General introduction

Utrecht University (UU, founded in 1636) is comprised of seven faculties which collectively cover the full spectrum of research and education. The Faculty of Veterinary Medicine (FVM) is one of these faculties. FVM is the only Veterinary Faculty in The Netherlands. Intense collaboration of FVM with the Departments of Biology, Chemistry and Pharmaceutical Sciences (parts of the Faculty of Science), and the Faculty of Medicine (as part of the University Medical Center Utrecht -UMCU) and its affiliate the Hubrecht institute of the Royal Netherlands Academy of Arts and Sciences, stimulates strong cross-feeding of biomedical expertise. This collaboration is formalized within the setting of Utrecht Life Sciences.

FVM has witnessed relatively drastic changes since the last visit in 2007 of The American Veterinary Medical Association (AVMA)/Canadian Veterinary Medical Association (CVMA) and the European Association of Establishments for Veterinary Education (EAEVE), and the Dutch/Flanders Accreditation Organization (NVAO). Major changes include the renewal of all clinic buildings and the transition from the old education program with a four year doctoral phase and a two year clinical phase to a new Bachelor-Master program with a duration of two study periods of three years. Future goals of FVM are described in the Faculty of Veterinary Medicine Strategic Plan 2013-2017 (see Appendix 0.A).

ADMINISTRATIVE DATA

Curriculum Name: Bachelor’s degree in Veterinary Medicine and Master’s degree in Veterinary Medicine.

CROHO number: 56570 (Bachelor’s program) and 66570 (Master’s program).

Due date of the Organization of the Netherlands and Flanders accreditation (NVAO): December 2015.

Location: Utrecht University, Faculty of Veterinary Medicine (FVM), Yalelaan 7, 3584 CL Utrecht.

Level and Orientation: Veterinary Medicine is a Higher Education Curriculum and trains to the degree of Doctor of Veterinary Medicine (DVM).

CONTACTS

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PREPARATION OF THE SELF STUDY REPORT

This self-study report has been prepared to facilitate the seventh site visit by a combined team of the Council on Education of AVMA, the National Examining Board of CVMA, EAEVE, and the Accreditation Organization of NVAO. The site visit will take place from 21-25 September 2014.

The self-study report was compiled and edited by Jean de Gooijer (project leader accreditation), Martine van Koppen, Willeke Veltman from Educational and Student Affairs (OSZ), and Professor Wim Kremer DVM PhD, education director of FVM.

The writing process was supervised by a reading committee composed of the following staff members: Jan Haarhuis MSc and Trudi Miltenburg DVM PhD from OSZ, Robin van den Boom DVM PhD, teaching fellow department of the department Equine Health, Henk Haagman PhD, Professor and chairman of the department of Infectious Diseases and Immunology, and Peter van Beekelen DVM PhD, Professor Emeritus of Quality Improvement in Veterinary Education.

The draft report was discussed with the Faculty Board on June 23, 2014, who endorsed the outlines of the draft report. The text of the self-study report was finalized in the Educational Board meeting of June 25, 2014, and approved by Professor Anton Pipers former dean and presently vice president of the University Board and Professor Jos van Putten, acting dean of FVM/dean ad interim (the position of the dean is vacant) on July 9, 2014. Textual contributions were provided by the dean, clinic directors, OSZ, Chair Quality Improvement in Veterinary Education, sections of Human Resources and Finance and Control, Institute of Veterinary Sciences and relevant individual faculty members.
0. Objectives

0.1 Major Goals and Objectives of the Faculty of Veterinary Medicine

The mission of the Faculty of Veterinary Medicine is:
- To train students to the degree of Doctor of Veterinary Medicine (DVM) resulting in graduates that (i) are academically trained to optimally use their expertise and their innovative, judicious and creative skills, (ii) are able and willing to meet the challenges of providing high-quality clinical services, and (iii) are well educated in the fields of animal welfare and responsible animal care, as well as the associated risks and advantages for the animals themselves (Animal Health and Welfare), for human society (Public Health) and for the environment (Ecosystems);
- To conduct and train a new generation of scientists in cutting edge research in the field of animal health, disease and welfare and in related aspects of public health and the environment;
- To provide advanced clinical services and specialist training and to act as an innovation pioneer in the care and welfare of animals;
- To provide a solid scientific basis for societal debate and solutions to (global) societal challenges in the fields of animal welfare, animal health and related public health.

0.2 Methods and Tools to Measure Outcomes of Overall Instruction, Research and Service Program

All faculty, including clinical staff, is evaluated on a regular basis in the so-called Performance & Development (P&C) interview. This individual evaluation concerns all staff duties as well as the career perspectives of staff members. All aspects of education, research and clinical services are evaluated at departmental level on regular basis in the Quality Assessment Cycle (see also Appendix 1.B). The outcome is discussed yearly with the course and program coordinators, Departmental Boards, Faculty Board, and University Board during the P&C-meetings. Regular evaluations of educational program and courses, and research performance are carried out by the Educational Board, Institute of Veterinary Research, and Faculty Board. The procedures are described in protocols (see appendices at Standard 9 and 10). The Chair 'Quality Improvement in Veterinary Education' focuses on research of veterinary education. The mission of the Chair is to provide the dean, director of education, and Educational Board with evidence based recommendations about innovation in education and didactics, and to bridge the gap between results of educational research and the daily educational practices.

0.3 Major Strengths and Weaknesses of FVM

Organization

Strength:
- Transparent organizational structure at all levels with a strong and central position of the dean, who has a full mandate from the University Board regarding FVM;
- Individual responsibility and accountability of staff members within the organization;
- Quality assessment increasingly implemented throughout the entire organization.

Weaknesses:
- Limited attention for leadership potential throughout the organization.

Finances

Strength:
- Relatively healthy financial situation considering state of the economy.

Weaknesses:
- Limited flexibility to rapidly adapt the number of staff to changes in the market situation;
- Relatively little awareness among staff of costs and profitability within the organization;
- Management information system is not easy accessible and useful for academic staff.

Physical facilities

Strength:
- Up to date and high-standard (world leading) physical facilities.
**Strengths:**
- State-of-the-art clinical services benefit from outstanding infrastructure and academic environment and provide high case load for students;
- Availability of high standard, University owned Farm Animal Health Practice;
- Good network of affiliated practices with excellent opportunity for externships and clinical hands-on training for students.

**Weaknesses:**
- No major weaknesses.

**Library and Information Resources**
**Strength:**
- FVM library with large collection of veterinary and related literature;
- Dedicated student learning environment and facilities;
- World wide access to open and online digital information resources.

**Weaknesses:**
- Study Facilities within the Learning Environment.

**Students**
**Strength:**
- Exceptional educational community, with a strong and active student society and a recognizable campus.
- Sometimes limited awareness with aspiring students of the study program and their career perspectives;

**Weaknesses:**
- Limited interest of students to enter the Farm Animal Track;
- Forthcoming government enforced introduction of a costly new admission system.

**Admission**
**Strength:**
- Fixed number of admitted student (numerus fixus) (225 students /yr: ~70 students in Farm Animal Track; ~30 MSc students in Equine Track, and 110 MSc students in Companion Animal Track);
- Fair admission policy partly based on a weighed lottery, matching and selection (in line with Dutch Government regulations).

**Weaknesses:**
- Dutch language of the study program limits recruitment of foreign students;
- Limited number of students in the Farm Animal Track;
- Forthcoming government enforced introduction of a costly new admission system.

**Faculty**
**Strength:**
- Good system of educational staff development with different levels of qualifications and training (Basic Teaching Qualification (BKO); Senior Teaching Qualification (SKO); University teaching courses at different levels: congresses on university teaching);
- Strong combination of research, education and clinical services.

**Weaknesses:**
- Limited mobility of staff mainly because FVM is the only Veterinary Faculty in The Netherlands;
- Increasing pressure on staff to meet the high standards in the three professional areas of education, research and clinical service.

**Curriculum**
**Strength:**
- Early-on integration of clinical and basic veterinary sciences;
- Interdisciplinary nature of educational blocks;
- Competency-driven educational philosophy;

**Outcomes**
**Strength:**
- Nearly 100% of incoming Master's students succeeds in graduating as DVM;
- Undergraduates very sought-after in international exchange programs;
- Alumni are broadly qualified and sought-after abroad.

**Weaknesses:**
- Difficultly recruiting veterinary students in fundamental research.

**0.4 RECOMMENDATIONS**

**Organization**
- Investing timely in the development of a leadership scouting and training program to ensure full competence of future staff.

**Finances**
- Investing in availability of management information to support staff in their management;
- Investing in new ideas and possibilities for research funding and stimulating entrepreneurship of the staff.

**Physical facilities**
- To optimize the use of facilities to reduce housing costs in favor of teaching budget.

**Clinical resources**
- Redesigning the package of clinical services into a client-orientated, cost-effective organization with a maximum diversity in case load.

**Library**
- User-friendliness of the electronic learning management system environment needs further improvement and development;
- Investing more in and take advantage of the rapid development and accessibility of e-learning modules;
- Renewing multi-functional for better and reliable print scan capacity.

**Students**
- To increase the involvement of students in daily work in the clinic to further increase their clinical skills, and responsible attitude, and also to improve competencies such as management and communication.

**Admission**
- Student recruitment and admission policies should be more in line with the future competencies expected from veterinarians by the society.
Faculty
- To continue the process of task differentiation of FVM to reduce workload and increase quality of work of staff.

Curriculum
- Education program may need regular revision to timely anticipate the changes in (future) professional and societal demands. Issues that may gain more attention include 'One Health, One Medicine', academic professionalism, entrepreneurship and internationalization;
- To invest in new didactic approaches based on new and innovative ICT tools and blended learning.

Research
- To strengthen the interaction of the fundamental and applied research programs (Advanced Veterinary Research-AVR) to increase exposure of veterinary students to advanced fundamental research;
- Finding new ways and coalitions for research funding and stimulate entrepreneurship of the researchers.

Outcomes
- Further implementation of program outcomes into the curriculum with specific attention for assessments;
- Improving alumni policy to get additional and adequate information from the professional field about the outcome and employment of graduates at different moments after graduation.

1 Organization

1.1 MISSION OF THE FACULTY OF VETERINARY MEDICINE
The mission and major goals and objectives of FVM are described in Standard 0.1 Objectives.

1.2 BODIES THAT ACCREDIT THE UNIVERSITY AND CURRENT STATUS OF ACCREDITATION

NVAO accreditation:
All higher education training programs in The Netherlands and Flanders are currently accredited by NVAO. This organization was established by international treaty in 2003. NVAO independently guarantees the quality of Higher Education in The Netherlands and Flanders via assessment and accreditation programs, and helps increase this quality. In addition, NVAO contributes to raising quality awareness within Higher Education and advancing the position of Higher Education in The Netherlands and Flanders within national and international context. In 2007 NVAO accepted the accreditation report of EAEVE.

The accreditation system comprises two assessment frameworks:
- Institutional (UU) level framework to be used for "institutional quality assurance assessments", the so-called institutional quality assurance assessment; UU is accredited;
- Program-level framework with "limited assessment criteria" for the accreditation of institutions whose institutional quality assurance assessment produced a positive result, the so-called limited program assessment. FVM goes up for accreditation on this program-level.

For further details about NVAO and the assessment frameworks, see http://www.nvao.net/, and Appendix Standard 1.A.

AVMA/CVMA accreditation:
A combined team of the Council on AVMA, the National Examining Board of CVMA, EAEVE and NVAO visit FVM from 21-25 September 2014. Previous accreditation visits were made in 1973, 1978, 1985, 1992, 2000 and 2007. The current status is 'full accreditation'.

EAEVE accreditation:
FVM is also accredited by EAEVE. In 1993, 2000 and 2007 two members of EAEVE were added to the AVMA/CVMA site visit team. Since 1993 AVMA/CVMA accreditation was recognized by EAEVE as well. Current status is full accreditation. For further details about EAEVE, see http://www.eaeve.org/, and Appendix Standard 1.A.

VSNU research accreditation:
Members of the Supervisory Board are:

The Minister of Education, Culture and Science appoints the members of the Supervisory Board. One of its members maintains a confidential relationship with the University Council.

The Executive Board informs the Supervisory Board of all major developments and events taking place at UU.

Approval of the Supervisory Board on the Strategic Plan, the Annual Report and the Annual Accounts.

The Supervisory Board is Utrecht University's statutory supervisory body. The Executive Board requires the approval of the Supervisory Board on the Strategic Plan, the Annual Report and the Annual Accounts.

Executive Board Utrecht University

The Executive Board is competent in all affairs of the university as a whole. It is responsible for the general policy on education and research. It supplies the faculties with the general scope for their policy making.

Moreover, the Executive Board is responsible for the university policy on personnel, finances, housing, physical facilities and equipment, and concern management. The deans are authorized with most of the specific rights of approval and advice in topics on university policy and administration. The Executive Board appoints the deans after a confidential hearing of the Faculty Council.

Members of the Executive Board are:

- Marjan Oudeman LLM, President;
- Professor Bert van der Zwaan PhD, Principal (Rector Magnificus);
- Professor Anton Pijpers DVM PhD, Vice-President.

Board of Deans

The principal of UU and the seven deans of the faculties together form the Board of Deans. Its main task is to advise on establishment of endowed chairs, the nomination of professors, and award doctorates and honorary doctorates. There is a monthly meeting between the principal and the deans.

University Council

The University Council consults with the Executive Board about topical issues, which it has statutory authority to advise upon, and advises on matters of university policy and management. The University Council consists of twelve students and twelve staff members, both academic (eight) and non-academic (four). Students are elected for a one-year term and staff members for a term of two years.

Other faculties of Utrecht University

Faculty of Humanities
Faculty of Law, Economics & Governance
Faculty of Social and Behavioral Sciences

1.3 ORGANIZATIONAL DESIGN OF FVM

Dean and Faculty Board

The dean has overall responsibility for the faculty and reports directly to the Executive Board of UU, and delegates operational responsibility for the faculty to the managing director of the faculty, Wim Dirksen, PhD.

The dean is responsible for the primary duties of education, research and clinical services and is directly in charge of all core professors. The Faculty Board meets biweekly and has six members.

Board of Studies Undergraduate School (Bachelor) and Veterinary School (Master)

The dean appoints an education director who is in charge of the Undergraduate School and the Veterinary School. Each school has a Board of Studies (BoS), which advises the director on matters concerning the organization and quality of the education. The dean appoints the members of the BoS. For practical reasons the education director has decided that the composition of the BoS is identical. A student is always appointed to represent the student community.

Faculty Office

The faculty office supports faculty’s primary operations on education, research and clinical services. The managing director heads the faculty office, which comprises the following sections: Administrative and Management Support/Deans’ Office, Human Resources, Finance and Control, Educational and Student Affairs, Research, ICT, Multimedia, Facilities and Housing and Labor Conditions, and Communication.
Department Management

FVM has eight departments. The departments are responsible for carrying out FVM's primary tasks: education, research and clinical services. Each department has a management team consisting of at least a chairperson (a professor appointed by the dean), and an operational manager. The three clinical departments have one joint management team.

Meeting with department chairs

Every 1-2 months, the dean consults with the chairpersons of the departments on matters concerning faculty policy and strategy. The dean also has a monthly bilateral consultation with the department chairs.

Meeting with department managers

Every month, the managing director of FVM consults with the operational managers of the departments. This is a type of meeting similar to the dean's consultation with the department chairs, but with focus on operational issues.

Faculty Council

The Faculty Council is the first representative advisory body of the faculty, advises the Faculty Board and has a say in matters of faculty policy and management, particularly in personnel and financial matters. The Faculty Council meets with the dean five times a year, and consists of eight students and eight staff members. Students are elected for a one-year term and are also member of the Study Program Committee, and staff members for a term of two years, and appoints an independent chairperson.

Examination committees

The independent examination committees have overall control on the level of the graduates. The members are appointed by the dean but function autonomously. Governance and quality assurance of the Undergraduate school (Bachelor) and the Veterinary School (Master) is described in Appendix 1.B: Tasks and responsibilities related to education.

1.5 ROLE OF STAFF AND STUDENTS IN THE GOVERNANCE OF FVM

Staff members and students participate in the management organization of both Utrecht University and FVM. In the framework of the Dutch legislation they have limited rights of approval. Their participation, mainly in advisory capacity, is embodied in the University Council, Faculty Council and Study Program Committee in which both employees and students are equally represented. On the level of FVM, staff and students actively participate in nearly all faculty bodies and committees. Apart from that, students have organized themselves in the Student Council and many student associations (see Standard 6 Students). The Student Council is the coordinating committee of all student representatives in the different faculty body's and committees, strongly participates in the (student) evaluation of the education program, and looks after the interests of the veterinary students.

1.6 PLANS TO CHANGE FVM'S CURRENT ORGANIZATION

There is currently no plan to change the organizational structure of FVM.

2. Finances

2.1 COMPLETE TABLES FOR THE PAST FIVE YEARS AND ANALYZE TRENDS FOR EACH CATEGORY

<table>
<thead>
<tr>
<th>Instruction</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>% change</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>8,432,361</td>
<td>8,649,601</td>
<td>8,563,962</td>
<td>8,475,170</td>
<td>8,394,378</td>
<td>0%</td>
</tr>
<tr>
<td>Academic support</td>
<td>2,315,871</td>
<td>2,292,961</td>
<td>2,265,772</td>
<td>2,239,995</td>
<td>2,216,516</td>
<td>4%</td>
</tr>
<tr>
<td>Student Services</td>
<td>2,529,952</td>
<td>2,603,055</td>
<td>2,579,395</td>
<td>2,545,679</td>
<td>2,495,793</td>
<td>-2%</td>
</tr>
<tr>
<td>Other</td>
<td>1,298,303</td>
<td>1,107,667</td>
<td>1,412,430</td>
<td>1,383,226</td>
<td>1,504,678</td>
<td>16%</td>
</tr>
</tbody>
</table>

Table A: Total Expenditures in € for past 5 Fiscal Years; Direct and Indirect Expenses

Trend analyzes expenses

During the period 2009-2013, total expenses increased by 4% (from € 88.5 m to € 91.7 m), while the overall revenue increased by 6%. During the evaluation period (2009-2013), FVM has been confronted with increasing housing costs due to a renewed and strict university policy on housing investments. Whereas state appropriations and tuition & fees (revenues) increased by only € 0.3 m over the course of these five years, housing costs grew by € 2.3 m. The new policy means that all university faculties have to pay their complete housing costs. In the years after 2010, these costs remained stable because FVM returned housing to the university. If the policy does not change, the housing costs will further increase after 2018 due to the use of new buildings. The policy of FVM, however, is to keep costs stable by more efficient use of office and laboratory space and the reduction in education/practical rooms and lecture halls as a result of the change of the educational concept to blended learning (see Standard 9 Curriculum). FVM succeeded in stabilizing the expenses on primary tasks while maintaining its high quality of output in education, clinical services and research. This has been realized without compensation of increased costs of salaries. The costs of the teaching hospital increased by 5%, while the revenues increased by about 32%. For the other indirect costs it should be noticed that over the past few years, more costs have been added to this category because of the introduction of a new university system in 2011, implying the foundation of a number of central service centers in the area of support and facilities. Examples include cleaning, ICT, telephone and financial administration. The calculation of these costs, which used to be paid by the departments directly, has now been placed under other indirect costs. The expenses for research have decreased slightly from € 30.7 m to € 30.1 m, with a clear shift from public to contract research.

