the employer, employees, working environment committee and safety representatives in the work to create safe working conditions and promote good occupational health. The overarching responsibility for these matters resides with the Dean, the Heads of the departments and Heads of the different units.

The Landax system is used to register and handle acute issues (accidents, near-accidents, unwanted incidents) related to HSE. A HSE Manual (Appendix 11) and an employee manual are available in Landax online. Eco-online is a system for registration of chemicals and where they are located, their health hazard issues, and the evaluations of whether they can be replaced by less harmful substances. All staff are obliged to register the period and degree of exposure to potentially harmful chemicals, such as formaldehyde.

Students are informed of operational policies and procedures regarding biosecurity, good laboratory practice and good clinical practice through documents posted on the learning platform Canvas, where all information for students in different cohorts is added, and during relevant courses and clinical rotations. Questions on HSE are included in the students' digital course evaluations. Students are instructed in safe handling of animals (VET350 and VET334) and the safe handling and treatment of animals are taught in clinical rotations. All students are insured for occupational injury through the National Insurance Act as covered by the National health service. However, to have insurance on the same level as employees, NMBU-VET recommends all students to take out additional disability and accident insurance.

Basic Sciences. All areas have HSE procedures that all categories of staff and students are informed and instructed in procedures before they are allowed to use these areas.

Small Animal Hospital. The waiting areas are large allowing each owner and animal to keep their distance from other patients. One consultation room is dedicated to patients with exudative conditions or other conditions with increased need for cleaning after the visit (e.g uncomplicated diarrhea). Guidelines for triage help the reception staff to decide whether a patient can wait in the common waiting area or in the separate consultation room or be relocated to the infection unit. Dogs and cats are housed in separate facilities. Patients with confirmed or suspected contagious disease are housed in the isolation unit (See Standard 4.6).

Equine Hospital. The hospital's stabling area is divided into separate-sections each with 4-6 stalls to minimize contact between groups of patients. Manure is handled by a closed vacuum-system and is not transported outside the patient's stall. Outpatients have a separate section within but separate from the main hospital. The reproduction department is also separate from the rest of the hospital. Patients with confirmed or suspected contagious disease are housed in the isolation unit. The Head of SPORTFAMED has overall responsibility for biosecurity at the Small Animal Hospital and the Equine Hospital. Each hospital has a local Hygiene committee composed of a

senior veterinarian and representatives from veterinary and support staff. Incidents and discrepancies from the protocol are registered in the online HSE -system (Landax). Changes in procedures and the introduction of new procedures are communicated to employees through regular meetings and weekly newsletters. Students are informed through documents posted on Canvas. Feedback from students and staff is regularly received and is encouraged. Feedback from owners is only sporadically obtained. A Biosafety Manual for the Small Animal Hospital has been made.

Department of Production Animal Clinical Sciences. Most patients in the Production Animal Clinic are not returned to the herd of origin for biosecurity concerns. In general, no animals with suspicion of severe contagious disease are admitted to the clinic, but patients can be isolated upon suspicion after arrival. NMBU-VET has guidelines for access to premises for employees, students, and guests. These guidelines apply to both the facilities on campus and extramural practice. Operational procedures are revised annually through Landax, teaching QA and digital feedback on courses/rotations from students. Students receive information through Canvas. Situations involving injury (or risk of injury) to students are reported as with staff through Landax.

The VEE's manual for biosecurity, health and safety must be provided as an appendix (with a summary in English).

The manual for biosecurity, health and safety is provided in Appendix 11.

Comments on Area 4

The facilities available to NMBU-VET at Campus Ås were new in 2020 and represent state-of-the-art buildings and equipment for teaching and research in veterinary medicine. There has been a particular focus on biosecurity and biosafety in the design of these facilities. The facilities are well-suited to teaching in the clinical sciences and to practical clinical training. A program to upgrade the facilities at Campus Sandnes has been developed.

Suggestions for improvement in Area 4

Booking procedures and course-planning should be optimized to ensure efficient use of all teaching and clinical facilities, particularly in relation to the allocation of resources and the number of admitted students.

Area 5. Animal resources and teaching material of animal origin

Standard 5.1: The number and variety of healthy and diseased animals, cadavers, and material of animal origin must be adequate for providing the practical and safe hands-on training (in the areas of Basic Sciences, Clinical Sciences, Pathology, Animal Production, Food Safety and Quality) and adapted to the number of students enrolled. Evidence must be provided that these data are regularly recorded and that procedures are in place for correcting any deficiencies.

Description of the global strategy of the VEE about the use of animals and material of animal origin for the acquisition by each student of Day One Competences (see Annex 2)

Early contact with live animals is an important principle in the veterinary curriculum introduced from 2021. The students meet healthy animals and are taught animal husbandry and animal production (companion animals and horses as well as production animals, including poultry and fish farming) already in their first year (VET350). NMBU's own farm (SHF) is used, in addition to four weeks practice on a commercial farm or a fish farming facility. The NMBU farm is also used for practical training in other preclinical and clinical subjects.

The two clinical departments (SPORTFAMED and PRODMED) have a continuous focus on patient recruitment to ensure that animals and material of animal origin are available for all students to achieve Day One Competences. The Small Animal Hospital attracts first opinion patients from the local area for general practical training and draws referral patients from a wider area. Pricing of most services is similar to prices in hospitals with comparable services. Exceptions are made for some elective surgical procedures and selective campaigns, where prices are reduced for student and teaching purposes. The Equine Hospital has a very good recruitment of patients, operating in the same market and with similar pricing as private clinics. The Equine Hospital also has an ambulatory service and their own teaching horses for basic clinical training.

Patients in the Production Animal Clinic (cattle, pigs, and small ruminants) are referrals from veterinary practitioners in south-east Norway. Transport, diagnostics, and treatment are free of charge. Information about the services is provided in Facebook groups and magazines for private practitioners. In addition, nonprofit advice and meetings are used to promote the services provided by the Production Animal Clinic. The Farm Service Unit for production animals mainly works north of Oslo, which is the practice area established before moving to Campus Ås. The Unit is gradually moving and expanding its activity to areas closer to Ås. The ambulatory activity ensures that students see a wide variety of patients (cattle, small ruminants, pigs, and some camelids) and herd health problems on farms, both emergency cases as well as routine herd health visits. NMBU's own farm (SHF) is visited frequently by the Farm Service Unit. In addition to hospitalized patients in the teaching hospital and the activities of Farm Service Unit, commercial farms outside the regular practice area of the ambulatory clinic are used for training in reproduction and herd health.

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 (day patients in the clinic) and hospitalisations, balance between individual medicine and population medicine

In all the teaching hospitals/clinics, the students participate in all parts of the patient management and daily clinical work. The students are divided into groups of 4-7 that work in the different parts of the clinics for small animals, horses, and production animals, respectively. All students are required to spend designated time in the different units including internal medicine, surgery, reproduction, polyclinic, ambulatory clinic, and herd health, to ensure that they meet a broad spectrum of patients and cases. The students have out-of-hours duty work / on-call duty, for both small animals, horses, and production animals (see Standard 3.1).

The students usually form smaller groups of 2-3 students in practical and clinical work with the patients. The students are given responsibilities corresponding to their skills and competences, meaning there is a planned progression from the start to the end of their clinical training period. The students are under the direct supervision of a veterinarian from the teaching staff. The aim is to provide hands-on training in essential clinical procedures, using models and/or patients and to practice clinical reasoning, including all the steps from history taking to diagnosis, treatment and plans for follow-up. In addition to clinical examination and performing clinical procedures, the clinical training also includes active participation in collecting and submitting diagnostic tests, performing relevant diagnostic tests themselves, using systems for medical recording and present their cases for other students, teachers, or owners in a relevant way.

Discussions or exercises on specific themes are a part of the learning activities in most clinics, to ensure that all students have the chance to learn and discuss especially important topics and procedures independent of the case load. At the same time there must also be enough time for clinical work, discussion of cases and reflection.

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

All animals that are used for teaching or experimental purposes are handled and housed in agreement with Norwegian legislation and EU- regulations. NMBU-VET adheres to the principles of “never the first time on a live animal” and RRR (replace, reduce, refine) in educational, as well as research activities.

Pathology (necropsy). There is a detailed standard operating procedure for the euthanasia of each species. Animals (mainly production animals and horses) are normally euthanized in a separate room outside the necropsy hall and shall not be killed in a room where cadavers or parts of cadavers are present.

Production animals. Patients referred to the Production Animal Clinic must be examined on the farm by the referring veterinarian and the prognosis and transportability of the patients are discussed with the veterinarian and owner before transport. In the Clinic, invasive procedures are only performed upon indication and blood sampling from healthy animals is conducted with permission from NFSA. Evaluating general condition of the animal, prognosis and pain are important parts of clinical skills and a protocol for evaluation of pain has been developed as a tool for this. Patients seen by the Farm Service Unit are not treated or exposed to discomfort unless it is related to the medical condition of the patient. The examination is monitored by the veterinarian and in cases where several students examine the same patient, further examinations are stopped if there are signs that the additional examination is causing discomfort or pain to the animal. The Section for small ruminant research and herd health in Sandnes has a commercial sheep flock that is used for teaching purposes. All students working with these animals are instructed and followed up by the staff. The number of healthy animals used for teaching purposes is kept to a minimum sufficient to meet learning outcomes.

Small animals. Animal welfare is a focus in all teaching and clinical practice at the Small Animal Hospital, particularly in relation to treatment alternatives and the animal's clinical health condition, experience of discomfort/pain, and prognostic possibilities. The hospital has a pain scoring protocol used in daily practice and has permission from NFSA to take blood samples from healthy animals and administer sedation for ultrasound examinations for educational purposes. The hospital is a “gold standard cat-friendly clinic”.

Horses. Equine Hospital keep a small number of horses for educational purposes. The horses are kept according to Norwegian standards for horse welfare with dedicated staff handling them. Teaching procedures and use of these horses include only non-invasive procedures (handling, clinical examination etc) and a log is kept to avoid extensive use. The involvement of students in the examination and treatment of patients is closely supervised by senior staff, and practice on models and cadavers is required before students perform invasive procedures (injections, iv catheters, joint injections, rectal exams, etc). All use of horses for research purposes follows national and international guidelines, with necessary governmental permissions acquired for all projects.

Experimental biomedicine/ research animals. Staff using laboratory animals or fish in teaching are certified through courses in accordance with the requirements set by the Directive 2010/63/EU on the protection of animals used for scientific purposes. The care and use of laboratory animals and fish for teaching and experimental purposes are approved by NFSA, following the EU-regulations.

Student involvement. An Animal Welfare forum has recently been established. Veterinary students in clinical rotation, veterinary nurses, clinicians, and academic staff from the animal welfare group (PRODMED) will meet regularly to discuss animal welfare in NMBU-VET hospitals and clinics, both ethical issues related to specific patients in NMBU-VET hospitals and clinics and to practices and procedures in general. All species are included in the forum’s discussions. Students can also raise discussions on animal welfare in the clinics and questions on ethical standards are also included in the anonymous digital student evaluations in courses involving live animals.

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

Cadavers and organs for training in Anatomy are obtained from NMBU-VET clinics (dog, cat, horse, cattle, small ruminants, and pig), from abattoirs (organs) and from NMBU farm (calf, pig, goat, sheep). Poultry (hens and roosters) are purchased from Hvam high school, where all poultry go to destruction as a part of the routine management of their commercial production. Fish are obtained directly from fish farms. Cadavers of dogs are obtained fully fixed from a commercial company. The dogs are put in alcohol until used in teaching. Horse heads are flushed with formalin, the blood vessels are filled with colored latex and the heads are placed in alcohol until teaching. In addition, bones and skeletons, organs preserved in alcohol and plastinated organs are also available for use in teaching.

Cadavers for necropsy at the Pathology unit are mostly transported dead from the NMBU-VET hospitals and clinics, the section for experimental biomedicine (PRODMED) or from the ambulatory clinics to the necropsy facilities. Some animals are brought to the necropsy facilities alive and euthanized there. The cadavers or other material are stored in a refrigerated room if received the day before the necropsy is performed. After necropsy, the material is routinely destroyed in an alkaline hydrolysis system but can also be sent in a container for incineration, if necessary.

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

| Species | | 2021/2022 | 2020/2021 | 2019/2020 | Mean | |
|-------------------|----------|-----------|-----------|-----------|------|----------------------|
| Cattle | Cadavers | 3 | 2 | 2 | 2 | calves |
| | Organs | 164 | 127 | 127 | | |
| Small ruminants | Cadavers | 19 | 15 | 15 | 16 | goats |
| | Organs | 24 | 18 | 18 | | |
| Pigs | Cadavers | 6 | 4 | 4 | 5 | |
| | Organs | 229 | 159 | 159 | | |
| Companion animals | Cadavers | 38 | 34 | 34 | 32 | 25 dogs, 13 cats |
| | Organs | 19 | 15 | 15 | | |
| Equine | Cadavers | 0 | 0 | 0 | 0 | |
| | Organs | 40 | 31 | 31 | | |
| Poultry & rabbits | Cadavers | 57 | 49 | 45 | 50 | 38 hens, 19 roosters |
| | Organs | 0 | 0 | 0 | | |
| Aquatic animals | Cadavers | 38 | 34 | 30 | 34 | Atlantic salmon |
| | Organs | 0 | 0 | 0 | | |
| Exotic pets | Cadavers | 0 | 0 | 0 | 0 | |
| | Organs | 0 | 0 | 0 | | |
| Others (specify) | | | | | | |

Cattle organs: 19 fore and hind limbs, 24 hearts, 24 lungs, 2 livers, 19 kidneys, 19 udders, 19 penis, 19 uterus, 19 pregnant uterus. Small ruminant organs: 19 kidneys, 5 udders from sheep.