Self-Study Report 2014 – Faculty of Veterinary Medicine

Self-Study Report 2014 – Faculty of Veterinary Medicine
Direct governmental budget received by FVM via UU, is more or less stable because it is directly based on trend analysis revenues supported professional teaching program. However, the rise in state appropriations over the last 14% because of improved study behavior. FVM expects that this post will rise even more over the coming 2.3 TREND ANALYSIS OF REVENUE SOURCES SUPPORTED PROFESSIONAL TEACHING PROGRAM

- **Trends analysis revenues**
  - Direct governmental budget received by FVM via UU, is more or less stable because it is directly based on student numbers and diplomas issued each year. It must be mentioned that median salaries of students in 2013 were higher than in 2009. In addition, FVM receives a stable budget (approx. € 25 m p/year) from UU (i.e. government) in order to finance its teaching hospital. However, the rise in state appropriations over the last five years did not keep pace with increased housing costs (see Table A). Tuition fees received by UU grew by 14% because of improved study behavior. FVM expects that this post will rise even more over the coming period.
  - The policy of FVM has been focused on increasing external revenues. Despite the economic crisis, the faculty has been successful in research (14%) as well as in the total hospital income (32%) with a stabilization of the extra input of support staff and materials. For clinical teaching there is an extra reimbursement that such as housing, cleaning, waste disposal and computer network are managed at the central faculty level.

2.4 REVENUES OVER THE PAST FIVE YEARS THAT IMPACTED ABILITY TO PROVIDE A CONTEMPORARY PROFESSIONAL TEACHING PROGRAM

- **Table 2: College Revenues (Sources or Funds) from all Sources for the past 5 fiscal years**

2.5 HOSPITAL INCOME IN COMPARISON TO TOTAL HOSPITAL OPERATIONAL COSTS

- **Table 3: Hospital income in comparison to total hospital operational costs**

2.6 DESCRIPTION OF ANTICIPATED TRENDS IN FUTURE REVENUES AND EXPENDITURES

- For the past seven years, FVM has used an internal distribution model that is completely based on task-related budgeting. Of the total of € 58 m government funding, € 1.4 m can be used by the research management, educational board or FVM management as a so-called policy instrument. Budgets for infrastructure facilities, such as housing, cleaning, waste disposal and computer network are managed at the department level. € 5 m is available for the support of the primary process by FVM’s management and the faculty office (including the operational managers of the departments).

2.7 translating the old teaching program to the new teaching program according to the Bachelor-Master system has resulted in an increased number of diplomas issued in the period 2012-2014. These numbers will positively influence the State Appropriations in the years 2015-2018. Moreover, the tuition fees from the new international One Health Master program, are expected to increase the revenues.

2.8 comment on strengths/weaknesses in revenues over the past five years

- **Strengths**
  - Stable government funding and a healthy financial situation. The strong financial buffer built up until 2003 enabled FVM to counterbalance additional costs due to organizational reorganizations in 2005 and 2010. FVM’s reserve is still about 6% of the total yearly turnover;
  - Strong position of FVM’s research (a very positive international visitation in 2012) which brings numerous fixus.

- **Weaknesses**
  - Clinical services are currently in a process of redesigning into a client-oriented organization. This transition is costly and takes much effort from staff and organization.

2.9 Trend analysis of revenue sources that supported the professional teaching program

- Diminishing government contributions to education (6%);
- More budget necessary from 2009-2013 for housing costs;
- Increasing in tuitions and fees;
- Higher hospital income.

<table>
<thead>
<tr>
<th>Year</th>
<th>Hospital Income (€)</th>
<th>Total Hospital Operational Costs</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>8,086,791</td>
<td>32,856,606</td>
<td>24%</td>
</tr>
<tr>
<td>2010</td>
<td>9,231,990</td>
<td>36,033,590</td>
<td>25%</td>
</tr>
<tr>
<td>2011</td>
<td>9,826,529</td>
<td>36,310,645</td>
<td>27%</td>
</tr>
<tr>
<td>2012</td>
<td>10,187,790</td>
<td>37,592,930</td>
<td>27%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year</th>
<th>In € 2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>% change</th>
<th>€ change</th>
</tr>
</thead>
<tbody>
<tr>
<td>State Appropriations</td>
<td>12,786,109</td>
<td>12,841,223</td>
<td>12,235,718</td>
<td>11,940,036</td>
<td>11,603,579</td>
<td>-6%</td>
<td>-782,530</td>
</tr>
<tr>
<td>Budget For Housing (SA)</td>
<td>10,876,800</td>
<td>12,145,608</td>
<td>11,967,000</td>
<td>13,090,800</td>
<td>12,267,600</td>
<td>15%</td>
<td>1,390,000</td>
</tr>
<tr>
<td>Tuition and Fees</td>
<td>2,109,906</td>
<td>2,220,777</td>
<td>2,280,798</td>
<td>2,374,304</td>
<td>2,404,271</td>
<td>14%</td>
<td>297,365</td>
</tr>
<tr>
<td>Sales and Services</td>
<td>8,086,791</td>
<td>9,231,990</td>
<td>9,826,529</td>
<td>10,187,790</td>
<td>9,819,600</td>
<td>23</td>
<td>1,332,855</td>
</tr>
<tr>
<td>Total Hospital Operational costs</td>
<td>33,856,606</td>
<td>36,639,590</td>
<td>36,310,645</td>
<td>37,592,930</td>
<td>36,595,100</td>
<td>8%</td>
<td>2,738,494</td>
</tr>
</tbody>
</table>

Trends analysis of revenue sources that have supported the professional teaching program
Research). Research management can also decide to reinforce certain research areas or initiatives with an additional “research policy” budget.

This system results in a more or less stable and transparent department budget for several years, which optimize the possibilities for a realistic personnel planning, career development and perspective, and the support of promising staff.

3. Physical Facilities and Equipment

3.1 DESCRIPTION OF MAJOR FUNCTIONS OF FACILITIES IN FULLFILLING FVM’S MISSION

FVM is situated on a campus on the Yalelaan in the Uithof in Utrecht (Utrecht Science Park). The Utrecht Science Park is also home to the University Medical Center (including the Faculty of Medicine), the Faculty of Science, Social and Behavioral Science and the Faculty of Geoscience, and several innovative companies and research organizations and public (health) care institutions. This unique combination has created a perfect match between innovative (Life Sciences) knowledge, public organizations and business. In short: a perfect location for an innovative and state-of-the-art of the Faculty of Veterinary Medicine.

Androclus Building – Yalelaan 1:
The main educational facilities are clustered in the Androclus Building. The ground and first floor of this building house lecture halls, seminar rooms, students’ club rooms and the learning environment (see Standard 5). The Faculty and Student Restaurants, and the Dutch Veterinary Student Society (DVK) house on the ground floor, as well as the departments of Pathobiology, and Infectious Diseases and Immunology (research, education, necropsy and dissections, administration). At request of the students, in 2014 a pilot project started to explore the possible use of the restaurant as study room and meeting point. From 2011-2014, a preservation project was conducted in order to guarantee safety and to keep the building up and running until the planned renewal in 2018.

Nieuw Gildestein – Yalelaan 2:
Departments of Biochemistry and Cell Biology, Animals in Science and Society, the Institute for Risk Assessment Sciences (IRAS)/division Environmental Epidemiology (EEPI) and the department of Veterinary Public Health (VPH). The building is mainly used for research and administrative functions for these departments, and there are a few educational rooms (mainly lab rooms). CLARF (Central Laboratory Animal Research Facility) is also housed in this building (entrance Bolognalaan 50).

Department of Clinical Sciences of Companion Animals - Prof.dr. H. Jacob Building- Yalelaan 10B:
High quality and specialized veterinary care is the main focus of the department of Clinical Sciences of Companion Animals. Additionally, in 2011 a first opinion Emergency Service (ES) was opened that also offers general emergency services to the regional community. The building contains research facilities (e.g. different wards for research animals), teaching facilities, and departmental administrative functions. Teaching facilities, i.e. lecture hall, several rooms for dry and wet labs, and a computer/student study area are grouped together. Apart from twenty consulting rooms (fifteen regular, two emergency, and three exotic species and birds/out-of-hour emergency rooms), the building offers six surgical theaters with additional preparation and recovery facilities, three wards for patients: a regular ward (with twenty cages) and a medium care unit with facilities for seven dogs and twelve cats (the medium care facilities are shared with ES). The intensive care unit (ten regular cages, two oxygen cages, and one ventilation station) also has an isolation ward nearby with two additional cages. The building has extensive facilities for birds and exotics with a separate quarantine area for birds on the west side of the building. In 2009 a bunker was added to the existing building to house the radiotherapy facility. The division of Diagnostic Imaging is specialized in all current imaging modalities: X-ray, ultrasonography, CT, MRI (1.5 Tesla), and SPECT.

Department of Equine Sciences - Willem C. Schimmel Building- Yalelaan 112:
This building houses the Equine University Clinic, including the Ambulatory Clinic for Horses, and all clinical facilities for education and research, besides of departmental administrative functions. The renovation of the department, which involved a complete overhaul of the building and replacement of most equipment, was completed in 2007. In addition to the polyclinic, the surgical unit has two surgery rooms for interventions under general anesthesia, one surgery room for standing surgery such as laparoscopy and one skills lab/surgical theater that can be used for training of students and/or research; and special (neonatal) intensive-care boxes. Furthermore, the region of Utrecht is served with a first line Ambulatory Clinic. The department runs a substantive clinical scientific research program and houses a lecture hall and three practical rooms for educational purposes. The original stables have been changed from large open halls with many pens to smaller units, making it possible to compartmentalize groups of animals. Six separated individual isolation units, each with its own hygiene barrier (changing room), are available to treat horses suspected of infectious disease. The quality of the clinic and surgery rooms with associated support rooms is now state-of-the-art, enabling optimal functioning with respect to hygiene and efficiency. The skills lab is an important feature of the department, as well as the force plate and treadmill that are located in the main building and are being used for both clinical services and research.
Jeannette Donker-Voet (JDV) Building:
Completed in 2006 and houses all clinical research laboratories. In 2012, IRAS/Toxicology moved its administrative and research activities into this building. The veterinary pharmacy was renovated in 2013, and the production room now satisfies high quality standards. The JDV Building includes a restaurant for staff, students and patient owners.

Department of Farm Animal Health - Marinus G. de Bruin (MGB) Building - Yalelaan 7:
Apart from research facilities and facilities for seminars, self-study facilities and rooms for departmental administrative functions, this building houses a large bovine, and smaller pig and poultry clinic (the latter including a dissections room). The farm animal clinic as a whole is considered as an isolation unit, which means that the patients are bought for teaching or research and do not return to the owner. In addition, the clinic is only accessible for staff and students after passing of a hygiene barrier following strict protocols. In order to meet the need for teaching and research, the clinical facilities have multi-functional research stables for bovine, pigs and poultry, an operating theatre, a separate isolation room, a pharmacy, a sterilization unit and many rooms for labs, self-study and skills lab. There is also a local learning environment that offers students space for seminars, self-study, computer facilities, a limited library facility and a faculty for coffee, tea and refreshments in front of and behind the hygiene barriers. The building also houses main administrative offices such as the dean’s office, human resources offices, financial administration and research support offices.

The Tolakker teaching Farm:
“De Tolakker” is FVM’s production animal farm. Students are introduced to production animals and farm management. Furthermore, the farm offers opportunities for research in the zoo-technical field. FVM’s General Veterinary Service manages the pastures and farmland (140 ha). The farmland is used for fodder production and grazing cattle for the clinics and “De Tolakker”. The Tolakker unit is strongly related to the Education Clinic of the department of Farm Animal Health, and contains:
- Organic dairy cattle farm with 70 dairy cows and young stock, with an average yearly production of 9,600 kg/year;
- Flock of 250 sheep for education and research;
- Pig production farm with 200 sows, kept at the medium requirements for sustainable pig production.
“De Tolakker” has facilities to teach small groups of students.

University Farm Animal Practice (Universitaire Landbouwhuisdieren Praktijk (ULP)):
The former Ambulatory Clinic for Farm Animals was privatized in 2009 and is no longer situated on FVM campus. It is currently located in Harmelen, a village 20 km west of Utrecht. The University Holding owns this private practice, and two members (chair and regular member) represent FVM in the Supervisory Board of ULP. ULP offers students great opportunities and high farm animal case load (individual and farm visits) for bovine as well as for swine during their rotations in the Master’s program. At present ULP houses in a state-of-the-art building with all required facilities for students and a farm animal practice. ULP is one of the largest bovine practices of The Netherlands (approx. 40,000 cattle at 350 farms), and offers excellent facilities and cases for students, but also for applied research.

Off-campus veterinary hospitals used for Teaching:
A number of off-campus veterinary hospitals/practices used for teaching: Farm Animal practices: 35; Companion Animal practices: 22; Equine practices: 6

Infrastructure:
Renovated faculty buildings are of high quality, as are the technical installations, which are suited to the functions of the buildings. The data network has been renewed and upgraded from 10mb/s to 100 Mb/s per connection.

3.2. AREA MAP, DISTANCE AND TRAVEL TIME TO OFF-CAMPUS FACILITIES
The facilities are to be found in the south-east area of Utrecht Science park. Apart from the built-up area, FVM has 140 ha (345 acres) of pasture land in exploitation. Exams are administered in the various lecture halls on the university campus. For ULP, abattoirs, poultry, excursions and student internships education facilities and companies elsewhere in The Netherlands are visited.

3.3 SAFETY AND FACILITIES MANAGEMENT PLAN
Safety during work and study:
- Purchase and stock of chemical substances are registered in Utrecht University’s GROS (dangerous goods registration and tracing) system, including information about (dangerous) substances. FVM meets the working conditions regulations regarding the registration of chemicals through Chemwatch, and the storage of dangerous substances conforms with the PGS-15 regulations;
- The booklet ‘Working in a laboratory’ is available (also via Internet), and describes the various risks and general rules associated with working in a specific lab;
- Biological agents: for working with biological agents, the procedures and protocols of Utrecht University, department Safety and Environment are adopted;
- Radioactive substances: ten certified radiation safety officers managing different facilities and one certified coordinating safety radiation officer handles all matters regarding radiation safety. FVM conforms to the requirements of the Radiation Protection Decree and the Transportation of Fissionable Materials, Ores and Radioactive Materials Decree. All radioactive experiments follow a protocol in which risks are evaluated. Clear signs at the entrance of the facilities provide instructions to firemen and first-aid workers, and telephone numbers of the radiation safety officers;
- Working Alone Protocol: FVM enforces strict safety measures for employees working alone, as described in the protocol. If working alone in laboratories, safety telephones are available. Students are not permitted to work alone;
- A waste disposal policy prescribes rules for the handling of hazardous wastes;
• Registration of accidents and incidents: on paper and on FVM’s Intranet a ‘yellow card’ is available to report incidents and (almost) accidents;
• A biosecurity officer has been appointed to handle all matters regarding genetically modified organisms, and therefore meets the requirements of the Dutch law.

Emergency response team (ERT): There is an emergency response team in each building of FVM. All members are trained and certified on annual basis. ERT teams in laboratories are trained and know the risks of incidents with high-risk substances. A disaster plan for each building describes the hazards and how they must be countered. A drill is held at least once a year in each building to test how ERT teams deal with emergencies and evacuation of the building. Every room has a ‘What to do in case’ card listing the actions that should be taken in event of an emergency. This information is also available on FVM’s Intranet. For high-risk rooms, a disaster plan describes the procedure in case the room must be entered in event of an emergency, what may and may not be done, and how the room can be exited again. External staff (technical services, security) are aware of these procedures. All laboratories are characterized by pictograms (VRU-marking), by which means the fire department knows how to deal with conditions in the laboratory.

Working with animals: Special measures have been taken and facilities provided to protect the health of staff and students who come into contact with animals at workplaces where animals are present (stalls, clinics, practical rooms and lecture theatres). These measures may include construction measures (e.g., an emergency route in horse stalls, facilities to feed animals from outside the enclosure, a gallery to observe a horse be operated upon), personal protection equipment, and rules not to enter the kennel of an unknown dog or cat. Vaccination and periodic employee health check (PAGO): Services, security) are also aware of these procedures. All laboratories are characterized by pictograms (VRU-marting), by which means the fire department knows how to deal with conditions in the laboratory. All laboratory animal staff is vaccinated against tetanus, and staff members may refresh their tetanus vaccination, if necessary. There also is a vaccination scheme to administer a preventive flu vaccination to staff members and students when they are in possible contact with flu viruses due to their work (research on flu viruses, contact with pigs or poultry). In special cases, staff members and students are offered a specific vaccination (e.g. in case of research with human material). A periodic employee health check (hearing test) is offered to all staff members who work with pigs (veterinarians, caretakers) and the farrier. Staff members working with laboratory animals are offered a health check regarding the possible development of an allergy. Pregnancy: Policy prescribes that work must be adapted to suit pregnant staff members and students. If it is evident a woman is carrying out work that could affect the unborn child, it may be decided that her task must be adapted. This also applies to breast-feeding women. For pregnant students, measures could be taken to adapt their study or to stop temporarily.

Personal protection equipment: In addition to normal working clothes and gloves, FVM makes personal protection equipment available where necessary. This covers hearing protection equipment for farriers and pig attendants (in case of noise pollution), as well as dust masks for those who work with laboratory animals. Boots as well as overalls are also available in the clinics. Physical stress: Physical stress is continuously taken into account. Working areas meet the ergonomic requirements. In the curriculum, a short course on physical stress and its prevention has been included for fifth-year students. They are trained to deal with job-related physical stress in a responsible way.

RSI/CANS information: Introductory information for students and staff members regarding working at computers, including the risk of CANS, is to be find on FVM’s website. For students and staff work pace as interval software is available. Staff members may ask for their workplace to be evaluated if they have problems with it.

Working hours: FVM meets the requirements of working hours of veterinarians and caretakers by recording the Registration of Working hours. Annual audits inspect work schedules and actualization of working hours. The results are presented along with recommendations of improvement, if necessary.

3.4 ADEQUACY OF FACILITIES

• Classrooms, laboratories and other instructional environments and related equipment: All lecture facilities, laboratories and seminar rooms are up to date. The equipment in the lecture halls was renewed in 2012. All lecture rooms and seminar rooms are equipped with state-of-the-arts audiovisual facilities.
• Teaching hospital(s), pharmacy, diagnostic imaging, diagnostic support services, isolation facilities, intensive/critical care, necropsy, and related equipment are recently reconstructed and partly rebuilt, and are now considered to be state-of-the-art;
• Facilities for maintenance of teaching and research animals: Due to significant investments in our clinical facilities over the last ten years, we have very well-equipped and state-of-the-art facilities for clinical teaching and excellent accommodations for our teaching and research animals (see also Standard 3.1).
• FVM had to invest in a new sow facility on the “Tolakker farm” for 200 sows in order to meet the forthcoming requirements and legislation on sustainable and commercial pig farming in The Netherlands.

Within five years, the necropsy rooms at the Androclus Building will be moved to another location on campus. Further improvement of the utilization of these facilities will be required in the near future, in order to constrain housing costs;
• Research facilities and equipment: There are extensive high-quality research facilities that are adequate for the challenges of the near future at many locations on the campus;
• Since the move of the administrative and faculty offices to the Martinus G. de Bruin Building, all offices are adequate and satisfactory for the staff working at these offices;
• Service areas for students (for example, lounges, cafeteria, etc.), are up to date. However, more work places to facilitate student self-study and group work will be needed in the future;
• In the Learning Environment students have different places to study, with facilities for individual studying as well as to collaborate in group sessions. If students want to use faculty desktop computers, there are specific rooms with pc’s in the Androclus Building and at several places within our clinics. The Veterinary Students Society (DSK) has lounge area available for students. More information can be found in Standard 5. For training and rehearsal clinical skills there are facilities within the clinic areas.

3.5 POSTED PROTOCOLS FOR SAFETY AND EDUCATIONAL PURPOSES

Up-to-date isolation facilities are provided in every clinic. These facilities consist of a functionally separated unit with a hygiene airlock for students and staff. Protocols are posted in the isolation facilities and the facilities used for instruction in isolation procedures, in order to ensure good clinical practice and to optimize the training of students (and staff) and the care for animals, which need this special care.

3.6 CURRENT PLANS FOR IMPROVEMENT

The Androclus Building and Nieuw Gildestein will be replaced by new buildings in the period 2018-2022.
In the first phase a new research building will be established to house the departments of Pathobiology, and Infectious Diseases and Immunology, Biochemistry and Cell Biology (completed in 2018). The second phase involves establishment of an educational part for Anatomy and Pathobiology, and a research part for the Departments Animals, Science and Society and IRAS-VHP and EEPI (completed in 2020). The third phase will accommodate the educational building, learning environment and the departments DWM, IRAS VPH, IRAS EEPI and the restaurant. Sustainability, which is one of the strategic themes of Utrecht University, will be a major aspect in the design of the new buildings. The BREEAM1 systematics will be used.

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1 http://www.breeam.org/
4. Clinical Resources

4.1 TABLES A, B, AND C AND ANALYSIS OF TRENDS OVER LAST FIVE YEARS

<table>
<thead>
<tr>
<th>Animal species</th>
<th># of patient visits</th>
<th>Number of hospitalized days*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bovine</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Canine</td>
<td>8472</td>
<td>6659</td>
</tr>
<tr>
<td>Feline</td>
<td>1338</td>
<td>1372</td>
</tr>
<tr>
<td>Caprine</td>
<td>66</td>
<td>12</td>
</tr>
<tr>
<td>Equine</td>
<td>6177</td>
<td>6997</td>
</tr>
<tr>
<td>Kine</td>
<td>94</td>
<td>12</td>
</tr>
<tr>
<td>Caged pet birds</td>
<td>383</td>
<td>416</td>
</tr>
<tr>
<td>Caged pet animals</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Avian Wildlife</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Requested number of hospitalized days cannot be provided from our electronic medical record system; ** Target number of diseased pregnant animals bought for teaching purposes; approx. 85% are bovine, 15% ovine/caprine; *** Pregnant or diseased animals bought from commercial farms for educational purposes (see 4.8): number of hospitalized days has no value.

Reduction in (especially) porcine patients in 2013 is due to the normalization of student influx after out-phasing of students of the 2001 Curriculum. On top of the number of patients mentioned in these tables, students are exposed to patients and patient handling in affiliated off campus Veterinary Hospitals in The Netherlands (companion animals, equine or farm animals) during the extra mural studies for a period of 8 weeks in the Master’s program (see Standard 3, 4.4, and 9).

### Table A: Teaching hospital

#### Animal species

- **Bovine**:
  - 2009: 289
  - 2010: 293
  - 2011: 293
  - 2012: 295
  - 2013: 282

- **Canine**:
  - 2009: 6472
  - 2010: 6869
  - 2011: 9031
  - 2012: 9202
  - 2013: 8759

- **Feline**:
  - 2009: 1238
  - 2010: 1372
  - 2011: 3148
  - 2012: 3069
  - 2013: 2860

- **Caprine**:
  - 2009: 49
  - 2010: 12
  - 2011: 8
  - 2012: 3
  - 2013: 0

- **Equine**:
  - 2009: 6297
  - 2010: 6497
  - 2011: 5999
  - 2012: 5332
  - 2013: 5500

- **Ovine**:
  - 2009: 66
  - 2010: 2
  - 2011: 49
  - 2012: 46
  - 2013: 53

- **Porcine**:
  - 2009: 182
  - 2010: 195
  - 2011: 303
  - 2012: 347
  - 2013: 179

<table>
<thead>
<tr>
<th>Animal species</th>
<th># of Farm (site) calls</th>
<th>Animals examined/ Treated</th>
</tr>
</thead>
<tbody>
<tr>
<td>University Farm Animal Practice (ULP) Harmelen</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bovine</td>
<td>5220</td>
<td>4141</td>
</tr>
<tr>
<td>Caprine</td>
<td>191</td>
<td>152</td>
</tr>
<tr>
<td>Kine</td>
<td>526</td>
<td>404</td>
</tr>
<tr>
<td>Porcine</td>
<td>446</td>
<td>354</td>
</tr>
</tbody>
</table>

**TABLE B: Ambulatory/Field Service Program**

<table>
<thead>
<tr>
<th>Herd/flock health programs provided</th>
<th># of Farm (site) calls</th>
<th>Animals examined/ Treated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dairy</td>
<td>Yes</td>
<td>1</td>
</tr>
<tr>
<td>Beef feedlots</td>
<td>No</td>
<td>-</td>
</tr>
<tr>
<td>Cow-calf</td>
<td>Yes</td>
<td>1</td>
</tr>
<tr>
<td>Small ruminants</td>
<td>Yes</td>
<td>1</td>
</tr>
<tr>
<td>Swine</td>
<td>Yes</td>
<td>1</td>
</tr>
<tr>
<td>Poultry</td>
<td>No</td>
<td>-</td>
</tr>
<tr>
<td>Fish</td>
<td>No</td>
<td>-</td>
</tr>
<tr>
<td>Equine</td>
<td>No</td>
<td>-</td>
</tr>
<tr>
<td>Other</td>
<td>No</td>
<td>-</td>
</tr>
</tbody>
</table>
4.2 ADEQUACY OF NORMAL AND CLINICALLY DISEASED ANIMALS USED FOR TEACHING PROGRAM

Teaching related to (authentic) clinical services is one of the pillars of the educational philosophy of FVM (see Standard 9). Due to ongoing innovative actions (see Standard 4.8), FVM is able to maintain a high number and a large variety of cases. Therefore, students (Bachelors as well as Masters) are offered a learning environment strongly related to authentic patient care in a safe learning environment and under optimal guidance. Clinical teaching based on cases with normal and diseased animals starts with skills training in the first year with standardized skills training; clinical labs in ‘clinical lessons’ in the Line program in the second and third year of the Bachelor’s program, to an increasing independent case treatment in the authentic environment, coached by specialists and experts in the Master’s program (such as the extramural teaching program; see below, and clinical rotations, both in the Master’s program). Moreover, intensity of coaching in de Master’s phase is gradually reduced. For a more detailed description and analyses see Standard 4.3, 4.8).

Pathobiology performs on average 2,500 necropsies per year. Necropsies are partly derived from clinical cases in our clinics and ULP. In doing so, FFM is able to offer students a direct insight into the pathophysiology of a disorder and in the relation between the clinical case and the necropsy, during their clinical rotations. For another part the necropsies are derived from private practices, surrounding farms, zoos etc. These necropsies are also used for teaching purposes both in the integrated Bachelor’s courses and in clinical rotations of the Master’s programs.

4.3 CLINICAL EDUCATIONAL RESOURCES AND PROGRAMS THAT ENHANCE EDUCATIONAL MISSION

University Clinic for Companion Animals: A high-standard primary care, emergency care and referral clinic for companion animals. This clinic is used for skills training in the Bachelor’s program (in particular in the so-called ‘Line courses’ throughout the Bachelor’s) and for clinical training during the clinical rotations in the Master’s program (in particular during Level 1, 2 and 3, rotations for students in the Companion Animal Track, and acting as the so-called ‘rotation sites’ for non-companion-animal-track students). Equine University Clinic and Ambulatory Clinic for Horses. This clinic and ambulatory clinic for horses is used in the same way as UCK in the Bachelor’s program as well in the Master’s program (see above).

Clinic for Farm Animals: Legal regulations with regard to biosecurity, implemented after the 2001 epidemic of foot-and-mouth disease, made it no longer possible for farmers to send their livestock and cattle to the Clinic for Farm Animals. Consequently, we changed the aim of our clinic to focus completely on education. At present we have to buy the patients for our courses and clinical rotations for cattle, sheep, goats, swine and poultry. These animals (patients and healthy animals) are used in skills training programs and rotations (for Farm Animal Track students as well as for Non-Farm Animal Track students). The clinic is not an ‘open clinic’ which means that these animals do not return to their former owners. After treatment they go for slaughter or for necropsy; only young calves are sold to other farms. As a consequence all animals in this clinic are owned by FVM and are considered legally as experimental animals. Strict welfare and legal regulations apply for using these animals in teaching. The clinic is only accessible via a hygiene barrier (see Standard 3). Apart from this the department of Farm Animal Health also houses all facilities (materials, cars, and a garage) to facilitate student and staff visiting farms throughout the country for a SWOT analysis and problem solving and advice for the farmers, under supervision of one of our veterinary specialists in close cooperation with the local veterinarian (Block 1 and 3, and several electives of the Master’s program (see for more: Standard 9). "The Tolakker."

This facility houses on the campus and is used for introduction and skills courses in the Bachelor’s, a clinical rotation for the Non-Farm Animal Track students, and in particular the Block 2 course for the Farm Animal Track Students. In addition, Bachelor’s students can participate in the regular milking hours at this farm to train their skills in animal handling and milking.

4.4 OFF-CAMPUS CLINICAL INSTRUCTION

FVM has different off-campus clinical instruction sites:

Extramural Studies (EU course) in the different Master’s tracks: Approximately 35 ‘affiliated’ off-campus Veterinary Hospitals throughout the whole country offer the students excellent facilities for training practical skills and application of knowledge and insight in practice in the last part of the Master’s program, during the eight-week ‘Extramural Studies’ clerkship. Main goal of this rotation is to bridge the gap between being taught in the more or less protected learning environment of FVM and actual veterinary practice. Practitioners, who are specially selected for this task, coach students. The group of practitioners is trained regularly in didactics, with a focus on FVM teaching philosophy. This also strengthens the relationship between these practices and the staff of FVM. These Extramural Studies is organized by the coordinators of extramural studies, all senior members specifically appointed to coach the individual students following extramural courses and to strengthen the relation between the practices and to evaluate the program and practice yearly.

University Ambulatory Clinic for Farm Animal Health (ULP): this new ambulatory Farm Animal Health is owned by UU. ULP employs sixteen vets and is housed in a recently renovated building with excellent facilities for students and vets. ULP is an essential chain in the learning line of the Master’s program. It bridges the gap between teaching in learning in more or less standardized conditions during practical and clinical work in the Clinic for Farm Animals and the Extramural Studies Program, which requires more autonomy and self-responsibility from the students. Additionally ULP plays an important role in skills training.

<table>
<thead>
<tr>
<th>Hospital</th>
<th>Learning duration</th>
<th>Number of students</th>
<th>mentor approved</th>
<th>Off-site evaluation</th>
<th>Written educ. objectives</th>
<th>Educ. outcomes assessed/stud. eval.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ULP Harmelen: Experience: Skills, Entrepreneurship (pre-HA) (FAH)</td>
<td>5 weeks</td>
<td>Yes</td>
<td>100 (FARM, FARM)</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>ULP Extramural studies for FA (n=97): Experience: Skills/Entrepreneurship:FAH/Prac.</td>
<td>9 weeks</td>
<td>Yes</td>
<td>65-75 (FAH)</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>ULP Extramural studies for Equine (n=38): Experience: Skills/Entrepreneurship:Pract.</td>
<td>9 weeks</td>
<td>Yes</td>
<td>65-75 (Equine)</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>ULP Extramural studies for Companion Animals (n=11): Experience: Skills/Entrepreneurship:Pract.</td>
<td>9 weeks</td>
<td>Yes</td>
<td>65-75 (Companion)</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Commercial farms for Bos Health Analysis (BBA, 5 students/yr): 20-25 commercial dairy, poultry and exotics farms</td>
<td>8 weeks</td>
<td>Yes</td>
<td>65-75 (BBA)</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
</tr>
</tbody>
</table>

Table D: Planning and supervision of off-campus instruction program

Off-campus site Duration rotation Number of students mentor approved Off-site evaluation Written educ. objectives Educ. outcomes assessed/stud. eval.

ULP Harmelen: Experience: Skills, Entrepreneurship (pre-HA) (FAH) 5 weeks 100-125 (FAH) Yes Prof. M. Brandt van Hemert van Barneveld Yes Yes

4.5 INVOLVEMENT AND RESPONSIBILITIES OF PROFESSIONAL STUDENTS IN HEALTHCARE MANAGEMENT OF PATIENTS IN CLINICAL PROGRAMS

During the Bachelor’s and Master’s program, an integrative approach of the professional competencies (see VetPro competency framework Appendix 9.A) is the core of the teaching philosophy. Students are involved and increasingly responsible in all clinical services and management of the clinics and other clinical facilities throughout the entire (Master’s) curriculum. Final year students play an important role in case treatment during their clinical rotations and during the Extramural studies Program (all of course with permanent availability of supervision when needed). For more detail, see Standard 9.

4.6 INTEGRATION OF SPECIALISTS AND CLINICAL RESOURCES INTO CLINICAL INSTRUCTION

Most of the specialties are represented at FVM. Aim is to represent most relevant specialists like surgery, internal medicine, diagnostic imaging and pathology by at least two EBVS (European Board of Veterinary Specialization) certified specialists. The European colleges are represented by one or more diplomats at FVM. These specialists participate in teaching in both the Bachelor’s and Master’s program.
4.7 ADEQUACY OF THE MEDICAL RECORDS SYSTEM USED FOR THE HOSPITAL(S)

Main medical record system is Vetware, used by the three clinical departments. Sole exception is Veterinary Pharmacy, which uses the ‘Viva’ program. Vetware is a program to keep medical records of a patient and can be used for tracking and tracing purposes. Records are comprehensively and safely stored. Retrieval can be effectively arranged but can take some time and effort. Retrieval takes place mainly for educational and patient care purposes. FVM is investing in a system (PACS) for managing distribution and storage of digital images. An even larger project was the implementation of a new laboratory system (GLMS) for the diagnostic labs, the microbiology and the pathology lab. The Vetware system upgrade will take place at the end of 2014. For analysis of technical data of the herds, the Department of Animal Health also uses commercial record keeping systems available on the farm or Practice (Agrovision, Farm Uniform-Agri, Agis, RUMA, Pir-DAP cf. PigChamp and InsemAn-Analyzation of fertility parameters). In 2014 SimHerd and VoerXpert will be implemented in the study program. ULP also keeps paper medical records per farm.

4.8 THE WAY FVM HAS RESPONDED TO INCREASING/DECREASING CLINICAL RESOURCES

- For companion animals, FVM was able to maintain or even increase the number of patients (cases) by a number of concrete actions in spite of economic crisis, which affects patient numbers in nearly all practices in The Netherlands;
- University Clinic for Companion Animals (UKG) started an Emergency Service (CSGA) in close cooperation from 75 private practices in the region around Utrecht (2011);
- Medium care unit was opened at UKG (2012);
- Professor Jan Willem Jesselink, new clinical director and full professor Top Referral Health Care of Companion Animals, was appointed in 2012. He has more than ten years’ experience in management in a large University Medical Center. At present he and his staff successfully manage UKG and were able to keep the number of patients stable, or even increase certain numbers and the quality of clinical cases that could be used for teaching at UKG;
- Former Ambulatory Clinic of the Department of Farm Animal Health was successfully privatized (2009). This resulted in an annual number of 139 farmers with the management of the Ambulatory Clinic in 2009, to today’s Commercial Ambulatory Farm Animal Health Practice with at least 350 commercial farms with in total more than 40,000 cows;
- Master’s course Extramural Studies was extended from six weeks to eight weeks;
- Renovation facilities for dairy at “De Tolakker” teaching farm (2005). The number of dairy cows has increased from 40 to 60. In the forthcoming years FVM will renovate pig facilities to a high standard facility for 200 sows in order to comply with the latest legal and welfare requirements and regulations;
- Reorganization Equine University Clinic and Ambulatory Clinic for Horses (2010). Although also suffering from the economic crisis and reduction of horses kept in The Netherlands, management and staff of the clinic succeeded in limiting reduction of patients. In fact, patient numbers of the intramural clinic for specialized care have started to increase again in 2014, whereas the number of patients treated in the Ambulatory Clinic (primary care of horses around the city of Utrecht) are still lower than before the crisis started;
- In the Clinic for Farm Animals are no problems with the number and quality of clinical resources (patients and healthy animals, and herd cases) for teaching. Because of the organization of the clinic (see Standard 4.3) the number of cases needed for teaching (and research) on domestic animals is not a problem.

An innovative project (Spring 2014), led by the recently appointed ‘chef de clinique’ Hilde Aardenma DVM PhD, was started to transform the clinic into a completely ‘student centered’ facility in which students are able to train all relevant competencies and not only the competency Veterinary Expertise, in accordance with the teaching philosophy of the FVM (see Standard 9, Appendix 4.8).

4.9 MEANS USED TO MAXIMIZE THE TEACHING VALUE OF EACH CASE ACROSS THE CURRICULUM

Patient data in the broadest sense are not only used for clinical teaching, but also for preclinical teaching of students. All data are available from the computerized patient registration system Veteware, where applicable, appropriate patients are used for clinical lessons and demonstrations, and hands-on wet labs in the Bachelor’s program. FVM is planning to involve Master’s students in the training of Bachelor’s students in these programs, when ‘the own patients of the Master’s students’ are used in clinical lessons of the Bachelor’s. Also when students are reporting their patients (all tracks) or herd analyses (farm animal track) students of other programs/tracks are expected to attend these meetings (and, in accordance with our teaching philosophy, reflect on it). Our own commercial herds of pigs, cows and sheep (’De Tolakker’) are used in several compulsory or elective courses throughout the Bachelor and Master’s program.

5. Library and information resources

5.1 COMMENTS ON AND ADEQUACY OF INFORMATION RETRIEVAL AND LEARNING RESOURCES

Information retrieval resources

FVM offers both students and teachers a learning space that contains virtual and digital information as well as real material (hard copy, but also specimens).

Library

The more traditional lending library has recently moved from FVM buildings to the central university library facilities (Heldenberglaan 3). Frequently used handbooks are available in multiple copies for students and staff in the Learning Environment also available (see Standard 5.2). The library also provides one-line instruction applications for students such as Libguides (http://libguides.library.uu.nl/home).

Student computer provision and web access

FVM campus has a total of 270 computers and several multi copiers and photocopy facilities available for students in the Learning Environment (see below) and the clinical facilities. Free Wi-Fi (Eduroam) has been upgraded to HD Wi-Fi at almost all study and learning environments. These facilities offer students and faculty access to personal files, portals and internet from any public area within the buildings of UU and all other institutes for higher education in The Netherlands. Starting in academic year 2012-2013, all new students are required to bring their own device (purchase a laptop), so they have access to all information, independent of time and place. Students may save their files on a personalized university U-drive, which can be accessed anywhere via a web browser.