Pig organs: 24 hearts, 24 lungs, 24 trachea/larynx/pharynx/tongue, 19 stomachs, 19 intestines, 19 livers, 19 spleens, 19 kidneys, 5 udders, 19 penis, 19 uterus, 19 pregnant uterus.

Companion animal organs: brain from dog. Equine organs: 19 Heads, 20 fore and hind limbs, 1 penis

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

| Species | 2021/2022 | 2020/2021 | 2019/2020 | Mean |
|---|-----------|-----------|-----------|------|
| Cattle | 68 | 32 | 23 | 41 |
| Small ruminants | 280 | 4 | 0 | 95 |
| Pigs | 0 | 0 | 0 | 0 |
| Companion animals | 15 | 15 | 15 | 15 |
| Equine | 4 | 4 | 8 | 5.3 |
| Poultry & rabbits | 0 | 0* | 70 | 23 |
| Other (specify) | | | | |
| Rodents (mice, rats, laboratory animals***) | 0** | 70 | 140 | 70 |

Note. In Semester 1 in course VET350, students visit the University Farm (SHF) – animal production. This facility has 130 milking cows, 130 calves (<100kg), 60 heifers (<1year), 60 heifers (1-2years), 13 beef cows, 7 beef breed calves, 160 ewes, 85 goats, 5000 chickens, 60 sows, 130 piglets and 80 grower pigs.

Note. The number of cattle used for pre-clinical training were reduced in spring 2020 and spring 2021 because of covid-19 crisis.

Note. Companion animals are student/staff's dogs used for palpation training and physiology assessment in course VET354. No healthy animals are used in physiology laboratory courses.

*Rabbits. From 2020/2021, rabbits are removed from the laboratory animal course as rabbits are no longer held permanently in the new facilities at Campus Ås.

**Rodents. In Curriculum 2021 implemented in 2021/2022, the laboratory animal course has been moved to a later semester.

***Laboratory animals. The same animal is used for several students with a break for at least two weeks between handling to reduce stress.

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

| Species | 2021/2022 | 2020/2021 | 2019/2020 | Mean |
|--|-----------|-----------|-----------|------|
| Cattle | 124 | 99 | 65 | 96 |
| Small ruminants | 66 | 57 | 31 | 51 |
| Pigs | 98 | 127 | 82 | 102 |
| Companion animals | 6572 | 4814 | 5977 | 5788 |
| Equine | 1142 | 743 | 285 | 723 |
| Poultry & rabbits | 0 | 0 | 0 | 0 |
| Exotic pets (includes Rabbits, hamsters, guinea pigs, ferrets, cage birds) | 65 | 76 | 204 | 115 |
| Other (wildlife- sea birds) | 10 | 185 | 73 | 89 |

Note. The number of patients is reduced in 2019/2020 and 2020/2021 because of the covid-19 crisis.

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

| Species | 2021/2022 | 2020/2021 | 2019/2020 | Mean |
|----------------------|-----------|-----------|-----------|------|
| Cattle | 2123 | 2968 | 2546 | 2546 |
| Small ruminants | 538 | 375 | 457 | 457 |
| Pigs | 377 | 1136 | 2466 | 1326 |
| Companion animals | 0 | 0 | 0 | 0 |
| Equine | 91 | 138 | 124 | 118 |
| Poultry & rabbits | 1 | 0 | 0 | 0 |
| Exotic pets | 2 | 0 | 0 | 1 |
| Other (alpaca, lama) | 48 | 0 | 0 | 16 |

Note. For 2019/2020, Cattle and Small ruminant numbers are the average of 2020/2021 and 2021/2022. The numbers in the journal system used in 2019/2020 include clinical cases and routine pregnancy testing, AI and vaccinations. Journal system numbers for 2019/2020 are Cattle 4724 and Small ruminants 1624.

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

| Species | 2021/2022* | 2020/2021 | 2019/2020 | Mean |
|---|------------|-----------|-----------|------|
| Cattle | 94 | 97 | 99 | 97 |
| Small ruminants | 89 | 87 | 98 | 91 |
| Pigs | 79 | 90 | 97 | 89 |
| Companion animals | 42 | 47 | 4* | 31 |
| Equine | 62 | 72 | 50** | 61 |
| Poultry & rabbits | 0 | 0 | 0 | 0 |
| Exotic pets | 100 | 100 | 100 | 100 |
| Other (wild life-sea birds, alpaca, lama) | 100 | 100 | 100 | 100 |

Note. Cattle. All cattle cases listed in Table 5.1.3 are referrals and all cattle cases listed in Table 5.1.4 are first opinion patients.

*Companion animals: In 2019/2020, NMBU-VET changed journal systems from Profvet to ProVet. In the Profvet journal system, it is not possible to distinguish between first opinion and referral cases. The number 4% represents first opinion cases in the period 06.06-24.06, after the start of ProVet system and the end of semester.

**Equine: In 2019/2020, NMBU-VET changed journal systems from Profvet to ProVet. In the Profvet journal system, it is not possible to distinguish between first opinion and referral cases. The percentage of first opinion cases for 2019/2020 is estimated to ca. 50%.

Table 5.1.6. Cadavers[#] used in necropsy

| Species | 2021/2022 | 2020/2021 | 2019/2020 | Mean |
|--|-----------|-----------|-----------|------|
| Cattle | 92 | 47 | 43 | 61 |
| Small ruminants | 252 | 229 | 18* | 166 |
| Pigs | 100 | 22 | 41 | 54 |
| Companion animals | 129 | 103 | 161 | 131 |
| Equine | 87 | 47 | 13 | 49 |
| Poultry & rabbits** | 150 | 90 | 91 | 110 |
| Aquatic animals | 25 | 10*** | 80 | 38 |
| Exotic pets (deer, mouse, hamster, sparrow hawk) | 4 | 2 | 3 | 3 |
| Other (alpaca, fox, mink) | 5 | 0 | 1 | 2 |

[#] In addition to cadavers, organs are collected from an abattoir once a week and changes are discussed with students in the last three months before the examination in pathology in semester 8.

* Small ruminants. In spring 2020, the sheep course in production animal medicine that includes necropsies was cancelled because of covid-19 crisis and replaced with digital teaching.

** Poultry & rabbits: The only necropsies performed on rabbits were 1+0+3, respectively. For necropsy training on poultry, discarded carcasses from a degassed flock were used for teaching. These numbers were 198+180+175 and include a rooster, laying hen and chicken to each student and a broiler, if available. In approximately 50% of layers there were abnormal findings. For years 2020/2021 and 2019/2020, 50% of the numbers of poultry used are included in the table, i.e. 90 + 88. In 2021/2022 all broilers obtained were from dead on farm and all contained abnormal findings. For year 2021/2022, an estimate of 75% of poultry with abnormal findings is used, i.e. 149

*** Aquatic animals. Because of Covid-19 restrictions in autumn 2020, the necropsies of 10 fish were performed as online presentation.

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

| Species | 2021/2022* | 2020/2021 | 2019/2020 | Mean |
|-------------------|------------|-----------|-----------|------|
| Cattle | 77 | 77 | 62 | 72 |
| Small ruminants | 16 | 10 | 10 | 12 |
| Pigs | 36 | 25 | 30 | 30 |
| Companion animals | 0 | 0 | 0 | 0 |
| Equine | 0 | 0 | 0 | 0 |
| Poultry | 30 | 18 | 18 | 22 |
| Rabbits | 0 | 0 | 0 | 0 |
| Aquatic animals | 7 | 1 | 1 | 3 |
| Exotic pets* | 0 | 0 | 6 | 2 |
| Other (specify) | | | | |

* Exotic pets. Visits were cancelled in 2020 and 2021 due to Covid-19 restrictions. Digital replacement.

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

| Species | 2021/2022* | 2020/2021 | 2019/2020 | Mean |
|--------------------------|------------|-----------|-----------|------|
| Ruminant slaughterhouses | 3 | 0* | 3 | 2 |
| Pig slaughterhouses | 3 | 0* | 3 | 2 |
| Poultry slaughterhouses | 1 | 0* | 1 | 0.7 |
| Related premises** | | | | |
| Other (specify) | | | | |

* Cancelled due to covid restrictions in 2020/2021. These students received an initial digital replacement and a practical session with slaughterhouse material conducted at Campus Sandnes. In 2021/2022, the slaughterhouse visits included students from the previous year.

** The slaughterhouses include premises for the production, processing, and distribution.

Description of how (procedures) and by who (description of the committee structure) the number and variety of animals and material of animal origin for pre-clinical and clinical training, and the clinical services provided by the VEE are decided, communicated to staff, students and stakeholders, implemented, assessed and revised

In **pre-clinical teaching**, the number and variety of animals (live or organs and cadavers) are evaluated and decided by the course coordinator and teachers developing and teaching each course, based on availability, group sizes and intended learning outcome. The course coordinator and their department are responsible for obtaining the animals. The use of animals in teaching is subject to evaluation in the digital student evaluation and course evaluation reports. In pathology, the number of animals and species used in teaching are largely defined by referral from the Hospitals and Clinic. In addition to these clinical cases, discarded poultry carcasses and organs from abattoirs are used. If the number of animals available for necropsy decreases in general or for certain species, action is taken to enter an agreement with private clinics or farm herds for free necropsy of animals. For **clinical teaching**, the procedures and committees involved in determining the number and variety of animals are described under global strategy Standard 5.1.

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

Description of the organisation and management of the external sites (teaching farms, ...) and the involvement of students in their running (e.g. births, milking, feeding, ...)

Teaching Farms (SHF and Sandnes). Students have periods of practical training at the university farm (SHF). At morning sessions during their first year, students take part in feeding, handling and caring for healthy animals. More senior students serve as calving/lambing monitors at the University farms in Ås and at Sandnes (Section for small ruminant research and herd health, PRODMED), during these times they can always contact a clinician by phone for advice if necessary.

Fish farms. During the outplacement week in semester 8, students are taken through the production/value chain for Atlantic salmon; from brood fish to hatchery and hatchery management, grow out sites, and finally to the slaughterhouse. Practical teaching is performed under the supervision and guidance of academic staff from NMBU-VET and combined with input from field veterinarians with long experience in aquatic medicine.

FSQ & VPH. Meat inspection and practice with NFSA is described under Standard 3.5 External Practical Training.

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.

Description of how and by who the nursing care skills are implemented and taught to undergraduate students

Basic nursing needs in handling of animals in a safe way are taught as part of [Basic Animal Husbandry](#) in the first year (Curriculum 2021) and also in propedeutics within the course Introduction to Diagnostic work and Veterinary Public Health (Curriculum 2002). In the clinics, the students have responsibility for specific patients under the supervision and instruction of a clinician, this includes

nursing. The students also take part in the nursing of the patients during night duties, including feeding and walking dogs.

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

The students are allocated to groups of 4-7 students in the beginning of the semester. Depending on the activity, one or two student groups are working in the same clinical rotation (e.g. small animal surgery, ambulatory clinic, equine hospital, pathology, meat inspection). Within the rotations, each student group usually divides to work in smaller groups of 2-3 students. This is described in more detail under Standard 3.1.

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-murally and extra-murally)

A description of hands-on involvement of students in clinical procedures for the different species including pathology is described under Standard 3.1. Details of biosecurity procedures are provided under Standard 4.9.

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 rotations, there is extended use of discussions and presentations of clinical cases to encourage reading and a deeper understanding. Case presentations (Production Animal Clinic and Farm Services Unit) can be for small groups in the clinic or joint presentation for several groups of students and staff. In the Equine Hospital and Small Animal Hospital students attend morning rounds where they present their cases and seminars on specific topics. White board meetings involve students giving short presentations of their cases. The Equine Hospital conducts weekly clinical rounds.

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

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

Provet Cloud. The clinical departments, SPORTFAMED and PRODMED, have since 2020 been using a cloud based electronic patient record system, [Provet Cloud](#). Data from the previous system, Profvet, have been transferred to Provet Cloud. All students and clinical staff members have access to comprehensive patient records. The Provet system provides all information about the patients including laboratory tests, diagnostic imaging, information to the owners, and billing information. Diagnostic images are archived in PACS (Picture archiving and communication system), which is interfaced with Provet Cloud. PRODMED has an integration between Provet Cloud and government databases and applications for production animals. The students' use of Provet Cloud varies in the Hospitals and Clinic and has been described under Standard 3.1.

eLabJournal and Pathology. The electronic laboratory journal system (eLabJournal; also FileMaker) is available to all staff to record material of animal origin for research and laboratory services. For routine pathology, a journal system (BasamPro) is used to record each necropsy.

Comments on Area 5

Small animals. The relocation of NMBU-VET from its established practice area in Oslo to new facilities in a far less populated area surrounding Campus Ås was expected to result in a marked decline in patient access. The access to patients was also limited by the restrictions accompanying the Covid-19 pandemic and the resulting closure of Small Animal Hospital from 20 March 2020 until 18 May 2020. An overall decrease in small animal patients is not obvious in 2019/2020 because the reduced number of patients in spring 2020 is compensated for by an increased number of patients seen in the clinic in Oslo in the autumn of 2019. An outbreak of diarrhea in dogs increased case numbers. A decrease in patient numbers is most obvious in 2020/2021 where the combination of corona restrictions and closure of the clinic during the relocation in autumn 2020 reduced numbers and student access to clinical cases. Compensatory measures were implemented including keeping the clinic open of students in small groups, organizing access for students to external practices and teaching students in the Small Animal Hospital during the summer. A trend towards increasing small animal patient numbers be seen in 2021/2022. Measures are being considered to increase patient load if it proves insufficient for the number of students. Mandatory external practice as a supplement to the core clinical training and extending the teaching semester into the summer would both increase student exposure to clinical cases. The Small Animal Hospital also has recently made an agreement with a charity clinic ([Lisa klinikken](#)), allowing students supervised by NMBU-VET staff to receive clinical training at the charity clinic.