Virtual information sources and learning space

Learning Management System (LMS) Blackboard: Blackboard is the LMS used by UU. It contains learning modules for each course, consisting of a course guide, learning content (e-books), web lectures and additional e-learning material. Students may interact with one another and communicate with the teachers on bulletin boards. Blackboard also manages Blackboard Collaborate, which is used for online meetings with students, and Blackboard Learning Module, which is used for tracking and tracing purposes. Records are comprehensively and safely stored. Retrieval can be used for tracking and tracing purposes. Records are comprehensively and safely stored. Retrieval can be used for tracking and tracing purposes. In 2014 a similar newsletter specific for students will be launched, with all relevant information for students in the Learning Environment also available (see Standard 5.2). The library also provides one-line instruction applications for students such as Libguides (http://libguides.library.uu.nl/home).

Education Newsletter: The current director of education puts much effort in communication with his teaching staff. One of the initiatives is a monthly Newsletter in which all aspects of can be dealt with, like outcomes of a working committee on the quality of the study places, awards for best teacher, and a review of conferences. In September 2014 a similar newsletter specific for students will be launched, with all relevant information for students, such as results from courses and curriculum evaluation, actual information on the program, an agenda, but also job placement information;

Oasis: This system contains information on the curriculum, examination program and also general course information. It gives students the possibility to register for courses and exams and to check their grades and study progress. OSJ uses this system for registration and storage of examination and course access and storage of confidential student information from study advisors and the examination committee.

Network of Veterinarians in Continuing Education (NOVICE): In 2009, an EU project proposal on the theme ‘Life Long Learning’ was granted. The NOVICE project was executed in cooperation with partner institutes from 2010-2012. The website NOVICE improves international collaboration for lifelong learning between veterinarians, teachers and students and is still available and in use; Elevate Health: FVM is partner of Elevate Health organization, and cooperates with the Faculty of Medicine to develop Elevate Health as a platform for supporting international education. Elevate aims to increase knowledge and understanding of health sciences among professionals. In doing so, FVM may improve overall wellbeing and reduce differences in standards of medical care between countries. A few courses of our students in the USA and elsewhere have furthered this ambition.

Self-Study Report 2014 – Faculty of Veterinary Medicine

Self-Study Report 2014 – Faculty of Veterinary Medicine

Self-Study Report 2014 – Faculty of Veterinary Medicine
veterinary curriculum, like Tropical Animal Health and Veterinary Epidemiology, already use Elevate Health as learning platform;

*Open Educational Resources*: FVM participates in the Online Veterinary Anatomical Museum (OVAM), originally initiated by the Royal Veterinary College (London), and improves further collaboration between a number of universities in Europe. FVM actively participates in contribution of e-learning material and podcasts and refers the students to this website for information retrieval;

*My Mediasite*: user portal of the Mediasite server (UII) to realize recordings of lectures by desktop and mobile devices (like laptop, smartphone and i-pad), including automatic upload to the Mediasite server, and video-recordings. My Mediasite has also an online editor and the possibility to manage meta data, and establish security. Other possibilities are adding tags, Q&A en polls.

**Learning Environment**

The Learning Environment (LE) is home to all study-related materials, such as prescribed books and 3D material, and also a place to study, to teach and to work on assignments with fellow students. Facilities such as computers and beamers in classrooms, as well as microscopes, printers, Wi-Fi and photocopieters are also part of LE. The main part is situated in the Androclus Building, with four smaller annexes in the clinics, containing a specialized library and ten-twelve pc workstations for information retrieval and self-study purposes. LE has been refurbished, and from May 2014 study collections of Anatomy, Pathology and Parasitology are brought together and put on disposal for the students and staff. To optimize the implementation of FVM teaching philosophy, blended learning is increasingly used in the curriculum. For this reason FVM invested in the design of online study material for self-tuition with e-modules, video instruction, and animations, in the design of formative and summative e-assessment, feedback tools, and possibilities for online collaboration.

**5.2 ACADEMIC CREDENTIALS FOR THE LIBRARIAN IN CHARGE OF THE LIBRARY**

The librarian of Utrecht University Library is Ms. H.P.A. Smit MSc. Veterinary library staff is Ms. R.L.J. Goverde PhD, subject librarian. Ms. Smit became university librarian in 2010, after an international career of over twenty years in library management and automation. She was library director at the University of Nijmegen, and Maastricht and spent three years in the US as executive consultant for a non-profit library service organization. She serves on several national and international committees, including the Dutch Consortium of University Libraries and the Royal Library (URK, chair), the Dutch Consortium for Information Infrastructure, Global Council of OCLC (a worldwide library service organization) since 2010, elected Vice-President/President Elect of Global Council in 2014 and advisory Council of National repository NARCIS (by KNAW-DANS).

**5.3. AVAILABILITY OF LEARNING RESOURCES SUPPORT FOR FACULTY AND STUDENTS**

**Opening hours library and learning environment**

- Learning Environment and clinics of FVM are available during daily working hours (opening hours from 8:00–18:00);
- UU library has a broad opening schedule: on working days the library is open from 08:00–22:30, on Saturday from 10:00–18:00 and on Sunday from 10:00–22:30. During exam periods the library is open until 01:00. During holidays the library has limited opening hours.

**Support**

- Information and support desk situated in the LE integrates several services: educational and student affairs, international cooperation, IT support for BYOD (bring your own device), and study materials. The information and support desk is open every workday from 12:15–13:15;
- Technical and didactic staff of 2.0 FTE (Full Time Equivalent) supports development of Blackboard modules and digital e-learning tools for courses by teachers;
- Multimedia service staff of 4.0 FTE supports developing and manufacturing of e-learning tools;
- Student association DSK, in collaboration with FVM has arranged a discount agreement with the online bookstore Studieboeken.com for all books and syllabuses used in the courses;
- Students may contact OSZ by phone from Monday to Thursday from 09:30–10:00 hrs. There is also a general e-mail address; messages are read and answered every day.

**Audio-Visual Service**

FVM has a specific section of the faculty office for developing digital educational material, Multi Media Service (MMS). In close collaboration with the teachers and OSZ, MMS is responsible for developing and manufacturing video(instruction), e-modules, podcasts, websites (Veterinarians in Education Worldwide, VIEW), e-simulations, images etc.

**5.4 METHODS OF ACCESS TO LIBRARY INFORMATION RESOURCES**

**On campus**

- Physical collections: may be found in the Utrecht University Library Uithof (Heidelberglaan 3, approx. 400 m from Androclus Building);
- Approx. 8,000 actual and frequently used monographs are available on loan, as well as the current and last five year's volumes/issues of approx. 200 journals which are not available in electronic format;
- UHartors > 30,000 older and/or less commonly used veterinary books as well as the bound volumes of many veterinary journals from their very start onwards. These can be requested from the catalogue-using Solis ID- and in general delivered for loan within a few hours;
- In the LE ca. 400 items of multiple textbooks and reference works are available for self-study and use in seminars or joint projects (not for loan), arranged by the modules in the curriculum.

**Electronic collections**

- Students and staff have access to over 18,000 peer reviewed journals (approx. 3,000 medical titles – including veterinary medicine), as well as > 115,000 electronic books (1,000 veterinary titles), and hundreds of specialized scientific databases (including Scopus, Web of Science, CAB abstracts, Wild Life & Ecology Studies Worldwide, Food Science &Technology Abstracts). Databases show an sfx-link (UBU-link) for direct access to the electronic and/or printed library collections.

**Off campus**

- UU students and staff can get access to subscribed journals and databases by authentication with their Solis ID, either via a pop-up screen via one of the Library's internet pages or using a library-made browser plugin ('Get access');
- Electronic resources of specific interest for veterinarians, are presented via a specific veterinary page of UU Library, http://vetportal.library.uu.nl/portal.html.

**5.5 RESOURCES AVAILABLE TO STUDENT IMPROVING THEIR SKILLS**

- All new students attend a tutorial on how to use the portal MyVET and digital resources, Osiris, Blackboard, and library instructions and they use these skills during their first year project (Line 1);
- All first-year students get support in using their own device and connecting to internet by using Solis ID and Eduroam. For troubleshooting, help of students of the Faculty of Artificial Intelligence is much appreciated;
- Hands-on training as well as online tutorials to help acquire and improve their skills in relation to information literacy are available for staff and students. The online tutorial, LibGuides, offers help in all aspects of retrieval and handling of scientific information;
- Students may call on individual support from the subject librarian and information specialist.

**5.6 CURRENT PLANS FOR IMPROVEMENT**

- All digital study material need a well-organized storage with meta dating for retrieval. With the library and the UU ITC-Services FVM is developing a repository for this purpose;
- Image bank for education purposes will be better available for staff;
- New student work spaces in the restaurant of the Androclus Building;
- To foster use of skills lab facilities, haptic cow and horse and applications to train clinical reasoning and diagnostic skills will increase;
- A project involving digital microscopy with UU funding started in June 2014. This project is an intercurricular project with the faculties Iluman Medicine, Biomedical Science, Biology, Geology and Utrecht University College, and will last for a period of three years;
- In September 2014 Turnitin (an e-assessment software application specific for written products) will be implemented for feedback and summative assessment of written assignments.
6. Students

6.1 TABLES A, B, C and D, AND TREND ANALYSIS

<table>
<thead>
<tr>
<th>Year</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
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<td>206</td>
<td>241</td>
<td>252</td>
<td>205</td>
<td>245</td>
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<tr>
<td>Third</td>
<td>221</td>
<td>284</td>
<td>268</td>
<td>275</td>
<td>251</td>
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<tr>
<td>Fourth</td>
<td>340</td>
<td>250</td>
<td>180</td>
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<td>201</td>
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<tr>
<td>Fifth</td>
<td>455</td>
<td>344</td>
<td>606</td>
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<tr>
<td>Sixth</td>
<td>332</td>
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Table A: Enrolment of students in the Veterinary Medical Program

Trends analysis of enrolment of students in the Veterinary Medical Program
In each year we registered all students who subscribed to at least one course. The variation in student numbers can be explained by:

a. Renewal of the Curriculum in 2007 (implementation of the Bachelor’s) and in 2010 (implementation of the Master’s);

b. In 2010 the Master’s Curriculum was implemented: from 2010 on, the fifth and sixth year students are a combination of Master’s students and Curriculum 2001 students;

c. Fourth year students in 2012 and 2013 are all Master’s students;

d. Different entrance requirements per study year: students may start the fourth year when they have passed Bachelor’s exam.

### Table 6B.1: Interns and residents per year for last five years per research department in FTE.

<table>
<thead>
<tr>
<th>Department</th>
<th>Interns</th>
<th>Residents</th>
<th>Residents PhD</th>
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<td>Animals in Science and Society</td>
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<td>Clinical Sciences of Companion Animals</td>
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<td>Institute for Risk Assessment Science</td>
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<td>Farm Animal Health</td>
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<td>Pathology</td>
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<td>Entomology</td>
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<td>2010</td>
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<td>2012</td>
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<td>Entomology</td>
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</table>

Table 6B.1: Interns and residents per year for last five years per research department in FTE.

<table>
<thead>
<tr>
<th>Academic Year</th>
<th>2008-2009</th>
<th>2009-2010</th>
<th>2010-2011</th>
<th>2011-2012</th>
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<td>Post graduate MSc</td>
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<tr>
<td>PhD in TFE</td>
<td>143</td>
<td>118</td>
<td>108.74</td>
<td>101.19</td>
<td>94.89</td>
</tr>
</tbody>
</table>

Table 6B.2: Post graduate MSc and PhD students for the last five years.

<table>
<thead>
<tr>
<th>Academic Year</th>
<th>2008-2009</th>
<th>2009-2010</th>
<th>2010-2011</th>
<th>2011-2012</th>
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<td>101.19</td>
<td>94.89</td>
</tr>
</tbody>
</table>

Table 6B.2: PhD in TFE for last five years. In academic year 2012-2013 a combination of last curriculum C2001 graduates (191) and Master’s graduates (77) had passed the DVM exam.
In The Netherlands there is no legal or other requirement for selection and/or registration of minorities. Data (part of Table C) are therefore not available. Table D is not applicable to FVM. FVM teachers participate in UU Bachelor and Master programs Bioveterinary Sciences, UU Master’s program Bioveterinary Sciences and other biomedical- UU Master’s programs. These programs are accredited by NVAO, but the curricula are not the responsibility of FVM, and a number of its teachers participate in educational programs at Utrecht University College and Wageningen Animal Science University, as well as in various continuing education courses, as provided by the Foundation for Continuous Veterinary Education (www.kwaliteitdiergeneeskunde.nl).

6.2 LIST OF STUDENT SERVICES

Registration and electronic learning management system: FVM and UU provides various digital registration systems and an online learning management system.

University registration: UU students are required to register or re-register before the beginning of each academic year. Only after registration they are entitled to attend lectures, take tests, apply for final examinations, and/or use student facilities. Students receive timely reminders for their re-registration.

Registration must occur online, through www.studielink.nl, a nationwide registration system;

Course registration: Students need to register for all courses they want to attend, through Oisiris. With the registration for courses, students are automatically registered for exams;

Electronic learning management system: see Standard 5.1.

Mentoring, tutoring and advising: Students have access to various mentoring and advisory student services:

Student advisors: The three FVM student advisors provide information on admission to the veterinary curriculum, possible alternatives when not admitted, rules and regulations on tests and exams, exceptions, etc. They are trusted intermediaries and in that role guide students in case of learning problems, retaking tests and exams, study delay due to illness or other personal circumstances. UU student counselors give advice on more general subjects like housing and financial problems, disabled and special arrangements.

Counseling (specific learning problems): In case of severe and specific learning problems or personal issues, students can be referred to the UU student psychologist;

Mentoring: At the start of every academic year OSZ assigns first-year students to a mentor group based on the courses they are following (attend classes together). A mentor student (most of the time a final-year student or a student who has attended classes together). A mentor student group consists of ten new students and several mentor students, who act as their mentors. This system aims to bring students into contact with the social structure of FVM and the university, while also providing them with an opportunity to get to know one another. Knowing a fellow student from a higher year seems to be very useful. The seniors students are a good source of information on various practical problems, information retrieval, and social activities, as well as sharing study experiences. Mentors are assigned for one year and receive specific prior training;

Tutoring: All students are assigned to a tutor. A tutor is a teacher (preferable from the tenure staff), who guides the student for six years, with an emphasis on the student’s personal and professional conduct and development (see Standard 9.1). One of the advantages is that any [learning] problem will be picked up on time in order to refer the student to the faculty’s student advisor or the university’s student psychologist;

Centre for Education and Learning (COLUU): Provides study skills trainings for students. In three to eight sessions of two hours each, students learn how to make efficient use of their time, improve their reading and writing skills, design research projects, how to prepare for tests and exams, or increase their motivation. The University Board finances this service for students;

UU for U: Student Services: Provides general information and advice on topics like registration, tuition fees, financial matters, student financial assistance and university financial schemes, as well as to inform students on complaint procedures, accommodation and activities of student organizations;

International Office: The central UU International Office provides information on student exchanges to central parties: Students. The Office of International Cooperation of UU provides information on faculty partner universities and other study related subjects in a foreign country.

Clubs and Organizations: FVM veterinary students have access to a very active and vast organizational structure with a lot of clubs and societies. The two major organizations are:

Student Council: Looking after the interests of the students as far as educational matters are concerned and consists of student representatives from all years. The Student Council works in close cooperation with OSZ and organizes information and course evaluations. Every month the Student Board consults with OSZ;

DSK – The Veterinary Students Society: Almost every veterinary student is a member of DSK. DSK has six board members who organize several major events throughout the year. See www.dskonline.nl. There is a range of other veterinary student clubs and organizations. Some of them are affiliated to/independent of DSK. See Appendix 6.A. features an overview of all of the organizations.

6.3 COLLEGE ACTIVITIES IN SUPPORT OF PLACEMENT OF GRADUATES

OSZ organizes a yearly meeting for students at the start of the Master’s curriculum, where information is provided about the program for the final three years and about current and future labor market perspectives. In strong cooperation with the other faculties of UU we are working on the establishment of Career centers, to prepare recent graduates for the labor market;

Royal Veterinary Association Of The Netherlands (KvvNd) offers a student membership at a reduced fee. Student members have access to all of KvvNd’s relevant services, such as its job agency. This agency manages an excellent database with available positions in the veterinary sector, as well as in veterinary practice, industry and elsewhere. Recent graduates looking for a position may submit their details;

DSK organizes yearly a Practice and Career Fair with access for all students. During this event all different sectors of the veterinary profession are represented by individuals and/or organizations, providing information about future career possibilities. In order to inform students about future career options DSK occasionally organizes other meetings, mostly supported by veterinary organizations;

UU organizes every year a Career Fair for all their students and intends to establish a Career Centre in 2014-2015 to support students and alumni in closing the gap between graduation and an appropriate job.

6.4 ACADEMIC CATALOGUES AND FRESHMAN/UPPER-CLASS ORIENTATION MATERIAL

FVM provides an academic catalogue and study guides, even as information about enrolment for its students.

Bachelor’s program information day: twice a year FVM organizes, in cooperation with UU, an information day for prospective students where they can learn about our Bachelor’s program;

Academic catalogue: https://www.osiris.universiteit utrecht.nl (in Dutch);

Study guide for the Bachelor’s in Veterinary Medicine: http://www.uu.nl/faculty/veterinarymedicine/NL/onderwijs/studiegids/bachelor_diergeneeskunde/Paginas/default.aspx (in Dutch);

Study guide for the Master’s in Veterinary Medicine: http://www.uu.nl/faculty/veterinarymedicine/NL/onderwijs/studiegids/master_diergeneeskunde/Paginas/default.aspx (in Dutch);

Information about the enrollment for the Bachelor’s in Veterinary Medicine: http://www.uu.nl/bachelors/tBachelor/dierenbehandelaar/diergeneeskunde/ (in Dutch and in English);


After receiving confirmation of acceptance as a student at FVM, students receive a package from Utrecht University with information on central UU registration and information about the UU Student Introduction Period – a week-long program of activities related to the city of Utrecht. Before the start of a new academic year all new students receive their Gmail account and Solis ID. All necessary study information is online available. Students are informed about all possibilities of counseling and coaching related with study planning, FVM front and back office, student advisors, office hours, and so on. If students have passed the Bachelor’s exam, they may register for the Master’s program through www.studielink.nl, a nationwide registration system. They also need to register through students services of FVM, and indicate which Master’s program they want to follow. Students will receive an e-mail about the registration for the Master’s program during the last phase of their Bachelor’s.

6.5 SYSTEM TO COLLECT STUDENT SUGGESTIONS, COMMENTS, AND COMPLAINTS

On course and program level:

• All courses in the Bachelor’s as well in the Master’s program are evaluated yearly. This quality system is based on a Plan-Do-Check-Act cycle. Students and teachers are involved in this process. This PDCA cycle is described in more detail in Appendix 6.A and 1.B and Standard 9.3;

• Course coordinators are in close contact with their teachers and a delegation of students about all matters related with their course.

On curriculum or program level the Education Council is a more formal body for students and teachers to discuss with the vice dean of education/director of education complaints, suggestions or other matters related with (the quality or organizational aspects) of education, and invites at least three times a year the Student Council and all other responsible student bodies for informal meetings to discuss relevant educational matters more informally.
6.6 CURRENT PLANS FOR IMPROVEMENT IN RESOURCES FOR STUDENTS

FVM plans to adapt orientation activities and information material for who is interested in starting the study of Veterinary Medicine at Utrecht University with the following:

• Update short films about different professional career opportunities for presentation on several orientation activities;

• Giving explicit attention in orientation activities to the Farm Animal Health and Veterinary Public Health (FA/VPH);

• Organizing special information meetings about lesser known veterinary fields (Research, VHP, Health, One Health, management and administration);

• Using more modern information resources such as social media in our external marketing;

• Improving information materials and communication tools for potential international students;

• Improving actual information on e.g. the results of the quality system, announcements, jobs etcetera, comparable with the newsletter for teachers which was introduced in 2012. The first newsletter for student is expected for September 2014.