Horses. In Table 4.1.3, the number of horses seen in 2019/2020 was low principally because the Equine Hospital at the Adamstuen campus was closed from June 2018 because of recurrent outbreaks of *Salmonella*. Salmonellosis is a notifiable disease in all species in Norway, and restrictions are imposed by the authorities. Except for select policlinic cases, Equine Hospital did not recommence teaching on campus until the new Equine Hospital opened on Campus Ås in December 2020. To compensate for closure of the Equine Hospital due to *Salmonella* in 2019, access for students to clinical cases at external practices was organized at two large private hospitals with a caseload similar to the Equine Hospital. In addition, the Equine Hospital's ambulatory service was operational from November 2019, providing ambulatory visits where students participated. These compensatory measures were continued during the period of Covid-19 restrictions. The number of clinical cases seen by students in the external practices as compensation for core clinical training was not documented. The opening of the Equine Hospital at Campus Ås has been accompanied by an increasing number of clinical cases. The increasing caseload can be seen in the numbers for 2021/2022 (Table 4.1.3) and numbers from 2022/2023 show a 50% increase in total number of consultations compared with the average number for the period 2010-2018 at Campus Adamstuen.

Production animals. The Production Animal Clinic has a stable caseload but there is a continuous focus on recruitment of cases to avoid any reduction. The figures for production animals seen extramurally (table 5.1.4) do not fully reflect the caseload over time due to differences in how routine herd health procedures are recorded before and after the transition to Provet Cloud in March 2020. The Farm Service Unit has its main practice area north of Oslo and is working to expand the practice closer to Campus Ås.

Necropsies. The number of small animal necropsies has decreased slightly, and there are discussions with the Small Animal Hospital and private clinics on how to encourage owners to

allow their pet animals to be necropsied. The decrease in necropsies is particularly obvious for exotic animals as there are relatively few exotic clinical cases. There is no access to poultry clinical cases for necropsy. To compensate for the lack of poultry cases, discarded poultry carcasses (approximately 200) are obtained to train students in performing necropsy on poultry.

Time for self-study and reflection in the clinics. Measures have been taken to reduce the amount of organised teaching in the Curriculum 2002 with the goal to counter curriculum overload and increase time available for self-study. Sufficient time for self-study and deeper learning is also an aim in Curriculum 2021 but this goal must be balanced with ensuring sufficient time for practical and clinical training.

Suggestions for improvement in Area 5

To maintain the quality of clinical teaching, continued focus should be given to student access to sufficient clinical cases in all veterinary species. An increase in patient load for small animals should be prioritize particularly if student numbers are to be increased. Measures should be implemented to increase the number of necropsies available for teaching purposes. The relocation and expansion of the practice area for the Farm Service Unit should be continued.

The electronic journal system should allow clinical cases seen by students to be identified. There should be a better integration of diagnostic laboratory services and the journal system.

The development of Curriculum 2021 should incorporate improved routines to allow students to spend time to deepen their understanding of clinical cases and their management and reflect upon their own learning process to foster lifelong learning.

Area 6. Learning resources

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

Description of the general strategy of the VEE on learning resources

The general strategy of NMBU-VET on learning resources is consistent with the [University's learning philosophy](#) to make adequate learning resources readily available to veterinary students so that learning can be a student active process that promotes reflection and independence. Learning resources are provided to enable students to take responsibility for and manage their own learning.

Digitalisation is a priority area in the [strategy of NMBU](#). NMBU-VET has undertaken a digitalisation of learning resources to encompass student-active forms of learning, alternative forms of feedback and assessment and strengthening of pedagogical competence in relation digital technology in teaching. The main e-learning platform for students is **Canvas**, which is a learning and teaching worktool and an information channel. Many of the learning resources of the NMBU Library are available on wireless internet on and off campus. An increasingly important learning resource is the use of models in training students in clinical procedures prior to and during their clinical training. Models are a central element in the Skills labs at NMBU-VET.

The administrative support systems for teaching are digitalized. The timetable system for all courses is **TimeEdit**. The course planning system used by all course coordinators is **EPN**. The system for personal information for students including receiving study results is **Studentweb** and the system for teaching staff for student information including the registration of study results is **Fagpersonweb**. Digital systems for administering examinations **WISEflow** (general) and **Q-percom** (OSCE examinations) are in use. A **QR-code** system for electronic registration in relation to tracing of infection has been established. **Teams** and **Zoom** are digital tools used for meetings and the recording and streaming of teaching.

The digitalisation of learning resources contributes to the strategy for life-long learning by facilitating access to continuing and further education courses for graduates in different parts of the country (SEVU). Life-long learning is promoted among alumni by increased access to learning resources and courses and results of research through the policy of open-source publication.

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

Academic and Research Administration holds information meetings with students at the beginning of each semester where relevant directions on use of learning resources are given. Teaching in conducting literature searches and use of databases is given VET320 (Curriculum 2002) and the profession threads (VET352) in Curriculum 2021.

All staff and students at NMBU have access to the Canvas LMS (Learning Management System). All courses are given their own Canvas room that the teachers and the students in that course have access to and the Canvas room is their main virtual meeting place. Here the students can hand in submissions, do quizzes, get assessments, join in online discussions, review learning resources and contact their teacher. The teacher(s) can publish different types of content, including videos, readings, links, pictures, text, audio files and presentations. The e-learning Canvas has been in use for several years and the teaching staff are very familiar with its use. Academic and Research Administration has its own Canvas super user, who assists both staff and students in using Canvas. NMBU Department of Academic Affairs also has staff that are experts, both in the practical use of Canvas and the technical aspects of integrations and setup. Additionally, there are a large amount of online user guides and tips provided by Instructure, the issuer of [Canvas](#), at their online community.

It is NMBU Department of Academic Affairs that decides the digital learning resources the university uses, in cooperation with the other institutions for higher education in Norway. This work is coordinated by Sikt - Norwegian Agency for Shared Services in Education and Research. Sikt also delivers a syllabus list system, which is the national open archive for academic and research-related material, and the system for sharing digital learning resources. NMBU University Library participates in national collaboration for open research data repository. SIKT is responsible for the consortia's agreements with the various international publishers. NMBU University Library participates in these consortia.

All teaching staff at NMBU may contact the [Learningcenter](#) (in Norwegian) for assistance in developing their teaching or creating new learning materials. The Learning Center provides facilities for video and podcast recordings, as well as guidance on pedagogical topics such as assessment methods, teaching with information and communication technology, constructive alignment etc. The Learning Center also organizes arenas, Pedprat and NMBU Learning Festival, where teaching staff can discuss and exchange experience on teaching. The [NMBU Writing Centre](#) offers guidance in academic writing, and is open for all students at NMBU, regardless of what educational level they are at. The Writing Centre offers both scheduled appointments and drop-in.

NMBU-VET has participated in several innovation projects funded internally or externally to develop learning resources including e-Clinic an electronic game-based digital veterinary clinic; Plastic Pluto using plastinated organs in teaching anatomy; VetRepos, developing progress testing in European veterinary schools.

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

Relevant books and e-books are purchased upon request by staff or students. The University Library also holds one or two copies of all books on the students' reading lists. The Faculty/Subject Librarians and the library's Collection Development Team also use newsletters from publishers to acquire relevant new titles for the library collection. Staff at NMBU-VET are consulted before acquisition or cancellation of subscription to databases and journals. Updates on new acquisitions can be found on the library's website.

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

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

Brief description of the main library of the VEE:

NMBU University Library is a unit under the Pro-rector for research, innovation, and external collaboration. NMBU's development plan for the University Library 2019-2023 prioritizes the following service areas: education and learning, research support, open research and innovation, development and management of knowledge sources and the library as a common arena for students and staff.

a) staff (FTE) and qualifications The library is led by the library director and has 18 (FTE 17.6) permanent positions and 7 committed student assistants. 16 employees have bachelor's (8), master's (7) and PhD (1) degrees. Two (2) employees have office and archival education. The student assistants are all studying at NMBU.

b) opening hours and days The university library is open 0800-2000 Monday to Thursday and 0800-1800 Friday.

c) annual budget The library's total budget is NOK 34,000,000.

d) facilities: location in the campus, global space, number of rooms, number of seats NMBU University Library has two library units on Campus Ås. These are the Sørhellinga Library and the Hippocampus Building Library. The university library is open and available to all students and staff at NMBU. All employees in the library have permanent office space at the Hippocampus Building Library and most are on duty at the Sørhellinga Library. The university library's total area including magazines is 2,185 square meters and the library has a total of 160 seats.

e) equipment: number of computers, number of electrical connections for portable PC The university library has 6 terminals for information searches and automated loan services. The entire university has wireless internet for students and staff, and there is access to electricity in all premises.

f) softwares available for bibliographical search The NMBU University Library offers a variety of citation and full text. Additionally, the Library Discovery System can be used to search for journal articles, books, e-books and other publications. The Discovery System also gives access to interlibrary loan from other academic libraries. The bibliographic databases can be accessed off campus by using NMBU login credentials.

Brief description of the subsidiary libraries (if any)

The Sandnes campus of NMBU-VET at Høyland in Rogaland County has a large book collection with relevant literature which is available for the staff and the students while they are there.

Brief 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)

IT-facilities are maintained by the NMBU-IT department in collaboration with NMBU-VET and students. There are currently 49 employees in the NMBU-IT department, which is divided into 4 sections for staff, support, systems, and infrastructure. Access to IT-services and other electronic learning resources is available both on and off campus. Some services are hosted from external cloud services and access is granted using authentication against one of our user databases. Services hosted on campus (on premise) are accessible using secure connections through VPN or similar transport protocols. All buildings have extensive Wi-Fi-coverage for guests, employees, and students.

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 students and staff at NMBU have access to electronic learning resources through HomeOffice or VPN and signing in with NMBU login credentials. The library's overall resources for digital services and knowledge sources are available on the library's [website](#).

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

Brief description of:

- a) the number of veterinary books and periodicals**
- b) the number of veterinary e-books and e-periodicals**
- c) the number of other (e)books and (e)periodicals**

The table below shows key numbers of available resources at the NMBU University Library in 2021:

| | |
|-------------------------------------|---------|
| Total number of printed books | 124 297 |
| Total number of e-books | 297 431 |
| Total number of printed periodicals | 15 232 |
| Total number of e-periodicals | 12 991 |
| Total number of databases | 70 |

A free-text search in the library catalogue (using the following keywords: veterinary, animal husbandry, pet medicine, animal welfare, livestock, domestic animals, animal medicine, fish), shows the available resources within veterinary medicine and animal husbandry:

| | |
|--------------------------------|------|
| Veterinary printed books | 4687 |
| Veterinary printed periodicals | 290 |
| Veterinary e-books | 4358 |
| Veterinary e-periodicals | 403 |

d) 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)

The printed resources can be accessed at the NMBU University Library. The e-resources can be accessed on-campus or off-campus using HomeOffice or VPN and signing in with NMBU login credentials. Two of the librarians have a role as subject librarians collaborating with the veterinary staff. They are specialized in medical databases and hold search-courses for the students integrated in their studies (VET352). The university library has 5 academic teams. These are: Research and innovation support; Education support; System development and digital services; Collection development; and public services and events. The education support team consists of 7 people and organizes the library's courses and training.

e) the organisation and supervision of the skill labs.

The students have access to two clinical skills labs (training clinics). A clinical skills lab in the Small Animal Hospital is accessible to students who are in the clinics and is used in the teaching of basic practical skills on clinical models. Students have access to the room via their student card, but to access the models and equipment, the students need to register and borrow an access card from the reception of the Small Animal Hospital. The skills lab is also open with a supervisor present every Wednesday from 17:00 to 19:00. Students can also practice on their own initiative during daytime. The second clinical Skills lab is in the Production Animal Clinic with models for use in training in obstetrics, reproduction, hoof trimming and surgery. This skills lab is used in the organised teaching, supervised by the teaching staff, and is not open for students outside ordinary working hours. NMBU-VET also has a video project where clinical procedures are filmed to standardize procedures and help the students prepare for the clinical rotations as a supplement to the skills labs.

Comments on Area 6

The students and staff at NMBU-VET have good access to learning resources with modern buildings with full digital access and support. The localization of the NMBU library in the Hippocampus Building, along with NMBU's Learning Center, NMBU's Writing Centre and much of NMBU-IT is a considerable resource readily available to students and staff. The University Library is considering introducing a staffless library on campus after 8 p.m.

The facilities for and access to models have improved after the relocation to Campus Ås. The use of models for clinical training in procedures before procedures are performed on live animals is preferred whenever possible. Models are also useful for the testing of clinical procedures in OSCE examinations. The aim is to integrate the use of models even more into the organized clinical practical teaching as well as having models available for "evening events" and the student's self-study.

Suggestions for improvement in Area 6

The skills labs should be used more systematically in organized teaching and formative assessment of clinical skills and procedures. The project for videoing clinical procedures should continue and students should be encouraged to use this learning resource.