7. Admission

7.1 MINIMUM ADMISSION REQUIREMENTS

Pre-selection criteria for all applicants include the completion of at least one of the following pre-university forms of education: [1] Pre-university education with the ‘Profile’ Science and Technology or [2] Pre-university education with the ‘Profile’ Science and Health or [3] Pre-university education (‘old style’) or; 4) (propaedeutic) diploma in a bachelor course from a research university or university of applied science.

In all these cases the subjects Physics, Chemistry, Biology and Mathematics should be included.

7.2 STUDENT SELECTION PROCESS, INCLUDING MEASURES TO ENHANCE DIVERSITY

FVM is allowed to admit 225 students each year. The admission system, based on national legislation and introduced in 2001, generates three groups of candidates:

a. Admitted by weighted lottery (at least 50%);
b. Admitted automatically due to high grades on high school exams (mean > 8.0);
c. Admitted by selection by FVM (max. 50% minus the number of those candidates automatically admitted under 2).

FVM has no influence at all on the selection procedure of groups a) and b). The weighted lottery is performed by the Education Executive Agency, the organization that regulates education on national level (in Dutch: Dienst Uitvoering Onderwijs = DUO).

There is a shortage of veterinarians on FA and VPH labor market. FVM therefore uses its own student selection (c) to recruit students for the track FA/VPH, and developed a system to select undergraduates with aptitude for and interest in this specific field in veterinary medicine. This group (selected by FVM) will fill approx. 30% of the available places. A candidate is allowed to participate in this selection only once.

Applicants for selection enroll at DUO before January, 15. Details of selection procedure c) are described in Standard 7.3. Selected candidates are predestined for the labor market FA and/or VPH. All selected students have to sign a contract in which they commit for the track FA/VPH in the Master’s program, and are not allowed to change their track program. At the end of the Bachelor’s/start of the Master’s program, all other Bachelor’s students have to choose for a specific Master’s Track FA/VPH or CA/E.

7.3 FACTORS OTHER THAN ACADEMIC ACHIEVEMENTS USED AS ADMISSION CRITERIA

FVM’s selection system, based on qualitative and quantitative research, consists of a written component and an interview. Research has revealed differences in personal characteristics/competencies between veterinarians and interns favoring FA/VPH and those favoring Company Animals/Equine (CA/E). The system focuses only on non-technical competencies and academic achievements are not taken into account. FVM’s selection system is based on a pre-structured panel interview. The interview panel consists of a DVM lecturer, DVM practitioner and a veterinary student. All members receive intensive training before participating in the interview. The interview focuses on elements such as motivation for and knowledge of the working field of veterinarians in the FA/VPH sector; a broad vision on the sector; vision on organizations and organizational consciousness which cannot be measured with the questionnaire in the written component. In the interview general skills that are important to all veterinarians, such as integrity, resoluteness, and sociability, are also taken into account. The interviews are assessed by an ‘evaluation criteria set’, using a score sheet. First, the members of the panel will compare the assessments of a candidate. Secondly, the assessment of the candidates will be compared with each other and will be ranked. The scores of the interviews result in a ranking. The top 70 applicants scoring sufficiently on the evaluation criteria are admitted to the Faculty after signing a declaration in which they pledge to follow the FA/VPH Master’s program and after their final high school exams. The management of the selection procedure is largely subject to national legislation.

Over the past six years, only two non-selected student submitted an objection against the procedure used by FVM. The official Objections Committee of Utrecht University rejected both objections.

<table>
<thead>
<tr>
<th>Year</th>
<th>Objections</th>
<th>Assigned</th>
<th>Rejected</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2009</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2010</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2011</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2012</td>
<td>0</td>
<td>0</td>
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<td>1</td>
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<tr>
<td>2013</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

Table 7.4: Objections against the admission procedure used by the FVM for the last 6 years.
7.4 APPLICATIONS FOR VETERINARY MEDICINE

<table>
<thead>
<tr>
<th>Year</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>A/P</td>
<td>618/225</td>
<td>722/225</td>
<td>765/225</td>
<td>724/225</td>
<td>849/225</td>
<td>667/225</td>
</tr>
</tbody>
</table>

Table 7.C: Applications for Veterinary Medicine for the last 5 years. A/P = Applicants per Position available

7.5 CURRENT PLANS FOR ASSESSING SUCCESS OF SELECTION PROCESS TO MEET MISSION OF FVM

Research on Selection System: Earlier research on FVM’s selection system\(^1\) showed that 90% of the students would make the same track choice compared to their initial track choice in the first year of study five years earlier (Curriculum 2001). Another study\(^2\) found significant differences between students in the track FA and VPH and students in the Track CA/E with respect to non-technical competencies. In the more recent years3 FVM investigated study performances of selected students and compared them with students who entered the study by a weighted lottery system (non-selected). Research concluded that from the cohorts 2007-2010 14% of selected students (40/280) have ceased the study, that is a bit lower than the non-selected students: 152 out of 938 (16.2%) of those students ceased the study. In The Netherlands these dropout percentages are very low compared with other academic education programs.

In the first year FVM uses a binding study advice (BSA), that is based on a set lower limit of European Credits divided in 384 selected versus 1217 non selected students), there is a small, but not significant, difference in low compared with other academic education programs.

Efforts to increase the number of applicants for Veterinary Medicine: The study Veterinary Medicine has a numerus fixes, therefore the numbers of students who may enter the study is limited. There are far more applicants (600-800) then number of openings available (225). FVM does not have a program to increase the number of applicants for Veterinary Medicine. To fulfill the need of society and a specific part of the professional field, FVM has a selection system for the sector FA and VPH. With this selection procedure it is able to select between 45-65 students and admit students with interest in this specific professional field. Next year the Ministry of Education, Culture and Science will abolish the numerus fixes. FVM will implement a selection method for all students, an is developing selection methods for all Bachelor students.

7.6 POLICIES AND PROCEDURES FOR ADMITTING TRANSFER STUDENTS

Students with a (propaedeutic) diploma in a Bachelor’s course from a university or university of applied sciences can apply for the FVM’s Bachelor’s program. Transfer students must have completed the subjects Physics, Chemistry, Biology and Mathematics (pre-university education level). Admission to the Master’s program of FVM is only possible with a Bachelor’s degree obtained at FVM.

8. Faculty

8.1 ASSESSMENT OF STRENGTH OF FVM AND SUPPORT STAFF IN FULFILLING IT’S MISSION

Over the years the needed disciplines in the faculty staff are available. This means for the curriculum that all disciplines are represented and the integration in the courses can be realized.

<table>
<thead>
<tr>
<th>Dept</th>
<th>Rank</th>
<th>Discipline</th>
<th>Gained Clinical Track Tenure</th>
<th>Clinical Track Lost Tenure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biochemistry and Cell Biology</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Associate Professor</td>
<td>2007</td>
<td>Veterinary biochemistry</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Associate Professor</td>
<td>2009</td>
<td>Veterinary biochemistry</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Associate Professor</td>
<td>2010</td>
<td>Veterinary biochemistry</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Associate Professor</td>
<td>2011</td>
<td>Veterinary biochemistry</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Associate Professor</td>
<td>2012</td>
<td>Veterinary biochemistry</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Animals, Science and Society</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Professor</td>
<td>2010</td>
<td>Neurobiology of behavior</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Associate Professor</td>
<td>2012</td>
<td>Neurobiology of behavior</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Assistant Professor</td>
<td>2009</td>
<td>Animal Roses Animals</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Assistant Professor</td>
<td>2011</td>
<td>Neurobiology of behavior</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Assistant Professor</td>
<td>2012</td>
<td>Neurobiology of behavior</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
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<td></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Faculty Office</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Professor</td>
<td>2012</td>
<td>Education Management</td>
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<tr>
<td>Professor</td>
<td>2012</td>
<td>Research Management</td>
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<td>1</td>
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<tr>
<td>Professor</td>
<td>2009</td>
<td>Management and governance</td>
<td>1</td>
<td>1</td>
</tr>
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<td>Professor</td>
<td>2009</td>
<td>AMC Fund</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Professor</td>
<td>2013</td>
<td>Quality of education</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Assistant Professor</td>
<td>2011</td>
<td>Quality of education</td>
<td>1</td>
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</tr>
<tr>
<td>Total</td>
<td></td>
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<td>1</td>
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</tr>
<tr>
<td>Clinical Sciences of Companion Animals</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Professor</td>
<td>2011</td>
<td>Medicine</td>
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<td>1</td>
</tr>
<tr>
<td>Professor</td>
<td>2011</td>
<td>Clinical services</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Professor</td>
<td>2013</td>
<td>Medicine</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Professor</td>
<td>2011</td>
<td>Dermatology</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Professor</td>
<td>2012</td>
<td>Surgery</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Professor</td>
<td>2012</td>
<td>Diagnostic Imaging</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Assistant Professor</td>
<td>2011</td>
<td>HIV</td>
<td>1</td>
<td>1</td>
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<tr>
<td>Assistant Professor</td>
<td>2011</td>
<td>Neurology</td>
<td>1</td>
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</tr>
<tr>
<td>Assistant Professor</td>
<td>2012</td>
<td>Neurology</td>
<td>1</td>
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<tr>
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<td>2013</td>
<td>Reproduction</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Assistant Professor</td>
<td>2009</td>
<td>Gastroenterology</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Assistant Professor</td>
<td>2011</td>
<td>Medicine</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Assistant Professor</td>
<td>2011</td>
<td>Dermatology</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Assistant Professor</td>
<td>2013</td>
<td>Diagnostic Imaging</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>Infectious Diseases and Immunology</td>
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<td></td>
</tr>
<tr>
<td>Professor</td>
<td>2011</td>
<td>Virology</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Professor</td>
<td>2012</td>
<td>Virology</td>
<td>1</td>
<td>1</td>
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<tr>
<td>Professor</td>
<td>2012</td>
<td>Virology</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Assistant Professor</td>
<td>2011</td>
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<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Assistant Professor</td>
<td>2011</td>
<td>Infectious biology (virology)</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2011</td>
<td>Clinical research</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Institute for Risk Assessment Sciences</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Professor</td>
<td>2011</td>
<td>Toxicology (general)</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>
Table 8.A.: Loss and recruitment of the FVM for the last 5 years

<table>
<thead>
<tr>
<th>Area</th>
<th>Technical</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical teaching</td>
<td>25.7</td>
<td>18.7</td>
</tr>
<tr>
<td>Non-clinical teaching</td>
<td>16.6</td>
<td>12.7</td>
</tr>
<tr>
<td>Research</td>
<td>57.7</td>
<td>38.2</td>
</tr>
<tr>
<td>Clinical services</td>
<td>16</td>
<td>11.8</td>
</tr>
<tr>
<td>Pharmacy</td>
<td>32</td>
<td>8.9</td>
</tr>
<tr>
<td>Support (general)</td>
<td>50</td>
<td>18.5</td>
</tr>
<tr>
<td>Total</td>
<td>139.2</td>
<td>113.3</td>
</tr>
</tbody>
</table>

Table 8.B: Lost and recruitment of the FVM for the last 5 years

Table 8.C: Non Veterinarians on 31 December 2013

<table>
<thead>
<tr>
<th>Area</th>
<th>Technical</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farm Animal Health</td>
<td>113.3</td>
<td>86.8</td>
</tr>
<tr>
<td>Veterinary public health</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Clinical services</td>
<td>32</td>
<td>0</td>
</tr>
<tr>
<td>Non-clinical teaching</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Research</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Clinical services</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Pharmacy</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Support (general)</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>139.2</td>
<td>113.3</td>
</tr>
</tbody>
</table>

8.2 CURRENT NUMBER OF ACADEMIC FACULTY WHO POSSESS CREDENTIALS

<table>
<thead>
<tr>
<th>Title</th>
<th>MS</th>
<th>PhD</th>
<th>Board Certified &amp; MS</th>
<th>Board certified &amp; PhD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Admin</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Professor</td>
<td>18</td>
<td>14</td>
<td>14</td>
<td>14</td>
</tr>
<tr>
<td>Associate Professor</td>
<td>44</td>
<td>44</td>
<td>44</td>
<td>44</td>
</tr>
<tr>
<td>Instructor/teacher</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
</tbody>
</table>

Table 8.D: Non Veterinarians on 31 December 2013: All veterinarians in The Netherlands have a DVM degree.

8.3 CHALLENGES FOR FVM IN MAINTAINING FACULTY NUMBERS AND QUALITY

In recent years, it has been more difficult to maintain or attract residents/specialists for an academic career. This is mainly due to two factors: [1] long career paths in the university setting and [2] competitive salaries and facilities offered by private clinics and industry. This is already reality for the departments of Clinical Sciences and Companion Animal Medicine. New career tracks have been developed in which talented students in Honors Programs expand their research project to a PhD thesis, followed by a residency. Several highly talented young professionals are now in such tracks. FVM expects that this will yield enough talented PhD-Diplomates to fill future staff positions.

**Task differentiation and redistribution of tasks**

Many scientific staff members are assigned several fragmented tasks and often experience work-related stress. In order to deal with this, FVM makes it possible to differentiate and redistribute tasks. Over the next years, the faculty and individual members of the academic staff will choose a core profile to fit each person: researcher, teacher or clinician. For almost everyone the ‘core task’ will take up most of their time; in principle, the remaining time will then be assigned to at most one other secondary task. The two core tasks are recorded in a suitable University Job Classification profile that will make up an integral part of the academic staff workflow at FVM. Task differentiation means that, for employees with the core profile ‘researcher’, high standards can be set for gaining prestigious personal grants, acquisition, supervision of research and editorial skills. In the clinical in particular, administrative and support staff (ASP) can take over more administrative and executive duties from academic personnel than is currently the case. The latter can then better focus on their specialist tasks. Examples include: planning of clinical services and supporting tasks in the outpatient clinic, the operating room, education and research. In this way greater efficiency can go hand in hand with greater growth potential for ASP. Task redistribution to ASP staff should create a training plan and a career plan. In addition, more tasks and responsibilities can be delegated to students.

**Inspirational human resources policy**

Organizations and people develop over time. Annual staff assessment helps to reveal the employees’ qualities and growth potential and estimate the organization’s future need for formations and competences. Results from the assessment are applied in the evaluation and assessment interview at individual level, and in the P&C review at faculty level. This assessment contributes to intensification of the systematic human resource policy recently agreed to in the new Collective Labor Agreement for Dutch Universities (CAO NU). Talent, diversity, succession and career policy come together in this assessment for each organizational unit. Not all employees have the potential for a vertical career perspective. Managers do support those employees in the search for deepening, broadening, shifting or changing of tasks within or outside of FVM.

FVM will continue to invest in a workforce that can move with strategic choices and/or changes in the market, not just concerning permanent or temporary contracts but also concerning entrepreneurial competencies such as flexibility, innovativeness, customer service and inspirational leadership.
8.4 INFORMATION ON THE LOSS (WHAT DISCIPLINE/SPECIALITY) AND RECRUITMENT OF FVM

Over the past five years, the total number of staff has decreased by 78 FTE. This reduction is a result of the recent centralization of some services and funding by the national government in order to improve the quality of education in their respective faculty. They are facilitated with a scholarship of €5,000. To reward teacher excellence, UU issues teaching awards each year. For the development of research and clinical services skills there are many courses and training sessions available. All PhD courses can be found on the UU-website.

In 2011 UU established the Teaching Fellowship program, which rewards excellence and stimulates educational quality. A teaching fellowship offers one year of teaching on a fixed-term contract aimed at improving the quality of education in their respective faculty. They are facilitated with a scholarship of €5,000. To reward teacher excellence, UU issues teaching awards each year. For the development of research and clinical services skills there are many courses and training sessions available. All PhD courses can be found on the UU-website.

The different colleges and the European Board of Veterinary Specialization determine the educational programs for residents. FVM also developed a well-defined plan to scout, recruit, support and coach young potentials. The academic leaders are made (and being held) responsible for recruiting future staff members. In order to do so, they are supported by the Faculty’s Research Management and HRM staff members.

For new talented assistant of associated professors, full professors, tailor made programs in academic leadership and governance are offered by UU. The above policies are included in the long term staff management and will be implemented specifically in the individual career agreements as a part of the annual individual Assessment and Development Plan. This Assessment and Development Plan is an important instrument within FVM with regard expectations of goals and performance, and development of individual employees during a fixed period. Such an annual consultation focuses on issues such as the prospective career development, personal development and any additional education needed, as well as the time scale in which the objectives must be achieved. Multi-year career development objectives and agreements are laid down in a personal development plan.

8.8 CURRENT PLANS OR MAJOR CHANGES IN PROGRAM DIRECTION

There are no current plans or major changes in the program direction that would be affected by faculty retirements, recruitment or retention.

8.9 MEASURES TAKEN TO ATTRACT AND RETAIN A DIVERS FACULTY

FVM works to increase the number of female professors. Between 2009–2014 there was an increase from 11 to 21%. Utrecht University signed the Charter for Talent, through which the university, and thus the faculty, strives to increase the number of female professors. Furthermore, for talented female Faculty, special career support is available. To remain a diverse faculty, FVM invest in internationalization. When professorships become vacant there is a special focus to attract international candidates for the vacant position.

Training programs such as FVM BKO training program are available. Qualifications are assessed on basis of teaching portfolios by a committee at faculty level and endorsed by the dean of FVM and the UU rector.

More than ten years ago, UU established the Center of Excellence in University Teaching (CEUT), a facility to support faculty members in developing educational leadership. CEUT offers a program composed of ten two-day sessions in a period of fifteen months on various educational topics, two study trips abroad and supervision and peer guidance on educational development projects submitted by the participants. Admission to the program is selective and prospective participants are selected by the Education Board and proposed to the dean. Participants of the CEUT program are excellent and selected teachers from all university faculties. This diversity leads to a exchange of knowledge and experience over the faculty boundaries and contributes to university community.

For new talented assistant of associated professors, full professors, tailor made programs in academic leadership and governance are offered by UU. The above policies are included in the long term staff management and will be implemented specifically in the individual career agreements as a part of the annual individual Assessment and Development Plan. This Assessment and Development Plan is an important instrument within FVM with regard expectations of goals and performance, and development of individual employees during a fixed period. Such an annual consultation focuses on issues such as the prospective career development, personal development and any additional education needed, as well as the time scale in which the objectives must be achieved. Multi-year career development objectives and agreements are laid down in a personal development plan.

8.10 PROGRAMS FOR ON-CAMPUS DELIVERY OF CURRICULAR CONTENT BY INDIVIDUALS NOT EMPLOYED FULL TIME

- Communication in Bachelor’s/Master’s;
- Farm Animal Health Master’s program:
  - parts of the poultry curriculum
  - agricultural economy
- Veterinary management and social responsibility: structural support in financial and entrepreneurship;
- Veterinary Public Health: slaughterhouse.
### 8.11 ROLE OF INTERNS, RESIDENTS, AND GRADUATE STUDENTS IN TEACHING AND EVALUATING VETERINARY STUDENTS

- Clinical teaching in Bachelor's and Master's Curriculum. Evaluate the performance of students by means of feedback to students in e-PASS;
- Writing of teaching material, compose examination questions, and contribute to the objective structured clinical evaluation;
- Teaching in postgraduate courses and continuing professional education.

### 9. Curriculum

#### 9.0 INTRODUCTION

The curriculum at FVM consists of a six-year program, divided in a three year Bachelor's phase and a three year Master's phase. Each year consists of 60 ECTS, which is equivalent to 42 weeks of 40 hours of study for every student. The Bachelor's and Master's program train students to the degree of doctor in veterinary medicine (DVM). The curriculum as a whole covers 360 ECTS. The implementation of the Bachelor’s phase started in 2007, which means that the first year of students of the 2007 Curriculum enrolled in 2007, and the first Master’s students started in 2010. Therefore, the first regular students from the Curriculum 2007 graduated in the summer of 2013.

#### 9.1 OVERALL CURRICULUM OBJECTIVES AND INTEGRATION INTO INDIVIDUAL COURSES

The objective of Curriculum 2007 is to deliver DVM’s who are ready to enter professional practice. During the curriculum students have gone through a period of learning (knowledge), training (applying knowledge and skills) and instruction (professional conduct) resulting in the development of an integrated set of competencies. Curriculum 2007 is based upon an empirically studied integrative competency framework for veterinary professionals (www.vetpro.eu and appendix 9.A). A student needs to acquire competence with respect to the following domains: Veterinary Expertise; Communication; Collaboration; Entrepreneurship; Health and Welfare; Scholarship and; Personal Development.

The seven competency domains and adjacent eighteen competencies are in accordance with the overall objectives of the Bachelor and Master phases, which are described in detail in the Report “Program Objectives of the Veterinary Curriculum”, Utrecht, January 2006, and is available on the website (www.uu.nl/faculty/veterinarymedicine/EN/education/ProgrammeOutcomes). A hard copy will be sent to the Site Visit Team.

Both the skills-list and diseases and syndromes-list of the program outcomes were revised in 2009. Using an integrative competency-based approach provides the opportunity to develop educational programs which support and facilitate the longitudinal development of students’ clinical competence. A revision of program outcomes of the curriculum is under construction. In this revision the competency domains and underlying competencies will be explicitly incorporated in the program outcomes. KNMvD has adopted the VetPro competency framework for lifelong learning and quality assurance purposes (see: www.CKRD.nl).

**Integration of the objectives into the curriculum**

Overall teaching philosophy underlying the 2007 Curriculum consists of eight points (see appendix 9.B):

1. Approach to learning is stimulated by the didactic design of the program;
2. Students are given and bear responsibility for their own professional and academic development;
3. Relevant context for practice of the profession (in the broadest sense) is the foundation of education;
4. Good and supported system of coaching, individual feedback, assessments and exams is available;
5. Personal contact between teachers and students, and among the students themselves, is an important characteristic of the educational program;
6. Giving systematic and explicit attention to scientific training and professional conduct;
7. Educational program is coherent in its content and consistent in its didactic approach;
8. Information about the educational program is transparent and clear.

This teaching philosophy was and is leading in the further development of the different parts (e.g. courses, rotations) of the competency-based Bachelor’s and Master’s phase of Curriculum 2007. In a balanced combination of knowledge transfer (by means of lectures, guided self-tuition, and motivating self-tuition materials), application of knowledge and achievement of understanding (by means of seminars and group assignments), and development of skills (by means of practical and clinical rotations), students are trained to acquire and apply knowledge and understanding, make judgments, and develop relevant competencies (as described in the VetPro framework) required to enter the veterinary profession.

**Bachelor phase:** Aims at providing a cross-species understanding of healthy and diseased animals that are relevant for the veterinary profession. Theoretical knowledge, in-depth insight and understanding, and relevant academic, practical and communication skills are taught in sequentially scheduled courses (‘Blocks’) and additional longitudinal courses (‘Lines’). The knowledge, skills and attitudes acquired during the Bachelor’s program are applied during clinical and extramural courses in the Master’s program.
The Bachelor’s phase starts in the first year with establishing a general basis: a building plan, which deals with molecular, cellular, tissue and organism levels and devotes attention to the population level. Subsequently, this provides the foundation for interdisciplinary thematic courses (e.g. Respiration, Circulation) incorporating healthy and diseased issues in the final part of the first academic year and in years 2 and 3 of the Bachelor’s phase (see Appendix 9.D). During the Bachelor’s phase attention is paid to the development of relevant competencies as described in the VetPro-framework, in explicit courses or in a more integrated way as part of the uniform and longitudinal curricula. Students are individually supervised during their personal and professional development by a tutor. (see Standard 6.2 and Appendix 9.c and 9.D).

During the courses in the Bachelor’s phase the following educational methods are applied:

Lectures
are scheduled to give an overview of a subject or a whole course and to explain difficult topics within the course. Lectures are given for a cohort of students. A lecture is scheduled to last one hour (45 minutes lecture/15 minutes break).

Self-tuition
is organized and stimulated by subject materials at an academic level and by self-tuition questions, developed by teachers. It is directed to obtain information and to trigger curiosity. Self-tuition is stimulated by good self-tuition facilities in a Learning Environment (see Standard 3.1 and 5.1) and by the presence of teachers during the task of allocated for self-tuition. All courses have a module in a Learning Management System. This contains all necessary course information, syllabus, web-lectures, and/or assignments. The Learning Management System provides the students with an optimal opportunity to organize their learning and self-tuition. Learning becomes less dependent on time and place. Self-tuition facilities, e.g. e-modules, digital video instruction, and screencasts, are increasingly available to support preclinical and clinical training.

Small group learning
is used to practice problem-solving in the context of the future veterinary profession. A variety of didactic approaches is used in working groups, but their main goal is that students use the knowledge that they absorbed in lectures and self-tuition to achieve problem-solving and academic skills. To underline the importance of problem-solving skills, teaching is centered on problems that have a veterinary context. Integrated tasks/problems are preferred over specific, discipline-oriented problems. As a result most of the courses have an interdisciplinary focus. The variety of didactic approaches helps the students obtain social and communicative skills, or put more broadly, to develop proper professional conduct during small group learning. Small group learning is scheduled for a maximum of 25 students, in periods of two hours.

In group assignments problem-solving is trained by means of more complex tasks. A group assignment session starts with a demonstration task by the teacher in a plenary session. After the demonstration the group splits up into small groups (a maximum size of ten students and often split up in smaller groups) draws up a plan to work out the task. This requires searching for new scientific literature. The assignments normally involve the scheduling of one or two feedback moments in which the teacher answers questions from the students and checks if they are heading towards an adequate solution to the task. The group assignments are concluded and assessed by way of an oral presentation and/or a paper. For each group assignment a period of ten hours of study is scheduled, with a mean of four hours.

Practicals/labs
are mainly scheduled for students to develop veterinary-practical skills that are relevant for the future profession or to allow students to gain a better understanding of a specific topic by means of practical work in comparison with theoretical education (vice dean of education). All plans and procedures were approved by the dean, the director of education (vice dean of education) and by subject committees. The development and implementation of the Master’s program was coordinated by the Bachelor’s Development Committee and implemented according to the described plans. The coordination of this process was performed by the Bachelor’s Implementation Team under supervision of the director of education (vice dean of education). All plans and procedures were approved by the dean, the director of education (vice dean of education), after consulting the Board of Studies and the educational council of FVM.

Master’s phase:
Consists of a uniform curriculum in which all students participate in one uniform program and three different tracks, namely (1) Companion Animal Medicine (CAM), (2) Farm Animal and Veterinary Public Health (FA/VHP), or (3) Equine Medicine (EM). Starting from January 2015 students will also have the opportunity to choose a more in-depth program, entirely focused on One Health. The minor’s Governance and Policy, Research and ‘One Health’ may be chosen by all students. The minor ‘In Depth Clinical Training’ may only be chosen by students from the corresponding tracks. To provide students with applied knowledge, understanding and skills in the non-track species, basic rotations focused on these ‘non-track species’ are provided in the Master program. An overview of the Master’s programs and tracks is presented in Table 1.

Starting in September 2010, the Master’s phase was implemented in line with the described plans in the Interim Report 2010-2011. As illustrated in Appendix 9.H, students don’t follow the courses in a rigid structure but a flexible scheduling based on individual demands of the students and the logistic possibilities.

The competency-based program in the Master’s phase is founded on the VetPro competency framework. A longitudinal assessment program was designed to integrate learning and assessment. All assessment instruments (both formative and summative) are in alignment with the framework to enable aggregation of information in a structured and meaningful way. To assess specific track-related knowledge and understanding, exams (essay, short answer, MCQ), evidence-based case reports or other assessment tools are used (see for detailed description the Master’s exam program, which is included on an USB-stick).

The two main objectives of this programmatic approach to learning and assessment are:

1. Using feedback from formative assessments to maximally enhance students’ competency development (assessment for learning).
2. To include this performance information (summarized in an electronic portfolio (ePASS)) in high-stakes assessment procedures. (See: Master’s exam program, included on an USB-stick). In a design based research approach (as part of a PhD thesis) this programmatic approach was evaluated.2

In order to integrate the competencies described in the VetPro-competency framework, education on professional development is provided. This education aims to facilitate the development of the student in the seven domains of the competence framework. It is important for students to have insight into their competency development and make it transparent by the use of longitudinal development plans (personal development plan: PDP) in which they reflect on the received feedback and transform feedback into learning goals. This development is supported by peer meetings and professional development (at least four times a year) and longitudinally guided by the tutor who provides feedback and validates PDP’s. With these initiatives a proactive attitude towards students’ own learning process is enhanced, which has proven to be an important personal resource during the transition to professional practice.54

In the Master’s phase teaching is aimed at promoting in-depth understanding of topics during clinical work in a competency-based approach. During their clinical rotations students develop the relevant competencies by training their practical skills and further increase their knowledge in an integrated setting of clinics and seminars. The following educational methods are used in the Master’s phase:

- Clinical clerkships are scheduled to help students apply knowledge and understanding in a clinical environment and to develop practical skills that are necessary for the veterinary profession. Students work side-by-side with clinicians in an authentic learning environment. Self-tuition and seminars are incorporated into clinical clerkships to reactivate existing knowledge and add new knowledge in order to stimulate evidence-based veterinary medicine (EBVM).
- To support clinical and practical training (digital) self-tuition materials, e.g. video instructions, are available;
- Individual research training is scheduled for students to learn to apply the basic principles of scientific research in a 12-week Research project (17 ECTS) (Externships (Extramural Studies) e.g. in clinical practices affiliated with FVM. (For a detailed description of the Master’s program: see the Master’s exam program, which is included on an USB-stick).

9.2 MAJOR CURRICULUM CHANGES THAT HAVE OCCURRED SINCE THE LAST ACCREDITATION

Since the last accreditation in 2007 a new curriculum with a Bachelor’s and Master’s phase was implemented.

Bachelor’s Curriculum: In 2007-2010 the Bachelor’s Curriculum was implemented and introduced in annual stages. The content of the core curriculum set out in the former Curriculum 2001(C2001) was the basis for determining the Veterinary Bachelor’s Curriculum. All courses in the three-year curriculum were developed by Bachelor’s Development Committees and implemented according to the described plans. The coordination of this process was performed by the Bachelor’s Implementation Team under supervision of the director of education (vice dean of education). All plans and procedures were approved by the dean, the director of education (vice dean of education), after consulting the Board of Studies and the educational council of FVM.

Master’s Curriculum: From September 2010 onwards the new Master’s Curriculum was implemented. Most courses of the Master’s program were developed by Master’s Development Committees based on the blueprint for the Master’s of Veterinary Medicine, including the teaching philosophy. Members of these committees were mainly full and associate professors from the tenure staff of FVM. The development and implementation of the Master’s program was coordinated by the Master’s Implementation Team, under supervision of the director of education (associated dean of education).

Program | Tracks and number of weeks
--- | ---
**Uniform part (Major Uniform)** | **FA & VHP** | **CAM** | **EM**
Systeams/Microbiology/Pathoological Diagnostics | 17 | 17 | 17
Management and the Vet’s Scientific Responsibility | 17 | 17 | 17
**Track (Major differentiated)** | **FA & VHP** | **CAM** | **EM**
Animal and Microbial Infectious Diseases | 20 | 20 | 20
Preventive Veterinary Medicine | 17 | 17 | 17
**Electives** | **FA & VHP** | **CAM** | **EM**
Research projects/Internship | 17 | 17 | 17
**Specialization Modules** | **FA & VHP** | **CAM** | **EM**
Horses | 17 | 17 | 17
Table 1: Master’s programs Farm-Animal and Veterinary Public Health, Companion Animal Medicine, and Equine Medicine.
9.3 CURRICULUM ASSESSMENT

FVM applies systematic quality management at different levels to its educational process, based on the Plan Do Check Act circle (Deming circle).

- Course evaluations are based on student questionnaires (see Standard 6.5) and teacher questionnaires. These evaluation procedures and follow up are described in more detail in Appendix 9.F.
- Each year an annual overview is held at the end of the academic year (National Students Survey); all universities and faculties in The Netherlands participate in this survey. The survey monitors and benchmarks the students’ appreciation of the curriculum, teaching philosophy, staff facilities and support students receive from their teachers and tutors. The results of the survey are discussed in the Board of Studies and with a delegation of the students, resulting in action points;
- Additionally, innovations and new initiatives are evaluated on regular basis. For instance, in 2011 the Bachelor's program was reviewed by a committee of tenure staff and students (chair Professor Marjanne Everts). The report and recommendations of this committee form the basis of the present adjustments and innovations of the Bachelor’s program. Another example is the internal audit committee reviewing the assessment procedure in the Master’s phase (Spring 2014);
- Each year the dean and vice dean of education report on the results of the quality assurance program to the university board;
- Moreover, FVM has a Chair ‘Quality Improvement of Veterinary Education’; researchers investigate didactics and innovations in veterinary education. The results of this research are published in international and national journals. In the period 2008-2014 eight PhD students finished their PhD thesis on veterinary education;[1]
- Different committees and officials are involved in the quality assurance procedures. All formal and informal tasks and responsibilities of these committees and officials are summarized in Standard 1, Appendix I.D.

9.4 STRENGTHS AND WEAKNESSES OF THE CURRICULUM AS A WHOLE

Strengths

- Providing a modern, competency-based curriculum, that offers possibilities for in depth programs (tracks) and space for academic, personal and professional development;
- Education based on a strong teaching philosophy and outcome-oriented (competency-profile including well-defined program outcomes);
- Well-developed quality assurance system;
- Well-trained, professional staff and excellent (clinical) training facilities (strongly related to clinical services and research);
- Strong academic environment in which innovations in veterinary education are evidence-based (Chair Quality Improvement in Veterinary Education);
- Excellent ‘Educational Community’ with very active students and student associations (for an overview see Standard 6, Appendix 6.A);
- Excellent relationships with the (veterinary) professional field;
- Well-described and good functioning system for faculty development (teaching qualifications);
- Investment in finding alternatives for use of experimental animals in its teaching;
- Defining a strategy (roadmap) for educational improvements and innovations in the forthcoming years, in alignment with the UU (see FVM Strategic Plan 2013-2017, which is included on a USB-stick).

Weaknesses

- Limited focus on internationalization in the curriculum in order to prepare students for the internationalized world;
- Many teachers involved in some courses (content ownership, social cohesion);

- Critical mass for specific fields (poultry, ruminants) of expertise is small;
- Evaluation of individual teachers has been developed but needs structural follow up;
- Certain disciplines like pharmacology, pathology, avian and small mammal medicine, nutrition or anatomy are less visible as individual subjects for students (due to the integrated Bachelor's curriculum courses).

9.5 PRECEPTOR AND EXTERNSHIP PROGRAMS

In the Bachelor’s phase, externships are not a structural part of the Bachelor’s program. The Master’s phase provides at least one eight-week extramural clerkship in a veterinary clinical practice related to the chosen animal species track. KMMvD assists FVM in selecting these veterinary clinical practices. Veterinarians participating as teachers in this clerkship are trained by the responsible staff members in ‘teaching and education in the clinical phase’, ‘assessment of students’ and other relevant subjects. Additionally students are allowed to choose individual (international) externships in the context of their electives (minor) or research externships, which are individually organized and often based on personal relationships of staff members with partners in the field.

9.6 CURRICULUM DIGEST

All Bachelor’s courses (including electives) are listed in Appendix 9.E. All Master’s courses (including electives) are described in appendix 9.1. All appendices include course descriptions and a table including course hours.

9.7 PLANS FOR CURRICULAR REVISIONS

Plans for curricular revisions and educational innovations are documented in FVM’s Strategic Plan 2014-2016. (see FVM Strategic Plan 2013-2017, which is included on a USB-stick).

9.8 TESTING/GRADING SYSTEM AND THE PROCEDURE FOR UPHOLDING ACADEMIC STANDARDS

The Dutch Higher Education and Research Act states that the Examination Board is responsible for monitoring the program outcomes of the veterinary curriculum and for maintaining the quality standards of the examination system. At FVM there are two examination boards, one for the Bachelor’s, and one for the Master’s program. Both examination boards include three senior teaching staff members and one external expert on education and assessment. Two administrative secretaries support and advise the examination boards. The examination boards themselves detect possible shortcomings by monitoring exams at random and whether the examination system is an accurate reflection of the course content. In addition, the Quality Assessment Committee (TKC) supports the examination boards and provides suggestions to improve. This committee consists of academic staff from all departments, and assists and advises individual course coordinators in preparing and analyzing their exams. See Appendix 1.B.

In the Bachelor’s program, all courses are concluded with a final exam, and together with a mix of tests this results in a final grading of the course on a scale of 1 to 10. To pass, a score of 5.5 or higher is required. A student who fails (<5.5) needs to retake the exam. The results of the final exam are statistically analyzed by COLUUI. An Objective Structured Clinical Examination (OSCE) is part of the examination program in the second and third year of the Bachelor’s program. In OSCE a number of different skill-domains (e.g. communicative, clinical, laboratory) are assessed in five minutes using fourteen stations. In addition to these examinations and OSCEx, each course may contain additional assessments. In the first year of the Bachelor’s program BSA is used (see Standard 7.5). The Bachelor’s Examination Board executes BSA. For a detailed overview of the Bachelor’s assessment program see appendix 9.G. As previously mentioned in Standard 9.1, the assessment program in the Master’s program is explicitly competency-based to prepare students for veterinary practice. In order to optimally align learning and assessment during the phase of clinical teaching, the main focus of the assessment program is to provide the students with "meaningful" (narrative) feedback. Besides maximal enhancement of the students’ learning process, the assessment program has to allow FVM to make (reliable and valid) decisions on promotion and licensure.
The assessment program has been extensively evaluated which has resulted in a PhD thesis. In addition, an internal audit committee has been appointed (Spring 2014) to evaluate the Master’s phase and its assessment program.

During the Master’s program students are required to demonstrate their development concerning all competencies. This process is supported by a digital portfolio (e-PASS) that allows students to collect and document their received feedback. Tools to document feedback are multivariate feedback instruments, mini-clinical examinations, evidence-based case reports, and these are supplemented with specific knowledge testing. Personal development plans are part of the portfolio in which the students reflect on their (clinical) performance, and in which they formulate individual learning goals. During their (clinical) training, students are guided and coached by a tutor in developing their competencies. At the end of the major and minor program, information aggregated in the digital portfolios is assessed individually by at least two members of the portfolio assessment committee. Qualitative information is provided on each competency domain. Besides this narrative feedback a quantitative mark is provided on a scale of 1 to 10, and a score of 5.5 or higher is required to pass. Some specific Master’s phase courses, like the research project, are concluded with a separate mark. For a detailed description of the Master’s phase exam program (see for detailed description the Master’s exam program, included on USB-stick).