Area 7. Student admission, progression and welfare

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

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

Formal cooperations with other VEEs must also be clearly advertised.

Description of how the educational programmes, learning outcomes, admission procedures and requirements for national and foreign students, progression and certification, tuition fees, academic calendar, collaborations with other VEEs, etc. are advertised to prospective students

All information concerning enrolment into the NMBU education is published at the [NMBU admission webpages](#) or [The Norwegian Universities and Colleges Admission Service \(NUCAS\)](#). Specific information about admission requirements and procedures for the veterinary program can be found on this [website](#) (in Norwegian). Learning outcomes are described in the specific course information [in EPN](#) and information regarding the educational program, progression, certification and collaborations with other VEEs in respect to student exchange can be found on the webpage for the veterinary program.

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 NMBU-VET

| Type of students | 2021 | 2020 | 2019 | Mean |
|-------------------|------|------|------|------|
| Standard students | 100 | 95 | 85 | 93.3 |
| Full fee students | 0 | 0 | 0 | 0 |
| Total | 100 | 95 | 85 | 93.3 |

Table 7.2.2. Number of veterinary undergraduate students registered at NMBU-VET

| Year of programme | 2021 | 2020 | 2019 | Mean |
|-------------------|------|------|------|------|
| First year | 90 | 88 | 77 | 85 |
| Second year | 88 | 72 | 66 | 75 |
| Third year | 63 | 63 | 51 | 59 |
| Fourth year | 62 | 57 | 62 | 60 |
| Fifth year | 56 | 61 | 69 | 62 |
| Sixth year | 63 | 67 | 74 | 68 |
| Total | 422 | 408 | 399 | 410 |

Table 7.2.3. Number of veterinary students graduating annually

| Type of students | 2021 | 2020 | 2019 | Mean |
|-------------------|------|------|------|------|
| Standard students | 63 | 65 | 74 | 67 |
| Full fee students | 0 | 0 | 0 | 0 |
| Total | 63 | 65 | 74 | 67 |

Table 7.2.4. Average duration of veterinary studies

| Duration | % of the students who graduated on 2021 (number) |
|-------------------|--|
| + 0* | 87.3 % (55) |
| + 1 year | 11 % (7) |
| + 2 years | 1.6 % (1) |
| + 3 years or more | 0 |

* The total duration of the studies matches the minimum number of years of the programme at NMBU-VET 5.5 years

Table 7.2.5. Number of postgraduate students registered at NMBU-VET

| Programmes | 2021 | 2020 | 2019 | Mean |
|------------------|------|------|------|------|
| Interns | 15 | 9 | 3 | 7 |
| Residents | 9.5 | 8.5 | 11 | 9.7 |
| PhD students* | 108 | 124 | 125 | 119 |
| Others (specify) | 0 | 0 | 0 | 0 |

* Includes both internal PhD candidates employed by NMBU (51 in 2021), external PhD candidates (36 in 2021) as well former internal PhD candidates whose contract has expired (21 in 2021).

Standard 7.3: The selection and progression criteria must be clearly defined, consistent, and defensible, be free of discrimination or bias, and take into account of the fact that students are admitted with a view to their entry to the veterinary profession in due course.

The VEE must regularly review and reflect on the selection processes to ensure they are appropriate for students to complete the programme successfully. If the selection processes are decided by another authority, the latter must regularly receive feedback from the VEE. Adequate training (including periodic refresher training) must be provided for those involved in the selection process to ensure applicants are evaluated fairly and consistently.

Description of the admission procedures for standard students:

a) selection criteria

The Ministry of Education and Research establishes the [rules for admission to educational programmes](#). Applicants for Veterinary Medicine must meet the minimum entrance requirements for higher education in Norway, which include documented proficiency in Norwegian and English. In addition, special requirements must be met in the subjects Chemistry and Mathematics.

Admission is highly competitive. Applicants who meet the minimum entrance requirements are ranked according to national regulations. 50% of students are admitted in the “First Diploma Quota” where applicants 21 years or younger are ranked according to the grades of their First Passed Diploma and additional points for certain examinations in sciences or languages. One place is given in the Sami quota to the best qualified applicant of the Sami minority and the remaining students are admitted within the “Ordinary quota” where the applicants’ points are based

on First passed diploma, improved grades, additional points for age, military service, higher education, and [folk high school](#). In both quota, men are given extra points for underrepresented gender.

The Norwegian Universities and Colleges Admission Service ([NUCAS](#)) coordinates the admission process. All applicants must apply online in the search portal, available from 1 February on. The application deadline is 15 April. All admission requirements must be met and documented by 1 July.

EU- citizens and other international applicants are eligible for admission upon completion of the secondary school leaving certificate that provides the basis for admission to university studies in their home country, in addition to documented proficiency in Norwegian and English and special requirements in Chemistry and Mathematics. Entrance requirements may include one or two years of university studies in addition to upper secondary school. Exact requirements and how to calculate points are stated for each country at [NUCAS](#). As Veterinary medicine is taught in Norwegian, proficiency in Norwegian at an advanced level (B2/C1) is an admission requirement, and information is available in Norwegian only.

Veterinarians from non-EU countries who are not authorized by NFSA, may apply to NMBU-VET to take additional courses that qualify for authorization. These additional courses take 2 years. NMBU-VET requires that the veterinary diploma from the foreign applicant is approved by NOKUT as insurance against false documentation. NMBU-VET also requires that the applicants have a B or higher grade in Norwegian. The number of veterinarians from abroad studying for authorization in Norway in the last 3 academic years were 8 in 2021, 6 in 2020 and 4 in 2019.

b) policy for disable and ill students

All colleges and universities in Norway are by law obliged to facilitate the education of people with disabilities as far as possible. Disease, impaired function, learning difficulties, short period of residence in Norway, being exposed to accidents or other unforeseen events are reasons that may give the right to apply for a special assessment for admission to higher education in Norway through NUCAS. Persons under 25 years of age and who can document that they, due to permanent illness or functional impairment, are unable to fulfil the requirement for Higher Education Entrance Qualification in Norway (“*generell studiekompetanse*”) can apply for exemption. The requirement for facilitation during education applies to both universal design and individual adaptation.

c) composition and training of the selection committee

There is no selection committee for admission to study veterinary medicine at NMBU.

d) appeal process

Applicants have the right to file a complaint if they think a mistake has been made in the application process, according to the [Norwegian Administration Act](#). An appeals guide is included in all letters to the applicant. The applicant must complain as soon as possible, and no later than three weeks after receiving the reply. NMBU-VET is usually the case manager, or it can in some cases be NUCAS. If the decision is not changed, the applicant has the right to submit a new complaint to the National Board of Appeal.

e) advertisement of the criteria and transparency of the procedures

This has been covered in a) above about selection criteria and NUCAS and under Standard 7.1.

Description of the admission procedures for full fee students (if different from standard students)

NMBU-VET does not admit full fee-paying students.

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

In the academic year 2019, NMBU-VET was localised in the buildings and facilities on Campus Adamstuen and the study programme in veterinary medicine had 70 students per year/class. With the construction of new buildings on Campus Ås, the Ministry of Education granted funding for 20 additional students from 2020 and an increased number of veterinary students was admitted from autumn 2020 (see Table 7.2.1). Further description of the process is given under Standard 7.5.

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

Stakeholders are concerned that the coverage of veterinarians in parts of Norway is inadequate. The Ministry of Agriculture and Food established a working group in the autumn of 2022 to review access to veterinary services in Norway. The [report](#) was completed in March 2023. The report suggested increasing the educational capacity in the veterinary medicine program at NMBU. The student capacity in veterinary medicine is therefore currently under investigation, whether it can be increased from 90 to 120 students in 2024. A statement from the authorities on this has not been received.

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

Description of the policies and procedures dedicated to applicants with disabilities

By Norwegian law, applicants with disabilities are treated on a par with all other applicants. The ministerial order on examinations permits the university to adapt examination forms for students with disabilities such as dyslexia as well as students with mental or physical disabilities, as long as the academic level of the examination is not lowered.

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.

Description of:

a) the progression criteria and procedures for all students

A student progresses from one course to the next by producing credits when all study requirements/compulsory teaching is approved and the examination for the course is passed. After the continuation period in August, a student must have sufficient credit production from completed courses to be allowed to continue to the next course in the curriculum.

Students are granted the right to study veterinary medicine at NMBU-VET for up to eight years. Legal leave such as maternity leave is added to this period. Students have the right to three examination attempts per examination. If the student achieves a "failure" in the same examination on three consecutive attempts, the right to study veterinary medicine is lost. The student has the right to apply for a fourth attempt, which may be granted by the Dean or a delegated person (Head of teaching). These decisions may be appealed to the NMBU Board of Appeals.

If a student fails to attend an examination, fails to attend compulsory teaching, fails to have contact with the supervisor and does not respond to inquiries from Academic and Research Administration or course coordinator for a period of 3 months, the student is considered to have interrupted their study and loses the right to study.

b) the remediation and support for students who do not perform adequately

In May/June, every student that has failed a final course examination is advised in a letter from Academic and Research Administration of the consequences of not achieving the required production of credits after the retake period in August. The student is also invited to a counselling meeting at Academic and Research Administration. If a student does not pass the retake examination and is not allowed to continue to the next year of study, the student must have a meeting with Academic and Research Administration. If the student applies for exemption from the progression criteria, the student must also meet the Head of Teaching and explain why the academic requirements (credit production) should be waived, to continue in the next year. If a student is unable to follow the expected progression, a new education plan is made for the student. If necessary, the supervisor at NMBU-VET informs the student about the welfare support and health care at SiÅs.

c) the advertisement to students and transparency of these criteria/procedures

The progression criteria and procedures are available for all students in the curriculum description for their academic year. The criteria and procedures for student progression are published on the NMBU website. It is the student's responsibility to familiarize themselves with the current regulations at NMBU which can be found on this [website](#).

Description of the rate and main causes of attrition

The attrition rate is low at NMBU-VET. Most students (87%) complete their degree within the minimum time (5.5 years). A drop out survey conducted in 2013 found no dominant reason for failures to complete their studies. Illness, study problems and wrong choices and combination of these were most common reasons given in the 2013 survey and experience indicates that these reasons are still the most common cause for failures to complete studies. Due to General Data Protection Regulations, no recent survey has been conducted on causes of attrition.

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

As described under Standard 7.3, The Ministry of Education and Research establishes the rules for admission to educational programmes. The Dean decides the exact number of admissions, following annual estimations by NMBU-VET of student dropouts and admits a correspondingly slightly higher number of students to ensure that after the first year there are still 90 active students in the cohort. The progression criteria and procedures are decided and adopted by VET-SU and are revised annually. The University's services to students and its duty to quality assurance are both mandated in legislation and incorporated into the university's routines and quality reports, which are revised annually.

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

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

Description of the mechanisms for the exclusion of students

NMBU has guidelines that clearly present the concept of cheating and the possible consequences for students who are guilty of cheating or other censurable acts. All cases of possible cheating or other misconduct can in principle be met with expulsion in addition to cancellation of academic performance. The guidelines can be read [here](#).

The progression criteria for the Veterinary medicine program are explained under Standard 7.5, which also describes the mechanisms for exclusion of students who do not follow the progression criteria.

Description of the appeal processes

The webpages of [NMBU](#) offer a detailed description of how students proceed with an appeal, and how the mechanisms for resolution of student grievances are, in accordance with the Act relating to Universities and University Colleges.

Students may request an explanation of an examination grade given within 1 week from the publication of the grade in StudentWeb. Students are informed by email when examination grades are available in StudentWeb. It is recommended that students request an explanation of a grade before they decide whether to appeal the grade. Explanations are normally given within 2 weeks of a request and may be either written or oral.

Appeals must be submitted within 3 weeks of publication of the grade. The student appeals a grade in StudentWeb. A new assessment of written work is performed by a new set of internal and external examiners and the outcome of the appeal is processed within a month. The grade awarded as a result of the new assessment may not be appealed but an explanation may be requested. Students can appeal formal errors and individual administrative decisions, i.e., decisions that apply to the rights or duties of one or more specific individual.

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

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

Description of the services available for students (i.e. registration, teaching administration, mentoring and tutoring, career advice, listening and counselling, assistance in case of illness, impairment and disability, clubs and organisations, ...)

At the start of study, students are informed orally and given written information about being a student at NMBU. Students have their own mentor programmes and many social activities for the new students. Academic and Research Administration informs about the curriculum, regulations and the student welfare organization for all students on Ås campus (SiÅs) and practices an “open door” policy. Information meetings are also given later in the study organized through Academic and Research Administration. NMBU-VET has an international adviser who takes special care of students going on exchange or international students who come to NMBU. The Center for Further and Continuing Education (SEVU), Academic and Research Administration and associations for veterinarians and veterinary nurses organize a career day at NMBU. NMBU also has a Career Center that offers career counselling to help students and PhD candidates in questions related to career and job seeking.

Facilities for special needs students. NMBU-VET as far as possible strives to make necessary arrangements for students with disabilities or special needs, whether it is due to visual impairment, hearing impairment, reading, and writing difficulties, asthma, allergies, anxiety, chronic illness or other reasons. This includes facilitation both during the study period and/or examinations.

Student ombudsman. The student ombudsman at NMBU works with students’ rights. It is free of charge, without obligation service. The ombudsman is bound by professional secrecy and provides impartial legal counselling related to academic life including whistleblowing and the reporting of censurable conditions.

SiÅs – Student welfare organization. SiÅs is the welfare association for students at NMBU. SiÅs is responsible for student accommodation, international guest accommodation, sport facilities, the bookshop, print and copy services, cafeterias / restaurant and the rental of meeting and function rooms.

Student Life Coordinator. The student life coordinator works to increase well-being and inclusion, and to reduce the feeling of loneliness among students and functions as a hub in the collaboration between NMBU, the Student Board, the Health Center for Youth and Students and SiÅs, regarding the psychosocial life of NMBU students.

Sport and Leisure Facilities. NMBU has a football and sports field and a large indoor sports facility. The university is located in close proximity to both a ski track and a national rowing facility. The Student Union (Samfunnet) is a large facility offering students a cafeteria, bar and numerous rooms that students can use for student activities, such as concerts and dances.

Student Associations. There are 80 different associations and clubs offered at NMBU. Students

are encouraged to pursue their passions and can apply for funding to create their own club or association if they cannot already find it among those currently available.

Description of the mechanisms for resolution of student grievances

Students can appeal the given grade of results in written examinations, formal errors in examination and individual administrative decisions and the mechanisms are described on NMBU webpages at the link provided under Standard 7.6. Other student grievances relating to administrative decisions or psycho-social grievance are resolved through direct contact with Academic and Research Administration and/or the health and welfare services for students at NMBU described above, such as the student ombudsman.

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

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

NMBU depends on active and involved students who offer constructive feedback on teaching, supervision, courses and programmes. Students' role in the quality assurance of education is described on [NMBU's webpages](#) (in Norwegian).

All courses are evaluated by students each time they are offered. Students participate both in evaluation offered during the course and in an evaluation (digital temperature feedback) offered by Academic and Research Administration after the course. After the course is completed, a course reference group of students meets with the course coordinator to evaluate the course. The course coordinator prepares a course report based on these assessments and the report is submitted to VET-SU. The course reports are available online. There are student representatives on NMBU-VET Board, VET-SU, VET-FU, and VET-PhD. In addition to course surveys, students participate in national study barometer surveys for NOKUT.

Other channels providing opportunities for students to voice their needs or complaints include the whistleblowing portal at NMBU, Speak-up. NMBU-VET's student council, VET-SR, has regular meetings with NMBU-VET management and students elect representatives to faculty and university councils and committees.

Comments on Area 7

The Covid-19 crisis caused abrupt changes in teaching and examination forms for veterinary education at NMBU-VET. There were negative consequences for students. The Study QA Report for 2019-2020 documents that the student failure rate went up, as did the number of complaints on examinations while student well-being and motivation went down. Overall, students were satisfied with the efforts made to deliver teaching under the restricted conditions of the Covid-19 crisis.

The abrupt changes in teaching provoked by the confrontation with the Covid-19 crisis introduced alternative teaching and examination approaches at NMBU-VET. A future increase in the number of students at NMBU-VET may benefit from the experience gained with compensatory measures under the Covid-19 crisis.

The Covid-19 crisis laid bare the concerns and worries of both students and staff about preparedness for professional life and attainment of Day One Competences. This experience has been carried into work developing Curriculum 2021 and has given focus to strengthening student self – confidence and preparing them for work life. An appreciation of the importance of lifelong learning, an awareness of continuing education and professional networks and the ability to guide their own self-study will contribute to the self-confidence of veterinarians entering professional life.

A Norwegian public inquiry (NOU 2022:17) proposes to change the admissions systems of Norwegian universities. It opens the way for universities to be able to choose the best candidates (based on characteristics) among the best qualified applicants (based on grades). It has not been decided whether this will be introduced into Norwegian universities and NMBU-VET currently is not allowed to set specific admissions criteria other than grades and specific requirements for subjects such as chemistry and mathematics. There are special admission criteria for males because of the great imbalance in gender seen among veterinary students in Norway. NMBU-VET launched a social-media campaign promoting veterinary medicine with male role-models in the spring of 2023.

Suggestions for improvement in Area 7

There should be an increased focus on mastering and building professional confidence, psychological health, and preparation for professional life. Psychological health and selfcare should be given an increased focus in Curriculum 2021.

The delivery of Day One Competences and the suitability of admitted students should be given consideration in discussions of increased student intake.

Area 8. Student assessment

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

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

VET-SU is responsible for the assessment methods for the whole study program both in Curriculum 2002 and Curriculum 2021. VET-SU handles matters related to assessment methods to ensure variation in assessment methods and alignment between learning outcome, learning activities and assessment. Student assessment procedures are designed to measure the achievement of the intended learning outcomes including Day One Competences. Constructive alignment is an outcomes-based approach to teaching in which the intended learning outcomes are defined before teaching takes place. Teaching and assessment methods are then designed to best achieve those outcomes and to assess the standard at which they have been achieved. Compulsory attendance that requires active participation is a supplement to examinations to ensure skills and general competence are acquired when this cannot be directly tested in written or oral examinations. Learning outcomes related to knowledge objectives are tested in each individual course.

Description of the specific methodologies for assessing the acquisition of:

- a) theoretical knowledge**
- b) pre-clinical practical skills**
- c) clinical practical skills**

Assessment methods in the veterinary curriculum

There is a mix between written and oral summative examinations that test knowledge. Formative course tests on Canvas that must be approved are used in both curriculums currently taught at NMBU-VET. There are also requirements for compulsory attendance and various activities during the courses, which must be approved. These can be case presentations, laboratory courses, dissection, reflection notes, peer evaluation, reports and group work and rotations with live animals that require active participation and approval. This range of assessment activities ensures that students acquire skills and general competences in line with learning outcomes. For clinical courses, a combination of OSCE, digital examination and clinical examination is planned in Curriculum 2021 and there will be an increased focus on systematic formative assessments.

In Curriculum 2002, examinations are placed at the end of each course (block) in the first part of the curriculum. These are mostly written examinations and to some extent oral examinations. Often the written examinations are combinations of short answer, multiple choice and essay questions. Several courses also have written examinations in the middle of a course. The final summative examination may then be a major written examination or an oral examination. After 9th semester, there is a “long case”, which is a clinical examination in production animal medicine that tests knowledge and ability for clinical diagnosis and reasoning. In small animal and equine medicine, there is a multiple-choice/short-answer examination that tests knowledge and clinical reasoning as well as an OSCE examination that tests skills. Together, these three examinations test various aspects related to clinical competence. There is a separate approval for the clinical rotations. All

clinical rotations must be approved before the students are allowed to take their final clinical examinations.

Students who have chosen the project-specific differentiation track have to write a thesis at Master's level (40 ECTS) and deliver a presentation and discussion with examiners. In the other differentiation tracks, there is a graduate thesis of 15 or 20 ECTS and the students must give a presentation of the thesis work for the thesis to be passed.

d) 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, ...)

In Curriculum 2021, the students are introduced to the topic teamwork in the first week of the semester. This is the start of [VET352](#) Professional studies, which is a Thread that is to run through the whole study and includes cooperation, communication, and professional ethics. Before clinical rotations begin, a 1-week course in clinical communication is planned, including lectures, group discussions and role play. Practical training in clinical communication will take place in the clinical rotations. In Curriculum 2002, a course in clinical communication is offered in the last year in the course [VET 342](#) Clinical Communication, Mental Health, and Clinic Management.

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

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

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

Examinations, marking and appeals procedures are regulated under the Act on Universities and University colleges, regulations on studies at NMBU and internal guidelines and rules. General information and rules are provided on [NMBU.no](#) for both students, teachers, and examiners. Grading can be either pass/fail or A-F equivalent to the ECTS scale. The setting of examination grades is based on defined criteria and marking must take place in line with the description of these individual grade characters.

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

In the individual course descriptions that are revised between February and April and adopted by VET-SU for the coming academic year, a detailed description of the learning outcomes, content, form of assessment, duration of the examination, assessment criteria and special requirements to be able to complete the examination and rules for the examination and grades are given. The revised course descriptions ([EPN](#)) are published on the internet every summer.

The date and time for the examination and continuation examination in the semester schedule are published on Canvas by June 1st for the following academic year. The students are given the opportunity to influence the dates through consultation input to the semester plan. When the students approve their education plan in the autumn, they are registered for the examination. They then also receive the dates electronically on Studentweb.

Canvas contains detailed information related to the examinations and learning activities. Students have access to previous written examinations on Canvas (except multiple-choice examinations where the questions can be reused). The students also have the right to see their examination papers, any examination guidelines and to receive an explanation of their examination result. Some blocks/courses give students the opportunity to take a test examination, and the examiners explain how they would assess this examination. In some courses, there are information meetings to prepare the students as best as possible.

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

With the awarding of a passing grade for a completed course, a student receives credits. As described under Standard 7.5, a student must have sufficient credit production from completed courses after the continuation period in August to be allowed to continue to the next year of study in the curriculum. Further detailed descriptions of the examinations and the requirements to pass the examinations are available in the curriculum description and the course planning system (EPN) at NMBU.no.

Examiner's work and grading

Grading can be either pass/fail or A-F equivalent to the [ECTS scale](#). NMBU-VET always uses more than one examiner, with at least one external and one internal examiner. The Head of Teaching approves the external examiners on delegation from the Dean, in line with regulations' requirements for competence of external examiners. When an examination is of a pass/fail, multiple-choice format, an external examiner approves the multiple-choice questions given. Regulations also require examiner guidelines for each examination. The examiners can raise the grade if a mistake has been made. External examiners may also participate in examiner meetings to discuss grading for each student. In written exams, regulations require the examiners to submit the results of the grading within three weeks. The marking of all written examinations is anonymous.

Student results

Student results for each course are annually presented in the Study QA Report. Developments in the failure rates over the years are followed carefully. If more than 20% of students fail in a single examination, the course coordinator must take action and also report on this.

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

Students have the right to an explanation of the assessment of their grade from the examiners and to see their answers (written exams) and examiner guidelines. Students can request guidance from Academic and Research Administration and in conversations with a study supervisor, an attempt is made to identify what can help the student to succeed, or advice is given on receiving further help at SiÅs. Students are also encouraged to contact the course coordinator for help in preparing for the continuation exam if this is needed. If the student does not meet the progression requirements, they are also offered an interview with a study supervisor. If they apply for an exemption from the progression requirements, the students are invited to a meeting with the Head of Teaching and a study supervisor.

Description of the appeal processes against assessment outcomes

Students can appeal grades of written examinations and formal errors. Complaints about formal errors are resolved by the Board of Appeals. There is extensive information on NMBU.no about these rights. An overview of the number of complaints and the outcome of appeals are presented in the Study QA Report every year.

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

Description of how (procedures) and by who (description of the committee structure) the students' assessment strategy is decided, communicated to staff, students and stakeholders, implemented, assessed and revised

Description of the link between learning outcomes and assessment design

In the curriculum (Curriculum 2021 and Curriculum 2002), the teaching in a course can be organized into units. Each course can involve teaching in several subject areas and is concluded with a summative examination. The course coordinator, the unit leaders and the teachers work together to achieve better learning outcomes for the students by aligning the teaching and assessment in the cyclic QA work (described in detail under Standard 1.4). The students' evaluation of the course is an important source of feedback. The course coordinator is responsible for the examination quality. The course coordinator enters all changes in the course in the EPN that are approved by VET-SU for the following academic year. As mentioned under Standard 8.1, VET-SU has a central role in approving and revising the assessment scheme and learning outcomes are the basis for the chosen assessment strategy.

In Curriculums 2021 and 2002, the following annual process for making revisions in the assessment system is adopted: If the teaching staff of a course wants to change the assessment methods, they must apply to VET-SU before the next academic year's revision of the Curriculum plan. VET-SU revises the Curriculum plan and Semester schedule (1-2 times) annually and this revision is approved after a hearing process in May (and November if necessary). The main revision is in April/May for the next academic year. The teaching staff and students (VET-SR) are consulted in this process. All VET-SU case papers and minutes are available to lecturers and students on the intranet and Canvas.

If there are problems with a course, various measures can be taken. Meetings are organized with the aim of addressing the problems in the course. These meetings can take place internally within the group of teachers providing the course, but can also include the section leader, Head of department, Dean, Head of teaching, Academic and Research Administration and student representatives depending on the problem. VET-SU must adopt any major changes to the course.

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

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

Description of the system to certify student achievement of learning outcomes in the different subjects, years of study, etc.

Final summative examinations are located at the end of each course. Students are eligible for final examinations when all compulsory teaching and clinical rotations are approved. Students are normally free to prepare for the final examination for the preceding 1-3 weeks. Retakes (continuation examinations) are placed in the last week of the summer holidays or Christmas holidays. The examination progression criteria are presented under Standard 7.5.

Description of the strategy to encourage students to take an active part in the learning process

A guiding principle in the development of Curriculum 2021 is student-active learning. VET-SU provides instructions to working groups planning the new courses and subsequently approves courses. Seminars and teacher training are given to motivate the teachers to focus on student-centred learning including the improvement of methods of formative assessment, establishment of systems for documentation of achieved skills and development of non-clinical and clinical practical training. The active participation of students must also be reflected in assessment schemes and requirements for active participation in courses.

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

Description of the assessment methodology to ensure that every graduate has achieved the minimum level of competence, as described in the ESEVT Day One Competences (see Annex 2)

In accordance with Standard 3.3, work has been done to map the curriculums being taught at NMBU-VET to ensure that the courses in a completed curriculum together have learning outcomes that achieve Day One Competences (see Appendix 02). The examination system at NMBU-VET is explained in Standard 8.1. For the core clinical courses after the 9th semester, there is both a requirement to pass the clinical teaching rotations and the formal examinations. Attendance is compulsory in the clinical rotations (80% requirement) and delivery of case reports documents clinical experience. Students work in small groups assigned individual patients and presentation of regular patient status reports is a requirement. In the differentiation tracks, there is a requirement for independent journal writing and giving presentations.