References


10. Research Programs

10.1 PROGRAMS OF RESEARCH EMPHASIS AND EXCELLENCE THAT INTEGRATE WITH AND STRENGTHEN THE PROFESSIONAL PROGRAM

Thematic interdisciplinary research programs: The Institute of Veterinary Research (IVR) embodies five thematic interdisciplinary research programs, notably: Biology of Reproductive Cells, Tissue repair, Emotion and Cognition, Risk Assessment of Toxic and Immunomodulatory Agents and Strategic Infection Biology. In addition, research is conducted for the training of veterinary residents, with the aim of maintaining top-level veterinary specialists in the fields outside the focus of the above programs. This research in ‘Advances in Veterinary Medicine’ (AVM) forms the sixth program. The vision, mission and key objectives of these programs are described below and are described in Appendix 10.A. In our current research policy, the concept of ‘One World, One Health, One Medicine’ forms a major focal point. In 2012, an independent external quality assessment of the IVR over the period 2006-2011 was conducted according to the Standard Evaluation Protocol for Public Research Organizations (Royal Netherlands Academy of Arts and Sciences; Quality Assurance Netherlands Universities–QANU). The international review committee concluded favorable with respect to the academic reputation (productivity) and the societal relevance.

IVR staff produced over 3,000 scientific publications in the period 2006-2011. The number of publications in peer-reviewed scientific journals considerably increased from around 420 in 2006-2008 to approximately 500 in 2010/2011. This strong increase was accompanied by a decline in the number of publications in ‘other journals’. IVR staff contributed to nearly 200 books and book chapters. The trend to prefer to publish in peer-reviewed scientific journals may be explained by the more stringent IVR publication and research assessment policy in the period 2006-2011 which may have increased quality awareness. The committee applauds the new policy to properly differentiate between the bibliographic benchmarking of biomedical and veterinary research. This policy specifies targets per domain for each group. The overall productivity and the monitoring activities are excellent and exemplary. IVR research aims at scientific excellence, but is also relevant for a variety of stakeholders including policy makers in human and veterinary health, ecosystems and wildlife. Interactions with public stakeholders including animal rights organizations, companion and livestock owners are well incorporated into the research policy. Research supports the development of clinical guidelines is directly relevant for the veterinary profession. The Committee applauds the stated goal to provide a solid scientific basis for innovation and debate that benefits veterinary education, veterinary practice, related public health, and the economy. This should safeguard a good balance between the interests of various stakeholders, based on long-term sustainability views. The committee also applauds the installation of a dedicated chair in EBVM, to support translational medicine and link clinical questions and research, and in particular to promote the development of clinical guidelines.


The committee assessed the following programs of FVM:

<table>
<thead>
<tr>
<th>IVR Programs</th>
<th>Quality</th>
<th>Productivity</th>
<th>Relevance</th>
<th>Viability</th>
</tr>
</thead>
</table>

Table: A: Outcome of QANU research Review Veterinary Sciences UU 2012 (2006-2011). In case SIP scores were different from the previous assessment in 2009, former scores are depicted between square brackets [ ]. As shown, the overall research performance has further improved over the last years with SB and KATIA programs being awarded with the ultimate score. SIP scores: Excellent (5); Very Good (4); Good (3); Satisfactory (2); Unsatisfactory (1).

Research in Education: In addition to thematic interdisciplinary research programs and the AVP program, since 2005 FVM has a dedicated Chair on Quality Improvement in Veterinary Education, who deals with research in scientific research. The mission of the chair is to optimize the educational environment for both students and teacher and to bridge the gap between ‘evidence based education’ and the daily practices of FVM. NB: the Chair on Quality Improvement in Veterinary Education had eight publications in 2011, four in 2012 and seven in 2013. On average four Faculty are involved in educational research.
10.2 EVIDENCE FOR THE BREADTH AND QUALITY OF THE FVM RESEARCH PROGRAM

10.2.1. Number of individual faculty members within each department involved in research

<table>
<thead>
<tr>
<th>Department</th>
<th>Total number of faculty</th>
<th>Number of faculty involved in research who teach in the professional curriculum</th>
<th>( \times \text{extramurally sponsored research contracts} )</th>
<th>Number of original peer-reviewed publications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infectious Diseases &amp; Immunology</td>
<td>20</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Pathobiology</td>
<td>12</td>
<td>6</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Veterinary Surgery &amp; Radiology</td>
<td>10</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Animal Science</td>
<td>15</td>
<td>7</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>General (Faculty)</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td><strong>FVM Total</strong></td>
<td><strong>53</strong></td>
<td><strong>29</strong></td>
<td><strong>29</strong></td>
<td><strong>29</strong></td>
</tr>
</tbody>
</table>

Table B Detailed information about the years 2013, 2012 and 2011.

10.2.2. Other measures of FVM research activity

FVM actively disseminates research results through publication in peer-reviewed scientific journals (numbers in Table B). In 2013 FVM held 30 editorships and about 60 editorial board memberships of scientific journals, and actively participates in and organizes international scientific meetings. PhD students are actively encouraged to present their results at international scientific meetings. IVR organizes an annual Veterinary Science Day with purpose of promoting communication between senior and junior, clinical and non-clinical researchers. Indicators of personal research excellence are, amongst others, FVM Vici (1), Vidi (1), Veni (2), Rubicon (2) and Meervoud (for more excellent women in research) (2) laureates who received prestigious grants from the Netherlands Organizations for Scientific Research (NWO). In addition, EMBO Young Investigator Award, EU Marie-Curie-, ERC stimulus- and ERC Starting grant from the EU as well as an honorary doctorate from Leuven and Heineken Prize for Environmental Sciences were awarded. FVM participates in numerous committees and boards of (inter)national and international and (non)governmental organizations. FVM research is also distinguished by several honorary doctorates/professorships, international research prizes and patented results.

10.3 IMPACT OVERALL RESEARCH PROGRAM ON PROFESSIONAL PROGRAM AND – STUDENTS

10.3.1. Percentage of professional students in graduating class actively participated in research projects

All students (100%) actively participate in research projects before graduation.

10.3.2. Programs that facilitate veterinary student research and link professional and graduate education

Utrecht University is a research-led university. As a consequence, the academic staff members most often come from a research background and participate actively in one of our research projects. The entire tenure staff has a PhD. Recent research, and EBVM are therefore important drivers of teaching at FVM. In the teaching program research is the main theme in the following courses:

- During a 7.5 ECTS (week 5) course in the Bachelor’s phase, students all have to write a scientific thesis (as described in Standard 9);
- During the Master’s program, a 12-week research internship is scheduled. During this internship, students participate in one of the research projects of FVM or our national or international research partners (for more details see Standard 9 and Appendix 9.3);
- Apart from the obligatory course and internship, individual students can choose to extend their research internship up to 39 weeks out of 180 weeks of the Master’s program;
- Excellent (talented) students are offered a possibility to take one additional year for performing research/ participating in a research project. This program is called the Master Honors Program (HP).

10.3.3. Number of graduates engaged in research five years after graduation

IVR has an important task in the training of PhD’s. On average 40 students successfully defended their PhD thesis each year in the period 2008-2013. In 2013, the total number of PhD’s amounted to 273, of which approximately 100 bear the title of DVM. Of these, 55 students obtained their DVM. This implies that in general at least 55 graduates are engaged in research five years after graduation. Although we do not monitor the career path of alumni, FVM feels content that this number might actually be slightly higher, since the knowledge that some of our graduates pursue a scientific career at institutions and/or abroad.

10.3.4. Plans for enhancing the impact of college research on the veterinary professional program

- Bachelor: 10% of the (talented) students may choose to participate in an honors program; anticipation in research is compulsory.

Master: Offering the students during the optional courses in the Master’s program to:

- Enlarge the research rotation from the compulsory 12 weeks up to a program of 39 weeks of research;
- Participate in the minor One Health which includes at least 6 month of research. This minor starts in January 2015.

Honors Program Master: FVM has had an Honors Program (HP) for excellent students since 1993, formerly known as Excellence Track. HP has the following goals:

- To recognize the most talented veterinary students;
- To allow talented students to perform research in veterinary comparative medicine;
- To create a resource for future PhD students, tenure staff and veterinary researchers.

Students are selected in their third year. Students with high grades in the first two years of study (mean of > 8.00 on a scale of 1-10) are invited for an interview. HP takes one extra year and is mostly situated between the Bachelor’s and Master’s phase. Students have to produce a written report in English, with a public presentation at the end. HP started in 1993 and since 2009 64 students have completed their HP and received a certificate.
11. Outcome Assessment

11.1 STUDENT OUTCOMES
Outcomes of the program are well defined and described in the Report Program Outcomes of the Veterinary Curriculum, Utrecht, January 2006 and the annexes ‘Skills’ and ‘Diseases’ list. In the Bachelor’s program, every course is separately assessed during and at the end of a course. The testing and evaluation of the Veterinary Medicine Master’s program consists of a combination of the following elements: 1) Explicit testing of knowledge and skills; 2) Evaluations of the development of the student’s competencies based on the information collected in the e-PASS e-portfolio; 3) Assignments completed with a satisfactory grade (‘Satisfied Requirement’) and 4) other requirements. Details of this testing and evaluation program are described in the Examination Program of the Master’s in Veterinary Medicine (included on an USB-stick).

11.1.1 NAVLE school score report data and passage rates over the past five years
FVM cannot provide NAVLE score report data because only a limited number (< ten per annum) of final year students and recent graduates sit this exam. However, FVM can provide the number of graduates per year and the average duration of the study. In 2012 and 2013, the number of graduates was higher than the years before because these are students who received a lot of counselling to be able to finish the Curriculum 2001 in time. It can be concluded that in general, students complete their studies faster than seven years ago (see also the self-study report 2007).

<table>
<thead>
<tr>
<th>Year</th>
<th>DVM Exam</th>
<th>Average Study Time/months</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>197</td>
<td>88</td>
</tr>
<tr>
<td>2008</td>
<td>158</td>
<td>85</td>
</tr>
<tr>
<td>2009</td>
<td>151</td>
<td>89</td>
</tr>
<tr>
<td>2010</td>
<td>154</td>
<td>87</td>
</tr>
<tr>
<td>2011</td>
<td>154</td>
<td>87</td>
</tr>
<tr>
<td>2012</td>
<td>203</td>
<td>87</td>
</tr>
<tr>
<td>2013</td>
<td>200</td>
<td>86</td>
</tr>
</tbody>
</table>

Table A: Graduating students and average duration of study. “a combination of C2001 Students and Master’s students

11.1.2 Student attrition rates with reasons
Student attrition rates per cohort for the past six years are given in Table B. The attrition rate varies slightly. It is expected that the rates of the younger cohorts (especially 2012, 2013) will increase, because students in these cohorts are still studying. There is a difference between withdrawals in the Bachelor’s and withdrawals in the Master’s. Most withdraw in the first year of the Bachelor’s program due to RSA. Other reasons to withdraw are medical and personal circumstances. Sometimes the program doesn’t fulfill the expectations of students or they experience the program as too difficult. After passing the Bachelor’s exam, some students choose to start another Master’s program (not veterinary). The mean attrition rate is 12 %.

<table>
<thead>
<tr>
<th>Cohort</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of students discontinuing program</td>
<td>40</td>
<td>30</td>
<td>26</td>
<td>34</td>
<td>25</td>
<td>17</td>
<td>17</td>
</tr>
</tbody>
</table>

Table B: Student attrition rates

11.1.3 Evidence of student learning outcomes for clinical competencies
During the curriculum students are facilitated and encouraged to develop the relevant competencies required to enter the veterinary profession. These competencies, as described in the VetPro-framework, are in line with the program outcomes and include the topics described in the nine listed NAVLE competencies. For graduation the VetPro-competencies and program outcomes are leading in licensure and promotion. A PhD project, (Competency-based veterinary education – An integrative approach to learning and assessment in the clinical workplace, Harold Bok, 2014) investigated which competency profile proved to be relevant for newly graduated veterinarians. In a design-based research approach, using a variety of qualitative and quantitative research methods, design and implementation of the longitudinal assessment program in the Master’s program was further investigated. This study focused on the two main goals of the assessment program; 1) maximally enhancing student learning to increase competency development, and 2) to ensure a valid and reliable judgment for promotion and licensure. The following section addresses how FVM ensure that graduates are prepared for entry-level practice for each of the nine listed competencies:

1. Comprehensive patient diagnosis (problem solving skills). Appropriate use of clinical laboratory testing, and record management;
2. Comprehensive treatment planning including patient referral when indicated. During the Bachelor’s program, both competencies are thoroughly assessed during the longitudinal line-structured courses.
Emergency and intensive care case management. During the Bachelor courses Adaptation and Nephrology, Anesthesia and the clinical rotations (uniform and Tracks CA and EL) students are trained and assessed in order to be able to detect and recognize pain in different animal species, know different therapeutic options for analgesia, and design suitable analgesia protocols in the [common] different animal species. This competency is included in the domains Veterinary Expertise and Health and Welfare.

Emergency and intensive care case management. These aspects receive increased attention at FVM as it is identified as a separate competency in the Veterinary Expertise domain. During the 3.5 week rotation in the IC-unit and the 3-week rotation in the Internal Nursing Care unit in the Companion Animal Track rotations, and during the surgery and ambulatory clinic weeks in the Equine Track rotations these aspects are explicitly addressed and assessed.

Health promotion, disease prevention/biosecurity, zoosn, and food safety. These aspects are explicitly assessed in the Bachelor’s program in Block 19 VPH, and in the Master’s program during the ‘basic rotations’ for the Non-Farm Animal Track students, and in the Block 5 (VPH) of the Master’s program for with small animal students. These competencies are included in the domains Veterinary Expertise and Health and Welfare.

Client communications and ethical conduct. In the Bachelor’s program, basic knowledge and skills regarding these aspects are assessed in all courses that cover professional conduct (client communication). Ethical conduct is explicitly addressed in the Line 4 course of the Bachelor’s program (see Standard 9), but always as an integrated aspect of most courses (such as Line 3 and 5 course in the Bachelor’s program). During the clinical rotations in the Master’s program, application and further development of these skills take place by confronting students with different patient settings with animal owners involving clinical cases with ethical aspects. These competencies are included in the domains CDP. By appointing an assistant professor forProfessional Conduct (incl. communication) in 2014, FVM will enhance the cohesion and the assessment of client communication as an integrated part of the personal and professional development in both the Bachelor’s and the Master’s program.

Critical analysis of new information and research findings relevant to veterinary medicine. An important aspect of this competency is addressed by the project in the first year of the Bachelor’s program and the thesis in the third year of the Bachelor’s program. In the Master’s program this aspect is explicitly assessed during the three-month students research internship and the Evidence Based Case Reports throughout the Master’s program. By appointing a full professor for EBVM in 2013 and 2014, FVM will enhance the cohesion and the assessment of this aspect in both the Bachelor’s and the Master’s programs.

This competency is included in the domain Scholarship.

In the Master’s program, the listed competencies are trained and assessed by the longitudinal assessment program, using a digital competency-based portfolio containing different feedback and assessment instruments. In Table C the student rates for the major and minor are included (scored of 4 to 10).

### Table C: Grades for evidence presented in competency-based portfolio in the Master’s (score of 6 and Higher is required for promotion).

<table>
<thead>
<tr>
<th>Grades</th>
<th>Major Students (n=284)</th>
<th>Minor Students (n=164)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>5</td>
<td>10</td>
<td>4</td>
</tr>
<tr>
<td>6</td>
<td>47</td>
<td>19</td>
</tr>
<tr>
<td>7</td>
<td>128</td>
<td>74</td>
</tr>
<tr>
<td>8</td>
<td>55</td>
<td>90</td>
</tr>
<tr>
<td>9</td>
<td>9</td>
<td>12</td>
</tr>
<tr>
<td>10</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

### 11.1.4 Employment rates of graduates (within one year of graduation)

Data about graduate employment rates are stored in RNVA database. Since not all graduates are members of RNVA (since not all graduate figures could be lower than the real figures). In the last year, a telephone survey led to employment information for about 126 of 295 alumni who had graduated in 2013. 45 respondents (35.7%) had graduated within the current curriculum (Bachelor-Master, E2007), 81 of the respondents (64.3%) were graduates of the former curriculum (Curriculum 2001) (see for detailed information on these figures table 1, appendix 11A).

It took veterinary graduates a mean of 82 days to find a job at the level of a Master’s graduate. Graduates of the former curriculum needed more time to find a job at Master’s graduate level than the respondents who graduated in the current curriculum (96 days compared to 56 days Curriculum 2007). Also, Curriculum 2007 graduates were quicker in finding a first job at Master’s graduate level than their Curriculum 2001 counterparts (80% of Curriculum 2007 graduates had a first job after graduation that was at Master’s graduate level, only 62% of Curriculum 2001 respondents did the same). However, one should keep in mind that there are 81 Curriculum 2001 respondents, as opposed to 45 Curriculum 2007 respondents.

### 11.1.5 Survey two and five years post-graduation (educational preparedness and employment satisfaction)

Last year a research project on Curriculum Evaluation was performed, in which alumni of curriculum 1995 and 2001 were surveyed to see if the most important educational goals are met. The survey was performed in two and five years post-graduation from 2001-2014. There were no competencies that scored significantly better for curriculum 2001 in comparison to curriculum 1995. Alumni of both curricula felt that scholarship was overrepresented, and primary cases and surgeries and communication skills were underrepresented in education. The alumni telephone survey (see Appendix 11.1.D) showed that 31 of 45 Curriculum 2007 graduates felt their education (at some level) lacked focus on primary care and mentioned that primary cases were underrepresented. The telephone survey showed that of the 76 graduates who have a job at a Master’s level, 92% are satisfied with the contents of their work. 66% are satisfied with the number of contract hours, whereas 37% are not. Most of the latter graduates would like to have more contract hours. Not included in these numbers are graduates who combine jobs at a Master’s grade level (n=7). All of these are satisfied with the work, one of their jobs and included in the doctorate and combined contract hours (but would not be satisfied with the number of just one of these jobs).

### 11.1.6 Assessment of employers of graduates to determine satisfaction with the graduates

The dean and the Faculty Board have meetings with the Board of RNVA in which more general aspects of curriculum development are discussed. The satisfaction of employers with graduates was also surveyed. 71 employers were asked about the competencies of veterinarians that graduated in 2013. The response rate was 45/71. No distinction between the different tracks was made. The average grade of employers in 2013 was 7.2 (on a scale from 1-10). A distinction between employers that graduated from Curriculum 2001 and Curriculum 2007 was made. The mean score for employers of Curriculum 2001 was 7.1 (n=30) and of Curriculum 2007 was 7.4 (n=15). Fifteen competencies were scored by the employers on a 5-point Likert scale. The averages are given in Table 2 in Appendix 11.A, with a distinction between Curriculum 2001 and 2007. Except for the competency in emergency care/ICU management, Curriculum 2007 veterinarians scored better or the same as curriculum 2001 graduates by their employers on all competencies. In open questions, most positively mentioned were communication skills and good theoretical knowledge (mainly internal medicine). Points for improvement that were mentioned were mainly surgical skills, primary care, commercial skills and emergency care skills.

### 11.1.7 Assessment of FVM related to subjects

Last year, 76 veterinarians who instruct students during their Master’s externship were asked to score 15 competencies on a 5-Point Likert scale. Because most veterinarians instruct one more than one student a year, they were asked to give an average score per competency. The response rate was 43/62 (Companion Animals: 14/34, Equine 6/6, Farm Animals 22/35). A distinction between tracks was made. Mean scores per differentiation can be found in Table 3 in Appendix 11A.