Comments on Area 8

A common system for the student's own documentation of practical training (logbooks) has not been systematically used at NMBU-VET. In the pre- and paraclinical sciences, mandatory attendance, mandatory assignments and colloquia for evaluation are used. In the clinics we have relied on mandatory attendance, small groups of students ensuring close contact between teachers and students, formative assessments, assessment of journals, case presentations and reports to ensure that students achieve the necessary skills and competences. As an example, The Small Animal Hospital provides feedback to all students by a standardized evaluation form on their performance in the clinic filled out by the responsible clinician(s) on the last day of the rotation. In autumn 2023, a new system for student logbooks and case logs in all clinical rotations (Small Animal Hospital, Equine Hospital, Production Animal Clinic, Farm Service Unit, and pathology) will be implemented. The logbook contains documentation of practical training, a case-log and a reflection log. The new system will be evaluated and revised after the first semester of use and a long-term goal is to make the logbook digital.

The assessment strategy in Curriculum 2021, which is currently being introduced, will contain changes in practice at NMBU-VET. There will be an increased use of multiple-choice examinations both for formative and summative purposes particularly in courses containing 2 or more subjects; there will be an increased use of oral examinations in subject areas that have traditionally used written examination forms; and assessment of practical skills on models or live animals will be required before clinical semesters begin. At the start of clinical semesters, a literature review-based graduate thesis will be written and there will be an OSCE to test practical skills before clinical rotations. A system of logbooks will give feedback to students on their progress toward Day One Competences. Final examinations will be held at the end of the study period (semester 11 or 12).

Suggestions for improvement in Area 8

After evaluation of the logbook in the autumn of 2023, a permanent logbook system should be taken into use. The system for external practical training should be improved with requirements for documentation of practical learning outcomes, appointment of responsible academic staff and a complaint and feedback process.

The use of formative assessments should be increased, and more systematic use of reflections in the teaching should be considered. The forms of feedback given to students during their courses of study should be diversified. Digital testing during non-clinical and clinical courses, systems of documentation of skills and oral evaluation sessions are useful forms of feedback to assist students to achieve learning outcomes.

The quality and the quality assurance of examinations should be improved. The assessment of examinations by an examination commission may enhance the quality and uniformity of examinations. The increased use of multiple-choice questions in examinations should be accompanied by training of teachers in creating multiple-choice question and psychometric analysis of the performance of questions.

Area 9. Academic and support staff

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

A formal training² (including good teaching and evaluation practices, learning and e-learning resources, biosecurity and QA procedures) must be in place for all staff¹ involved with teaching.

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

Description of the global strategy in order to ensure that all requested competences for the veterinary programme are covered and that staff are properly qualified and prepared for their roles (e.g. good teaching and assessing practices, knowledge of up-to-date (e-)learning resources, biosecurity and QA procedures, ...)

The employment regulations at NMBU describe the recruitment process based on the "Norwegian Act Relating to Civil Servants" and the "Norwegian Act Relating to Universities and University Colleges" and define the requirements for teaching, postgraduate supervision, and scientific merit for educational staff. Documented competence in relevant educational theory and practice based on training or on teaching and supervision, is a criterion for employment. A lack of pedagogical skills must be compensated within the first two years of employment by attending a course in pedagogics (10 ECTS credits). This requirement is normally emphasized both in the instructions for the position and in the job posting. Scientific staff usually attend the course [PPNU400 Teaching and Learning in Higher Education - Scientific Staff](#) and technical staff the course [VU-PPUN300 Teaching and Learning in Higher Education - Technical and administrative Staff](#). For temporary employees involved in teaching, NMBU-VET from 2023 offers a short course (20 hours) Introduction to Teaching and Learning in Higher Education. The course consists of lectures, group discussions, reflection upon own teaching and writing a reflection note.

Heads of Departments are responsible for ensuring sufficient educational training and update of the teaching staff in their respective departments. As a part of the Study QA report, Heads of Departments report on the status for training in pedagogics for their academic staff (senior and junior). Employee development is also a part of the annual appraisal interview, which includes an update on the status of the employees' teaching/ pedagogics.

NMBU offers internal courses and seminars related to teaching and research as well as HSE, administration and leadership. Employees also have the possibility to attend relevant courses in continuing education offered by the university and external courses. The departments have specific budgets for courses and conferences that the employees can apply for. To facilitate regular updates, VET-SU organizes educational seminars for the teachers at NMBU-VET. Both national and international lecturers have been used for this purpose. There has been great interest among the teachers for these seminars. Experience transfer seminars for the new curriculum have also been carried out, where teachers from the completed courses in Curriculum 2021 share their teaching methods and experiences with other teachers. Seminars are also organised by NMBUs' [Learningcenter](#) (in Norwegian).

Teachers at NMBU are encouraged to document and regularly update their teaching activities, competences, and development in an “Educational folder”. This can be used as documentation assessments of qualifications for academic positions and if applying for recognition as [Excellent Teaching Practitioner](#) (in Norwegian) which is status awarded to teachers at NMBU who, over time and systematically, have further developed their teaching competence to a level that is significantly higher than the expected basic competence. NMBU has 10 employees recognized as Excellent Teacher Practitioner, of these NMBU-VET has one.

As part of the onboarding process for new employees, information on being employed at NMBU (Employee Handbook), procedures related to HSE (HSE manual), and biosecurity (Landax) is provided and is available online through the NMBU-VET intranet. All employees are responsible for familiarizing themselves with and following current routines and guidelines. Information on QA procedures related to teaching is provided on Canvas and on the intranet. More specific training related to individual work tasks is provided by the departments or units.

NMBU-VET has a high percentage of veterinarians on the teaching staff (Table 9.2.2.). In the clinical departments, most of the teaching staff are veterinarians (Appendix 01). To ensure that veterinarians provide the majority of teaching in the pre- and paraclinical subjects, qualifications as a veterinarian are given priority in the recruitment process.

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

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

Table 9.2.1. Academic staff of the veterinary programme

| Type of contract | 2021/2022 | 2020/2021 | 2019/2020 | Mean |
|------------------------|-----------|-----------|-----------|-------|
| Permanent (FTE) | 93.2 | 99.2 | 95.5 | 96.0 |
| Temporary: | | | | |
| Interns (FTE) | 15.0 | 9.0 | 2.8 | 8.9 |
| Residents (FTE) | 9.5 | 8.5 | 11.0 | 9.7 |
| PhD students (FTE) | 6.0 | 3.5 | 2.8 | 4.0 |
| Practitioners (FTE) | 0.2 | 0.0 | 0.9 | 0.4 |
| Others (specify) (FTE) | 7.7 | 12.1 | 12.3 | 10.7 |
| Total (FTE) | 131.5 | 132.3 | 125.3 | 129.7 |

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

| Type of contract | 2021/2022 | 2020/2021 | 2019/2020 | Mean |
|------------------|-----------|-----------|-----------|------|
| Permanent (FTE) | 87.6 | 86.7 | 84.7 | 86.3 |
| Temporary (FTE) | 96.2 | 96.4 | 99.3 | 97.3 |
| | | | | |

Table 9.2.3. Support staff of the veterinary programme

| Type of contract | 2021/2022 | 2020/2021 | 2019/2020 | Mean |
|------------------|-----------|-----------|-----------|-------|
| Permanent (FTE) | 130.1 | 133.5 | 134.6 | 132.7 |
| Temporary (FTE) | 11.9 | 11.2 | 7.0 | 10.1 |
| Total (FTE) | 142.0 | 144.7 | 141.6 | 142.8 |

Table 9.2.4. Research staff of the VEE

| Type of contract | 2021/2022 | 2020/2021 | 2019/2020 | Mean |
|------------------|-----------|-----------|-----------|------|
| Permanent (FTE) | 19.9 | 17.3 | 16.4 | 17.9 |
| Temporary (FTE) | 47.4 | 47.5 | 53.3 | 49.4 |
| Total (FTE) | 67.3 | 64.8 | 69.7 | 67.2 |

Prospected number of FTE academic and support staff of the veterinary programme for the next 3 academic years

There will be a slight reduction in the number of employees in the coming years to reach a financial balance. The numbers are not yet available. Efforts will be made to achieve this reduction in a way that affects teaching as little as possible.

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

The quality of the hiring process is assured by appointing an expert evaluation committee, a nomination committee, and an appointment committee. The composition and mandate of these committees are described under Standard 1.2 including student representation. The expert evaluation committee produces an assessment based on the applicant's qualifications in research achievements, teaching skills and other qualifications. Based on the assessment, the nomination committee decides who to invite for interview and whether a trial lecture is required. Their recommendation is passed on to the appointment committee for further quality assurance and a final decision.

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

The selection and recruitment of support staff is conducted under the authority of an Appointment authority which consists of two committees. The composition and mandate of these committees are described under Standard 1.2. The nomination committee recommends qualified and suitable applicants to an employment committee, which makes the final decision on employment.

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

Generally, employees have the right to take on sideline positions and extra work for another employer or to engage in private commercial activities in their leisure time that amount up to a 20% position. NMBU-VET is positive to such arrangements. At the same time, outside work and external activities should not be of a scope or nature that cause problems for the employee's work tasks and obligations at NMBU-VET. The State Employee Handbook, chapter 10.13, regulates which sideline positions and extra work the employee may take on in addition to their ordinary work. NMBU also has guidelines for sideline positions / extra work. The employee is responsible for raising the issue of outside work with their manager. The manager must document in writing

that clarification/approval has been given. The document shall be archived in the employee's employment record (personnel file).

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

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

Description of the peculiarities of the work contract for academic staff (e.g. permanent versus temporary, balance between teaching, research and service, continuing education, ...)

The main rule is permanent employment, and temporary employment may only take place if authorized by law. Exemptions from the main rule are authorized in the Civil Servants Act. The proportion of temporary employment is considerably higher in the university sector than in other sectors in Norway. Part of the explanation is due to teaching and research projects at the institution, which are often short-term projects from two to four years and financed by external funding bodies. PhD candidates, post docs, interns and residents are all temporary positions integral to performing the teaching and research activities of NMBU-VET. Employees in permanent academic positions have a duty to participate in teaching and research. The proportion allocated to the various activities may vary. Certain employees who teach in the clinics have less time for research and more time for carrying out clinical activities.

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

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

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

Description of the programmes dedicated to academic and support staff for:

-) their professional growth and development**
-) the appraisal and promotion procedures**
-) the mentoring and supporting procedures**
-) their implication in the decision-making processes**

Veterinarians and veterinary nurses in Norway are obliged by the law governing animal health professionals to keep themselves professionally up to date. The development of teaching staff is a responsibility that lies at the departmental level at NMBU-VET. Professors, Associate professors, post-doctoral fellows, and PhD students will conduct research as part of their job, and they are encouraged to present their work at national and international conferences and establish international networks. The academic staff at NMBU has the possibility to apply for sabbatical leave in line with other University institutions in Norway. Many of the staff members are

contributors to the Center for Further and Continuing Education's (SEVU) courses, and can attend courses held by SEVU. In the clinics and in other practical courses (for instance, pathology and anatomy dissection) young teachers are under the supervision of senior staff when they are at the beginning of their academic career.

Most resident positions and PhD positions are advertised, but the department may allocate funds to educate their own employees further when desired. Whenever relevant, teaching staff who might fulfil the requirements for a full professor position or an associate professor position, are encouraged to apply for promotion. Successful candidates will receive an individual promotion.

At NMBU-VET, appraisal meetings for academic and support staff are conducted with the nearest leader, normally the section or unit leader, and are performed once a year. Various aspects of the employee's work, such as teaching, scientific production, external funding, career development and plans for the coming year are discussed.

During local pay negotiations each year, there are five specific criteria for academic positions that support a claim for a raise in salary. Pedagogical skills/development and development of new teaching programs are one of the criteria. This focus on teaching skills and recognition of contributions to teaching, support teaching as an area of expertise and encourages good performance. The teachers are also evaluated on scientific merit, and this represents a significant input to salary negotiations for teachers. There are systems of reward and recognition for teaching excellence at NMBU. Lecturers in NMBU-VET have received awards as best lecturer at NMBU and achieved Excellent Teaching Practitioner status. Since 2016, it has been possible to apply for funding for innovative teaching projects. Teachers at NMBU-VET have received funds for this every year, which helps to increase educational quality and competence.

Employees at NMBU-VET can influence decisions through the regular meetings between NMBU-VET management and representatives of the staff unions. There are also meetings with the staff unions ahead of all meetings of the NMBU-VET board, so that the staff union can comment on issues before a final decision by the board. Local managers at all levels also have regular group meetings with their employees. Matters arising from these meetings can be taken up with the NMBU-VET management.

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

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

NMBU-VET has had a student evaluation system for the last 30 years. In 2005, the system became electronic and is under continuous development. Students can comment on teachers anonymously for each block/course every year through this system. These comments are given to the Head of the responsible department. The Head of the department follows-up on these comments, which is usually done in the form of conversations between the teacher and the nearest leader or Head of department. Mentoring, supervision from colleagues and pedagogical training may also be used. Continued or severe complaints regarding the quality of individual teachers or courses can lead to further measures such as reorganizing of courses or changes in course management. Additional channels available for teacher assessment by students are given under Standard 7.8.

Description of how (procedures) and by who (description of the committee structure) the strategy for allocating, recruiting, promoting, supporting and assessing academic and support staff is decided, communicated to staff, students and stakeholders, implemented, assessed and revised

NMBU-VET board adopts staffing plans and organizational structure. These apply to positions linked to public funding. If NMBU-VET management sees a need for changes in staffing plans or structure, this must be discussed with staff union leaders and presented to the NMBU-VET board for decision. Decisions relating to positions that are externally funded (e.g., some clinical activity and research) are decided by the Dean.

Comments on Area 9

The Covid-19 crisis and the 23 months of restrictions had a considerable impact on staff and students at NMBU-VET. The constant restriction measures and continual postponement of a return to a normal situation contributed to an accumulating exhaustion. The relocation of NMBU-VET from Campus Adamstuen to Campus Ås in this period did not improve the situation either for the students or the teachers and continual change became the normal situation for everyone. The long-term effects of this extended period of uncertainty and unpredictability are unknown. What is clear is that the NMBU-VET's staff did as much as they could to provide the best possible teaching and training to the students under the prevailing conditions.

Initiatives to reform academic career assessment are being prepared at NMBU in connection with monitoring the European agreement on reforming research assessment. This will lead to clearer guidelines for target achievement and assessments and will be implemented by NMBU-VET.

Suggestions for improvement in Area 9

A more systematic approach to the assessment of competence, development and training of staff should be established to promote and facilitate career progression.

Area 10. Research programmes, continuing and postgraduate education

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

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

NMBU-VET is responsible for conducting research within its core areas of animal health, animal welfare, food safety, veterinary public health, comparative medicine, and aquaculture. This responsibility also includes basic research related to the professional fields of veterinary medicine.

NMBU-VET's research activity spans from basic to applied research and has potential for impact in science and education, as well as for policy and society. NMBU-VET' research activity has an impact on society and future policy by educating new veterinarians with updated knowledge on field challenges and how to tackle them. NMBU-VET's research partnerships with industry and stakeholders ensure that research questions are relevant for problems in the field. Most senior academic staff are involved in both research and teaching, which brings their skills in science communication to students and the wider animal production and health community.

Table 10.1.1. List of the major funded research programmes in the VEE which were on-going in 2021/2022. The titles and duration of projects within the programmes are listed in Appendix 12.

| Scientific topics: programmes | Grant/yr |
|-------------------------------|-------------|
| Preclinical sciences | |
| Aquatic animals | |
| 10 externally funded projects | € 4 310 270 |
| 4 NMBU funded PhD projects | € 337 184 |
| Other | |
| 2 externally funded projects | € 302 256 |
| 3 NMBU funded PhD projects | € 234 741 |
| Paraclinical sciences | |
| Aquatic animals | |
| 2 externally funded projects | € 1 382 780 |
| 7 NMBU funded PhD projects | € 553 474 |
| Production animals | |
| 2 externally funded projects | € 323 852 |
| 2 NMBU funded PhD projects | € 171 981 |

| | |
|--|-------------|
| Clinical sciences | |
| Production animals | |
| 9 externally funded projects | € 904 879 |
| 6 NMBU funded PhD projects | € 402 077 |
| Companion animals - Equine | |
| 7 externally funded projects | € 279 402 |
| 2 NMBU funded PhD projects | € 150 057 |
| Companion animals – small animals | |
| 9 NMBU funded PhD projects | € 719 563 |
| Food Safety and Quality & Veterinary Public health & One Health | |
| 8 externally funded projects | € 2 088 200 |
| 4 NMBU funded PhD projects | € 337 184 |
| Animal Production | |
| 1 externally funded projects | € 152 871 |
| Veterinary Education | |
| 1 externally funded projects | € 91 062 |

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

Description of how (undergraduate) students:

a) are made aware of the importance of evidence-based medicine, scientific research and lifelong learning;

b) are initiated to bibliographic search, scientific methods and research techniques, and writing of scientific papers.

All students are introduced to the concepts of evidence-based medicine, critical appraisal, and scientific research through the course-thread Professional studies, which includes an introduction to bibliographic search, scientific methods, and research techniques. Students practice writing of scientific papers through performing a systematic literature-review on their chosen research topic (8 weeks) during their 8th semester of 2021 curriculum. Students following the 2002 curriculum write a graduation thesis of 15 – 40 ECTS (see Standard 3.1). Prior to starting their project, all students follow a course on evidence-based medicine, critical appraisal, bibliographic search, scientific methods and research techniques. Students are also introduced to scientific literature in courses where “journal clubs” are used in teaching. Knowledge about scientific methods and critical assessment of sources of information is an important basis for lifelong learning.

Description of how undergraduate students are offered to participate to research programmes on a non-compulsory or compulsory basis.

Number of students selecting non-compulsory research programmes

| | 2021/2022 | 2020/2021 | 2019/2020 | Mean |
|---------------------------------------|-----------|-----------|-----------|------|
| Project Track | 2 | 1 | 1 | 1.3 |
| Veterinary Student Research Programme | 11 | 5 | 5 | 7.0 |
| Total | 13 | 6 | 6 | 8.3 |

In Curriculum 2002 in the final tracking year (semesters 10 and 11 or 11 and 12), all veterinary students must complete a small research task or literature review project to write a final graduation thesis that is scientifically relevant to their selected differentiation track and within the field of veterinary medicine.

The Veterinary Student Research Programme is an optional 2-year specialization programme for veterinary students. Students who enrol in the programme take a one-year deferral from their ordinary veterinary studies after the 6th or 8th semester to take research focused courses and to conduct original research in one of NMBU-VET's research groups. Students who follow the research programme remain part of the research group for the rest of their veterinary studies. Finally, the student submits a 90 ECTS thesis based on the research conducted to complete the programme. Students who pass the programme have a head start if they continue onwards to PhD studies and may complete a PhD in 2 years.

Description of the minimum requirements for the graduation thesis (Master dissertation), its supervision and its assessment

Students that select one of the four clinical tracks must complete a small research task or literature review and write a graduation thesis worth 15 ECTS (Production Animal Medicine and Food Safety, Small Animal Medicine, and Horse Medicine) or 20 ECTS (Aquatic Medicine), amounting to 10 weeks' or 13 weeks' work, respectively. Students that select the Project-specific differentiation track must complete a research project worth 40 ECTS, which amount to 27 weeks' work. The student may elect to spend an additional 2 weeks on their research task in the Aquatic Medicine, Small Animal Medicine, and the Horse Medicine differentiations. Two to three students within the same differentiation track may work on the same task or project. If two or more students submit a single research task or project, a single signed co-author declaration shall also be submitted that describes the contribution of the individual students. The submitted research task is in the form of a final graduation thesis and consists of approximately 20 – 40 type written pages and the students must give a presentation of the thesis work to be passed. The thesis for the Project-related track is to have a higher standard of quality and originality and a higher standard of scientific presentation than the final graduation thesis for the other differentiation tracks.

The final graduation theses from the four clinical tracks are evaluated by an examiner and the supervisor and are awarded either pass or fail. The Project-related theses are evaluated by two examiners, where at least one of which is external to NMBU, and are awarded a graded character from A to F. If the project is considered suitable for a passing grade (A-E), the student holds a 30-minute public presentation of the project followed by a discussion with the examiners and supervisor. Based on the submitted written work, oral presentation and discussion, the student is awarded a grade (A-E). Final examination certificates are awarded only after the approval of the

final graduation thesis or project-related thesis. The differentiation track and the title of the graduation thesis or project-related thesis are recorded on the final examination certificate.

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

Table 10.3.1. Number of students registered at postgraduate clinical training

| Interns | 2021/2022 | 2020/2021 | 2019/2020 | Mean |
|---|------------------|------------------|------------------|-------------|
| Companion animals | 11 | 7 | 8 | 8.7 |
| Equine | 3 | 1 | 1 | 1.7 |
| Production animals | 3 | 2 | 0 | 1.7 |
| Total | 17 | 10 | 9 | 12.0 |
| Residents | 2021/2022 | 2020/2021 | 2019/2020 | Mean |
| European College of Animal Reproduction (ECAR) | 2 | 2 | 2 | 2.0 |
| European College of Bovine Health Management (ECBHM) | 1 | 0 | 0 | 0.3 |
| European College of Porcine Health Management (ECPHM) | 1 | 0 | 0 | 0.3 |
| European College of Veterinary Anaesthesia and Analgesia (ECVAA) | 2 | 1 | 2 | 1.7 |
| European College of Veterinary Diagnostic Imaging (ECVDI) | 0 | 1 | 3 | 1.3 |
| European College of Equine Internal Medicine (ECEIM) | 1 | 1 | 1 | 1.0 |
| European College of Veterinary Internal Medicine – Companion Animals (ECVIM-CA) | 0 | 1 | 1 | 0.7 |
| European College of Veterinary Neurology (ECVN) | 1 | 1 | 1 | 1.0 |
| European College of Veterinary Ophthalmologists (ECVO) | 0 | 0 | 1 | 0.3 |
| European College of Veterinary Surgeons (ECVS) | 1 | 1 | 1 | 1.0 |
| Total | 9 | 8 | 12 | 9.7 |

Table 10.3.2. Number of students registered at postgraduate research training

| | 2021/2022 | 2020/2021 | 2019/2020 | Mean |
|---------------------------|------------------|------------------|------------------|-------------|
| PhD in Veterinary Science | 108 | 124 | 125 | 119 |

Table 10.3.3.

There are no postgraduate courses at NMBU-VET that are not related to clinical or research work.

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

| Course | ECTS | 2021 | 2020 | 2019 |
|--|------|------|------|------|
| VU-VET310 The veterinary practitioner in modern cattle management, husbandry and surgery | 10 | | | 30 |
| VU-VET330 Fish health | 10 | 13 | 116 | 35 |
| VH-LABF Laboratory animal science for researchers (FELASA C) | 10 | | 34 | 117 |
| VU-LAB160 Laboratory animal studies for technicians (FELASA B) | 10 | | 9 | 6 |
| VL-ANED Anesthesia and pain relief for animal caretakers | 15 | 36 | | 39 |
| Canine and feline rehabilitation and physiotherapy | 30 | | | 13 |
| Neuropsychology and psychopharmacology | 5 | | | 28 |
| Total | | 49 | 159 | 268 |

| Course (no ECTS) | 2021 | 2020 | 2019 |
|---|------|------|------|
| Only when needed! Online course in correct antibiotic use for animals | 143 | 122 | 314 |
| Rabbit medicine - digital course | 62 | | |
| Course in anesthesia and pain relief for various disease conditions in small animals | 13 | | 30 |
| Refresher course for public veterinarians in meat control | | 42 | |
| Mistreatment and abuse of animals and people: detection, handling and interdisciplinary collaboration | | 90 | |
| Insemination of cattle | | | 7 |
| Seminar on canine sports medicine | | | 42 |
| Total | 218 | 254 | 393 |

Prospected number of students registered at post-graduate programmes for the next 3 academic years.

NMBU-VET expects to be able to increase the number of new PhD-students per year slightly in the coming three years. It is planned to increase the number of continuing education courses that are provided. There is not expected to be any major change in the number of interns and residents.

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.

Interns are a resource in the clinical teaching of undergraduate students. They are involved in teaching under the supervision of senior academic staff. Residents also contribute to the clinical teaching of veterinary students. In clinical fields, PhD-students are often appointed for 4 years, 3 years of research and 1 year of teaching under supervision of senior academic staff.

There are no obvious conflicts between residents, interns, and students. In the Small Animal Hospital, interns and students follow each other while in clinics and typically examine the patients together, discuss their findings, and frequently initiate discussions about further diagnostics. Residents are trained at a more advanced level resulting in little competition between the two groups. However, quite often a patient can be used both to train a resident and students at the same time. Interns and residents are in general a helpful resource when it comes to teaching veterinary students, because of their enthusiasm in teaching clinical skills. The students take part in discussions between junior and senior staff; hence, this contributes substantially to their learning. Moreover, having junior staff in the clinics frees time from senior clinicians, enabling them to provide the students with more organized patient rounds. The number of patients at the Equine Hospital is high and sufficient to cover both the need for teaching of students and residents.

Description of how the continuing education programmes provided by the VEE are matched to the needs of the profession and the community.

NMBU-VET aims to provide continuing education programmes requested by the community. In Norway, there is a lack of veterinarians, especially in rural areas and as participants in on-call duties. To help this situation, continuing education is especially important for veterinarians that want to change their main field of veterinary work or contribute to ensuring 24/7 clinical services in some areas. Continuing education programmes at NMBU-VET are aimed at these groups that need updates in clinical veterinary medicine as well as veterinarians who want continuing education for professional development within their field. NMBU-VET also provides programmes in aquatic medicine, which is an area with a pronounced need for continuing education. In cooperation with other faculties at NMBU, NMBU-VET also aims to provide continuing education programmes related to societal change towards a sustainable future.

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

Description of the mechanism used by the VEE to ensure that its research activities contribute to research-based education.

NMBU-VET has a broad research activity within the core areas of veterinary medicine, including animal health, animal welfare, food safety, veterinary public health, comparative medicine and aquaculture. Most of the teaching at NMBU-VET is provided by permanent academic staff, such as professors and associate professors, that are also involved in research. All associate professors and professors are appointed to work with both teaching and research. The amount of time devoted to these two activities may vary but the combination of research and teaching ensures a familiarity with research in areas related to teaching and promotes a readiness to incorporate research findings and evidence-based approaches to subjects taught. A further combination of teaching and research occurs with supervision of students in their graduation thesis. The Veterinary Student Research

Programme contributes to an increased focus on research in veterinary education and cooperation between students and academic staff.

Description of how (procedures) and by who (description of the committee structure) research, continuing and postgraduate education programmes organised by the VEE are decided, communicated to staff, students and stakeholders, implemented, assessed and revised.

Within the financial framework, academic staff at NMBU-VET have the right under the Universities and University College Act to pursue research within the framework of their institution's mission. However, research depends on available funding, and research at NMBU-VET is mainly financed by external funding. Availability of research funds vary over time. NMBU-VET has some internal funding for research/ PhD-positions. Allocation of internally funded research projects/PhD positions is decided by the NMBU-VET management team after recommendations from VET-FU, which is the advisory body of the Dean in research matters. This allocation is based on quality. In addition, NMBU-VET has the possibility to allocate internal research funding to specific prioritized areas. Such priorities are made by the NMBU-VET management team or by the management groups of the four Departments and are based on strategic considerations regarding future recruitment or specific topics of importance.

Comments on Area 10

The relocation of NMBU-VET from Campus Adamstuen to Campus Ås was a demanding process that was compounded by it coinciding with the Covid-19 crisis. The energies and resources of NMBU-VET were focused on accomplishing the relocation and maintaining teaching for its students. PhD students and Post Doctoral fellows were delayed in their studies. NMBU-VET prioritized the education of undergraduate students. With the establishment of NMBU-VET in its new facilities at Ås, it is expected that there should be a return in research activity and post-graduate education. PhD students and Post Docs received extensions based on the degree of their delay.

Access to external research funds in many respects dictates the "profile" of the research at NMBU-VET and thus potentially the future profile of its academic staff. Currently, research funding in aquatic medicine is very good, but difficult within fields such as small animal medicine. NMBU-VET can prioritize the topics of internal PhD and Post Doctoral positions and can use the allocations of these resources to promote recruitment within core areas of veterinary medicine where external funding is hard to get.

Suggestions for improvement in Area 10

The Veterinary Student Research programme should be continued to promote the involvement of students in research and strengthen the connections between research and veterinary education. The scientific method and evidence-based veterinary medicine should be clearly presented in the development of curriculum 2021.

Activity in continuing education should be increased and should respond to the needs of the community in providing programmes in clinical veterinary medicine, aquatic medicine and sustainability.

NMBU-VET should use the strategic allocation of internally funded PhD-projects to strengthen recruitment to core areas of veterinary medicine.

ESEVT Indicators



ESEVT Indicators

| | | | | | |
|---|--|------------------------------------|----------------|----------------|-------------|
| Name of the VEE: | | NMBU-VET | | | |
| Name & mail of the VEE's Head: | | Anne Storset; anne.storset@nmbu.no | | | |
| Date of the form filling: | | 23.07.2023 | | | |
| Raw data from the last 3 complete academic years | | | | | |
| | | Year -1 | Year -2 | Year -3 | Mean |
| 1 | n° of FTE teaching staff involved in veterinary training | 131,5 | 132,3 | 125,3 | 129,70 |
| 2 | n° of undergraduate students | 422 | 408 | 399 | 409,67 |
| 3 | n° of FTE veterinarians involved in veterinary training | 118,49 | 117,91 | 110,48 | 115,63 |
| 4 | n° of students graduating annually | 63 | 65 | 74 | 67,33 |
| 5 | n° of FTE support staff involved in veterinary training | 142 | 144,7 | 141,6 | 142,77 |
| 6 | n° of hours of practical (non-clinical) training | 867,5 | 643,5 | 722,5 | 744,50 |
| 7 | n° of hours of Core Clinical Training (CCT) | 1056 | 942 | 847 | 948,33 |
| 8 | n° of hours of VPH (including FSQ) training | 305 | 264 | 293 | 287,33 |
| 9 | n° of hours of extra-mural practical training in VPH (including FSQ) | 52,5 | 0 | 41 | 31,17 |
| 10 | n° of companion animal patients seen intra-murally | 6572 | 4814 | 5977 | 5787,67 |
| 11 | n° of individual ruminant and pig patients seen intra-murally | 288 | 283 | 178 | 249,67 |
| 12 | n° of equine patients seen intra-murally | 1142 | 743 | 285 | 723,33 |
| 13 | n° of rabbit, rodent, bird and exotic patients seen intra-murally | 75 | 261 | 277 | 204,33 |
| 14 | n° of companion animal patients seen extra-murally | 0 | 0 | 0 | 0,00 |
| 15 | n° of individual ruminants and pig patients seen extra-murally | 3038 | 4479 | 5469 | 4328,67 |
| 16 | n° of equine patients seen extra-murally | 91 | 138 | 124 | 117,67 |
| 17 | n° of rabbit, rodent, bird and exotic patients seen extra-murally | 51 | 0 | 0 | 17,00 |
| 18 | n° of visits to ruminant and pig herds | 129 | 112 | 102 | 114,33 |
| 19 | n° of visits to poultry and farmed rabbit units | 30 | 18 | 18 | 22,00 |
| 20 | n° of companion animal necropsies | 129 | 103 | 161 | 131,00 |
| 21 | n° of ruminant and pig necropsies | 444 | 298 | 102 | 281,33 |
| 22 | n° of equine necropsies | 87 | 47 | 13 | 49,00 |
| 23 | n° of rabbit, rodent, bird and exotic pet necropsies | 159 | 92 | 95 | 115,33 |
| 24 | n° of FTE specialised veterinarians involved in veterinary training | 35 | 33 | 35 | 34,33 |
| 25 | n° of PhD graduating annually | 22 | 20 | 20 | 20,67 |

The boxes within the red frames must be filled in by the VEE (the other values will be automatically calculated)



ESEVT Indicators

| | | | | | |
|--|---|--|----------------------------------|-----------------------------------|----------------------------|
| Name of the VEE: | | Norwegian University of Life Sciences - Faculty of Veterinary Medicine | | | |
| Date of the form filling: | | 23.07.2023 | | | |
| Calculated Indicators from raw data-Core Curriculum | | | | | |
| | | VEE values | Median values² | Minimal values² | Balance³ |
| I1 | n° of FTE teaching staff involved in veterinary training / n° of undergraduate students | 0,317 | 0,15 | 0,13 | 0,191 |
| I2 | n° of FTE veterinarians involved in veterinary training / n° of students graduating annually | 1,717 | 0,84 | 0,63 | 1,087 |
| I3 | n° of FTE support staff involved in veterinary training / n° of students graduating annually | 2,120 | 0,88 | 0,54 | 1,580 |
| I4 | n° of hours of practical (non-clinical) training | 744,500 | 953,50 | 700,59 | 43,910 |
| I5 | n° of hours of Core Clinical Training (CCT) | 948,333 | 941,58 | 704,80 | 243,533 |
| I6 | n° of hours of VPH (including FSQ) training | 287,333 | 293,50 | 191,80 | 95,533 |
| I7 | n° of hours of extra-mural practical training in VPH (including FSQ) | 31,167 | 75,00 | 31,80 | -0,633 |
| I8 | n° of companion animal patients seen intra-murally and extra-murally / n° of students graduating annually | 85,955 | 67,37 | 44,01 | 41,945 |
| I9 | n° of individual ruminants and pig patients seen intra-murally and extra-murally / n° of students graduating annually | 67,995 | 18,75 | 9,74 | 58,255 |
| I10 | n° of equine patients seen intra-murally and extra-murally / n° of students graduating annually | 12,490 | 5,96 | 2,15 | 10,340 |
| I11 | n° of rabbit, rodent, bird and exotic seen intra-murally and extra-murally / n° of students graduating annually | 3,287 | 3,11 | 1,16 | 2,127 |
| I12 | n° of visits to ruminant and pig herds / n° of students graduating annually | 1,698 | 1,29 | 0,54 | 1,158 |
| I13 | n° of visits of poultry and farmed rabbit units / n° of students graduating annually | 0,327 | 0,11 | 0,04 | 0,282 |
| I14 | n° of companion animal necropsies / n° of students graduating annually | 1,946 | 2,11 | 1,40 | 0,546 |
| I15 | n° of ruminant and pig necropsies / n° of students graduating annually | 4,178 | 1,36 | 0,90 | 3,278 |
| I16 | n° of equine necropsies / n° of students graduating annually | 0,728 | 0,18 | 0,10 | 0,628 |
| I17 | n° of rabbit, rodent, bird and exotic pet necropsies / n° of students graduating annually | 1,713 | 2,65 | 0,88 | 0,833 |
| I18 | n° of FTE specialised veterinarians involved in veterinary training / n° of students graduating annually | 0,510 | 0,27 | 0,06 | 0,450 |
| I19 | n° of PhD graduating annually / n° of students graduating annually | 0,307 | 0,15 | 0,07 | 0,237 |
| 1 | Median values defined by data from VEEs with Accreditation/Approval status in May 2019 | | | | |
| 2 | Recommended minimal values calculated as the 20th percentile of data from VEEs with Accreditation/Approval status in May 2019 | | | | |
| 3 | A negative balance indicates that the Indicator is below the recommended minimal value | | | | |
| * | Indicators used only for statistical purpose | | | | |

Comments on Indicators

I7 – Extra-mural practical training in FSQ & VPH is below the minimal value because of corona restrictions in Year-2 (2020/2021), which is registered as zero. Compensatory measures were implemented including the collection of organs/carcasses from slaughterhouses and demonstrations in facilities at Campus Sandnes and the repetition of the course for students in the following year (2021/2020) (see Covid Addendum – Appendix 10).

I13 – Only poultry units are visited. Rabbit units are not available in Norway.

Suggestions for improvement on Indicators

None.

Glossary

Academic and Research Administration: Unit in NMBU-VET administration

AR: Faculty' Appointment and employment authority for support staff positions

AU: Faculty' Appointment and employment authority for academic staff positions

BSL2: Biosafety level 2

Canvas: main e-learning platform for students at NMBU-VET

Course coordinator: Academic staff member responsible for a course in curriculum

EAEVE: European Association of Establishments for Veterinary Education

ECTS: European Credit Transfer System

ENQA: European Network for Quality Assurance in Higher Education

EPN: course planning system used at NMBU

EPT: External Practical Training

ESEVT: European System of Evaluation of Veterinary Training

ESG: Standards and Guidelines for Quality Assurance in the European Higher Education Area

Farm Service Unit: Ambulatory clinic of PRODMED, section Herd Health Services

FSQ: Food Safety and Quality

FTE: Full-Time Equivalent

HSE: Health, safety and environment

IT: Information Technology

Landax: digital system for quality management and control including HSE

NFSA: National Food Safety Authority

NMBU: Norwegian University of Life Science

NMBU-FU: The Research Committee at NMBU

NMBU-SU: The Academic Affairs Committee at NMBU

NMBU-VET: Faculty of Veterinary Medicine, NMBU

NOCUS: Norwegian Universities and Colleges Admission Service

NOKUT: Norwegian Agency for Quality Assurance in Education

NVH: Norwegian School of Veterinary Science (1935-2014)

NVI: Norwegian Veterinary Institute

OSCE: Objective Structured Clinical Examination

PARAFAG: Department of Paraclinical Sciences

PDCA: Plan-Do-Check-Adjust

PhD Committee: Faculty PhD Programme and Diplomate Education Committee

PREPAT: Department of Preclinical Sciences and Pathology

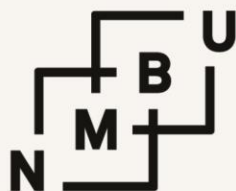
Profvet: electronic patient record system previously used by NMBU-VET

Provet: Cloud based electronic patient record system currently used by NMBU-VET

PRODMED: Department of Production Animal Clinical Sciences
QA: Quality Assurance
SER: Self Evaluation Report
SEVU: Center of Further and Continuing Education
SHF: Livestock Production Research Center (“University farm”)
SIKT: Norwegian Agency for Shared Services in Education and Research
SiÅs: Student welfare organization at NMBU
SOP: Standard Operating Procedure
SPORTFAMED: Department of Companion Animal Clinical Sciences
Study QA Report: Quality of Education Report
SWOT: Strengths, Weaknesses, Opportunities, Threats
UMB: University of Life Science (2005-2014)
VEE: Veterinary Education Establishment
VET: Faculty of Veterinary Medicine
VET-FU: Faculty Research Committee
VET-SR: Faculty’ Student Council
VET-SU: Faculty Academic Affairs Committee
VPH: Veterinary Public Health
VTH: Veterinary Teaching Hospital

List of appendices

- 01) Current academic staff, qualifications, their FTE, teaching responsibilities and departmental affiliations
- 02) Units of study of the core veterinary programme (including clinical rotations, EPT and graduation thesis): title, reference number, ECTS value, position in curriculum (year, semester), whether it is compulsory or elective, hours and modes of instruction, learning outcomes and their alignment with the ESEVT Day One Competences
- 03) Maps of the VEE and the intra-mural and extra-mural facilities used in the core veterinary programme
- 04) Written assessment procedures for QA
- 05) List of scientific publications from the VEE's academic staff in peer reviewed journals during the last three academic years
- 06) Strategic action plan 2023-2026
- 07) Implemented measures since last visitation
- 08) Curriculum courses contributing to EAEVE subject areas in Table 3.1.2.
- 09) EPT Agreement
- 10) Covid Addendum
- 11) HSE Manual
- 12) Table 10.1.1. List of major on-going research projects
- 13) ESEVT Indicators for the four Differentiation Tracks



**Faculty of
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