Basic surgical skills, Treatment planning and patient referral and Emergency care/ICU management showed relatively low scores. Regardless of students’ animal species, the highest scores were given for more animal species (which could suggest that the development of these competencies after the externship in the very beginning of the veterinary career could be important. 

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*Self-Study Report 2014 – Faculty of Veterinary Medicine*
11.1.8 Additional assessment assisting the college in benchmarking its educational program

Members of the Education Board, and especially the Chair Quality Improvement in Veterinary Education are regularly invited to presentations about curriculum development and modern curriculum approaches. Recent presentations include:

- AMEE-conference 2008-2013;
- Ottawa-conference 2010 and 2012;
- Dutch Conference on Medical Education 2008-2013.

An important benchmarking instrument in The Netherlands is the research performed by the Center for Higher Education information. Yearly they publish student judgments on FVM and the veterinary curriculum in its Guide on Higher Education. On a 5 point scale, veterinary students rated their Education in general with a 4,08, which is a high score compared to other Dutch higher educational programs.

Scores for Level and General abilities are high, on both bachelor and master level. For instance, bachelor students score the level of their education with a 4,17, and master students score this question with a 4,04 (the highest score on master level within the UU).

Questions on General abilities like the ability to solve problems, Teamwork and Developing a critical attitude have some of the highest scores in UU (these three examples scored highest within UU on Master level).

Assessment, scheduling and quality control have all improved since the survey in 2013, but progress should still be made. Students gave study facilities a low rating. This is a general problem within UU and is already being addressed.

<table>
<thead>
<tr>
<th>Respondents (all)</th>
<th>2013</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respondents (bachelor)</td>
<td>620</td>
<td>538</td>
</tr>
<tr>
<td>Respondents (master)</td>
<td>226</td>
<td>184</td>
</tr>
<tr>
<td>Your education in general (all)</td>
<td>4.06</td>
<td>4.09</td>
</tr>
<tr>
<td>Your education in general (bachelor)</td>
<td>4.15</td>
<td>4.18</td>
</tr>
<tr>
<td>Your education in general (master)</td>
<td>3.87</td>
<td>3.93</td>
</tr>
</tbody>
</table>

**11.2.2 Adequacy of resources and organizational structure to meet the educational purposes**

**11.2.2.1 College evaluates progress in meeting its mission**

Internal evaluation

FVM has, on the basis of its mission, formulated a Strategic Plan (FVM Strategic plan 2013-2017, Appendix 0.A) which will be the roadmap for FVM for the forthcoming years. This plan is in line with the Strategic Plan of UU. The implementation of this plan is monitored by the board of FVM, and is the basis of the yearly P&C cycle at two levels: [1] Faculty Board with Management Teams of the departments and [2] the University Board with the dean and vice dean of education. These formal meetings draw on data from our internal audits to evaluate, discuss and follow up on all aspects of education, research and management. Examples of internal evaluations are the Bachelor’s evaluation performed in 2011, and the internal audit on the Assessment program of the Master’s Curriculum.

Chair Quality Improvement in Veterinary Education

The chair Quality Improvement in Veterinary Education (established in 2007) evaluates different aspects of the curriculum. This has resulted in eight PhD-reports:

1. Developments in veterinary medical education – intentions, perceptions, learning processes and outcomes (Debbie Jaarsma, 2009);
2. Evaluating the Veterinary Clinical Teacher (Tobias Boerboom, 2011);
3. On the development of competence in solving clinical problems (Stephan Ramaekers, 2011);
4. Learning of veterinary professionals in communities (Esther de Groot, 2012);
5. Competency-based veterinary education – An integrative approach to learning and assessment in the clinical workplace (Harold Bok, 2014);
6. Exploring seminar learning in relation to students, teachers and context (Anemarie Spruijt, 2014);
7. Performance of young veterinary professionals (Nicole Mastenbroek, 2014);

**Benchmarking**

Benchmarking forms an integral part of our evaluation system. To maintain excellence in education, research and management, FVM has imposed high standards from the beginning, and has been evaluated regularly in the past; previous peer reviews include:

- Association of Universities in the Netherlands, Quality Assessment of Research (1999);
- Royal Netherlands Academy of Arts and Sciences (graduate program: 1996, 2000);
- Internal self-evaluations of research performance (1974, 1977, 1979, 1992 and annually from 1982);
- Thomson Scientific: ranking Veterinary/Animal Research Institutions (2005);
- Assessment of Research Quality: Research in Veterinary Sciences (includes graduate program, 2005);
- Yearly benchmarking performed by the Centre for Higher Education information based on yearly student judgments on FVM and the veterinary curriculum in its guide on Higher Education (see App. 11.11).

With regards to curriculum development, FVM also actively participates in more informal settings with peers such as:

- Section Medical Sciences of the Association of Universities of The Netherlands (medicine eight schools, dentistry two schools, and veterinary medicine), and International associations for veterinary education:
  - AAVMC;
  - IVW, members represent veterinary schools (http://www.veteducation.org);
  - Network of Veterinarians in Europe (NOVICE, www.noviceproject.eu) leading partner;
  - AMEE, Board membership;
  - AITVM board membership;
  - Keldat program quality control;
  - VfE;
  - VETVIP (European project 2013-2014);
  - OVAM;
  - Educational Symposia of the EAEVE;
  - Faculty Board has two formal meetings a year with KNMvD to discuss all aspects of mutual policies.

**11.2.2.2 Adequacy of resources and organizational structure to meet the educational purposes**

Despite the ambitious aspirations for the next five years as described in FVM Strategic Plan 2013-2017 FVM believes it is excellent resourced to deliver an exciting and comprehensive educational program, with outstanding clinical facilities and a high caseload for the students. The program outcomes are well defined and teaching and learning is based on an evidence-based competency framework and a broadly based ‘Teaching Philosophy’. The basic governmental budget is presently stable, and does cover the real costs for the teaching of the departments. In spite of the economic crisis we were able even to improve the case load for students during the evaluation period (see Standard 4) for nearly all species.

Faculty numbers and quality are in proportion to the mission and ambition of FVM. FVM strives for excellence in education/clinical services and research and have installed the appropriate staffing plans in order to reach this goal [recruitment, professional development, qualifications, and career paths], based on yearly system of ‘plan-dire-check-act’ on the level of individual staff (see Standard 8).
11.2.3 Outcomes assessed for meaningful activities for the overall educational process

FVM, in close cooperation with UU, has a clear system to recognize and foster educational excellence. As stated in the UU Strategic Plan, FVM strives to have at least 80% of the FVM’s teachers hold the Basic Teaching Qualification (BKO) and 35% of the Faculty holds the Senior Teaching Qualification (SKO) in 2016. Apart from that, at least one of our senior staff per year participates in the Educational Leadership courses organized by CEUT, and already four of our senior staff have participated as a teaching fellow in a focused UU-program only for exceptionally talented faculty.

Under the responsibility of the Education Board, each academic year an Educational Day is organized for all teaching staff. The program focuses on goals and different aspects of the curriculum under construction and is composed of a variety of presentations, workshops and creative social activities.

During this Education Day, the winners of the yearly education awards for senior teachers and for junior teachers are announced; three teachers are nominated in each category. The award winners of the past seven years are given in Appendix 11.A. The awards consist of a certificate, a sculpture – symbolizing the cooperation between teachers and students – and an amount of € 3000 (senior) and € 1000 (junior), which the winner is free to spend on anything that might enhance the quality of his/her teaching.

FVM also facilitates the teaching staff to participate in and contribute to the annual congress of the Dutch Flemish Association for Medical Education. Cooperation and benchmarking with medical schools in the Netherlands influenced the goals of the FVM curriculum, especially the goal of a further integration of ‘healthy and diseased’, and implement One Health and inter-professional cooperation in the curriculum.

Additionally FVM successfully participated in a number of innovation project provided by UU (Blended Learning; Communicate (game); Digital Microscope Imaging; Curriculum mapping; Simulation of Virtual Patients; Teachers Education & Professionalization).

11.2.4 Description how outcomes findings are used by the college to improve the educational program

The chair ‘Quality improvement of Veterinary Education’ investigates didactics and innovations in veterinary education. Besides publishing scientific articles in several international and national journals, the results of this research serve as direct input for curriculum development at FVM. For example, the results of the PhD-thesis "Exploring seminar learning in relation to students, teachers and context", ensured that curriculum developers and teachers are informed about the 'best practices for seminar learning.' As a result faculty development programs are based on these research findings. Furthermore, the PhD-project “Competency-based Veterinary Education: An integrative approach to learning and assessment in the clinical workplace”, used design-based research strategies to bridge the gap between educational theory and practice. This resulted in a longitudinal competency-based educational program in the Master. Furthermore, the VetPro competency-profile developed during this PhD-project, is adopted by KNMvD and serves as the foundation for accreditation purposes and lifelong learning programs.

As described in Standard 11.1.7 the perceived basic surgical skills and emergency care/ICU management skills by students showed relatively low scores. Partly this could be caused by the transition from veterinary school to clinical practice. By implementing the competency-based educational program in the Master, students will develop relevant competencies that are in line with the demands from professional practice. The portfolio system (e-PASS) allows students to visualize their development, reflect on their progress, and undertake actions to improve their performance. Simultaneously, it allows faculty to follow students’ performance and intervene if necessary. Lifelong learning and certification by KNMvD of veterinarians is based on the same competency profile (VetPro).

Furthermore, the duration of extramural clerkships was extended from 6 till 8 weeks based on these findings. With respect to basic clinical and surgical skills there is increased attention in the Bachelor through the implementation of skills training programs containing objective structured clinical examinations (OSCE).

APPENDICES
APPENDICES STANDARD 0

Appendix 0.1 Abbreviations

ASP    Administrative and Support Staff  LNV    Ministry of Agriculture, Nature and Food Quality (in Dutch: Ministerie van Landbouw, Natuur en Voedselkwaliteit)
ASR    Dutch Insurance Company for all insurances  LOC    Longitudinal course committee (in Dutch: Lijn Onderwijs Commissie)
AVMA   American Veterinary Medical Association  MDC    Master Development Committees
AVR    Advanced Veterinary Research  MGB Building    Marinus G. de Bruin Building
BKQ    Basic Teacher Qualification (in Dutch: BasisKwalificatie Onderwijs)  MIT    Master Implementation Team
BOC    Course committee (in Dutch: Blok Onderwijs Commissie)  MKB Nederland    Dutch Federation of Small and Medium-Sized Enterprises (in Dutch: Midden- en Klein Bedrijf Nederland)
BvG    Board of Studies  MMS    Multi Media Services
BRC    Biology of Reproductive Cells  MOOC    Master Course Committee (in Dutch: Master Onderwijs Commissie)
BSA    Binding Study Advice (in Dutch: Bindend Studie Advies)  MT    Management Team
BYOD   Bring your own device  NOVICE    Network of Veterinarians in Continuing Education
CA    Companion Animals  NVAO    Accreditation Organization of the Netherlands and Flanders (in Dutch: Nederlands-Vlaamse Accreditatie Organisatie)
CAO NU  Collective Labor Agreement for Dutch University’s (in Dutch: Collectieve Arbeidsovereenkomst Nederlandse Universiteiten)  NWO    Netherlands Organization for Scientific Research (in Dutch: Nederlandse Organisatie voor Wetenschappelijk Onderzoek)
CEUIT  Center of Excellence in University Teaching  OCW    Ministry of Education, Culture and Science (in Dutch: Ministerie van Onderwijs, Cultuur en Wetenschap)
CLARF  Central Laboratory Animal Research Facility  OSCE    Objective Structured Clinical Examination
COLIU  Centre for Education and Learning (in Dutch: Centrum voor Onderwijs en Leren Universiteit Utrecht)  OSZ    Educational and Student Affairs (in Dutch: Onderwijs- en Studentenzaken)
CMVA   Canadian Veterinary Medical Association  OVAM    Online Veterinary Anatomical Museum
CR    Clinical Reasoning  P&C    Planning & Control
DMPC   Dutch Molecular Pathology Center  PAGO    Vaccination and Periodic Employee Health Check (in Dutch: Periodiek Arbeidsgezondheidskundig Onderzoek)
DSS    Dutch Student Society (in Dutch: Diergeneeskundige Studenten Kring)  PB    Professional Behavior
DUO    Education Executive Agency (in Dutch: Dienst Uitvoering Onderwijs)  PDCA Cycle    Plan-Do-Check-Act Cycle
DVM    Doctor of Veterinary Medicine  PDP    Personal Development Plan
DWHC   Dutch Wildlife Health Center  PhD    Doctor of Philosophy
DWM    Animals in Science and Society (in Dutch: Dier in Wetenschap en Maatschappij)  QANU    Quality Assurance Netherlands Universities
E&A    Evaluation and Assessment  RATIA    Risk Assessment of Toxic and Immunomodulatory Agents
E&C    Emotion and Cognition  RSO    Research Support Office
E    Equine  SER    Self Evaluation Report
EAEVA  European Association of Establishments of Veterinary Education  SIB    Strategic Infection Biology
EBVS   European Board of Veterinary Specialization  SKO    Senior Teaching Qualification (in Dutch: Senior Kwalificatie Onderwijs)
EC(TS)  European Credit (Transfer System)  SPC    Study Program Committee
EEPI   IRAS Division Environmental Epidemiology  TKC    Quality Assessment Committee (in Dutch: Toets Kwaliteit Commissie)
EDO course  Extramural Studies (in Dutch: Extern Onderwijs)  TLM    Teaching Load Model
ERT    Emergency Response Team  TR    Tissue Repair
ES    Emergency Service  UC    University Council
ESP    Extramural Studies  UJC    University Job Qualification
Economische Zaken  Education & Student Affairs  UJK    University Clinic for Companion Animals (in Dutch: Universiteits Kliniek voor Gezelschapsdieren)
EU    European Union  UKP    University Clinical for Equine (in Dutch: Universiteits Kliniek voor Paard)
FA    Farm Animals  ULP    University Farm Animal Practice (in Dutch: Universitaire Landbouwhuisdieren Praktijk)
FC    Faculty Council  UMC Utrecht    University Medical Centre Utrecht
FVM    Faculty of Veterinary Medicine  UU    Utrecht University
PTE    Full Time Equivalent  VIEW    Veterinarians in Education Worldwide
GA    Group Assignment  VNO-NCW    Confederation of Netherlands Industry and Employers
GROS   Dangerous Goods Registration and Tracing  VPH    Veterinary Public Health
HP    Honors Program  VRU    Safety Region Utrecht (in Dutch: Veiligheids Regio Utrecht)
HRM    Human Resource Management  VSNU    Association of Universities The Netherlands (in Dutch: Vereniging van Nederlandse Universiteiten)
IRAS   Institute for Risk Assessment Sciences  VWS    Ministry of Health, Welfare and Sport (in Dutch: Ministerie van Volksgezondheid, Welzijn en Sport)
IVR    Institute of Veterinary Research  WHO    Veterinary Education Worldwide
JDIV building  Jeannette Donker-Voet Building  JIVP    Veterinary Education Worldwide
KNAW   Royal Netherlands Academy of Arts and Sciences (in Dutch: Koninklijke Nederlandse Academie van Wetenschappen)  KNAW    Koninklijke Nederlandse Maatschappij voor Diergeneeskunde
KNNvD   Royal Veterinary Association of The Netherlands (in Dutch: Koninklijke Nederlandse Maatschappij voor Diergeneeskunde)
LE    Learning Environment  MMS    Multi Media Services
LMS    Learning Management System  MOC    Master Course Committee (in Dutch: Master Onderwijs Commissie)

Appendix 0.2 Organizational Structure

Academie van Wetenschappen
Maatschappij voor Diergeneeskunde
Universiteit Utrecht
Arbeidsovereenkomst Nederlandse Universiteiten

In Dutch:
Bedrijf Nederland
Vlaamse Accreditatie Organisatie
voor Wetenschappelijk Onderzoek

In Dutch:
Collectieve Arbeidsovereenkomst Nederlandse Universiteiten

In Dutch:
Extern Onderwijs
 Bindend Studie Advies
 Diergeneeskundige Studenten Kring

In Dutch:
Economische Zaken
 Dienst Uitvoering Onderwijs
 Dier in Wetenschap en Maatschappij

In Dutch:
Centrum voor Onderwijs en Leren
Collectieve Arbeidsovereenkomst Nederlandse Universiteiten

In Dutch:
Koninklijke Nederlandse Maatschappij voor Gezelschapsdieren

In Dutch:
Collectieve Arbeidsovereenkomst Nederlandse Universiteiten

In Dutch:
Diergeneeskundige Studenten Kring

In Dutch:
Collectieve Arbeidsovereenkomst Nederlandse Universiteiten
APPENDICES STANDARD 0

APPENDIX A: SPECIFIC GOALS OF FVM

The Strategic Plan 2013-2017 of FVM is differentiated into four primary tasks: education, research, clinical services and valorization. The plan also pays attention to crucial supporting functions, and formulates goals for all of the departments up to the year 2017, as well as lines of action that will bring the faculty closer to realizing these goals. For each task the specific goals and lines of action are described below.

Education goals
The educational goals in the Strategic Plan are pertaining to (a) students, (b) lecturers and (c) educational organization and effectiveness.

A. Students: Expectations and images that aspiring students have of the study program and career perspectives of veterinarians do not always correspond to reality. FVM aims to admit students with a good understanding of the Veterinary Medicine study program and the future career field, and who are aware of the competencies that will be demanded of them as clinical veterinarians, researchers or other professions in the veterinary field. The curriculum must prepare students for what will be expected of veterinarians over the next few decades. The content of the education program develops apace with the profession and society at large. For example, more attention is being paid to issues such as ‘One Health, One Medicine’, academic professionalism and internationalization. Our graduates’ competency profiles will have to adapt to reflect these trends. Didactically, education follows the approved Veterinary Medicine Master’s Degree Education Philosophy, in which the student’s intrinsic motivation forms the foundation of efficient and effective learning organization and effectiveness.

Goals of FVM
1. Fair, effective and efficient admissions policy
   • Improving the provision of information to prospective students, with the goal that students begin their studies with a clear understanding of the goals and organization of the study program and the opportunities offered by the future career;
   • FVM reorients itself towards the mix of draw-based admission and selection based on regulations, as well as new insights regarding issues such as student matching and BaMa 3.0 policy of Utrecht University;
   • Encouraging the admission of Dutch and international students, preferably those with an interest in the veterinary field. The curriculum must prepare students for what will be expected of veterinarians over the next few decades. The content of the education program develops apace with the profession and society at large. For example, more attention is being paid to issues such as ‘One Health, One Medicine’, academic professionalism and internationalization. Our graduates’ competency profiles will have to adapt to reflect these trends. Didactically, education follows the approved Veterinary Medicine Master’s Degree Education Philosophy, in which the student’s intrinsic motivation forms the foundation of efficient and effective learning organization and effectiveness.

2. Content of the course curriculum must adapt to the demands that will be placed on the veterinarian of the future
   • Changing the Veterinary Medicine Graduation Requirements to meet the demands of the competency profile described in www.vetpro.nl;
   • Creating more space in the curriculum for education geared towards academic expertise, creativity, innovation and entrepreneurship;
   • Taking full advantage of external veterinary practices for the benefit of the first-year veterinary practical training. FVM intensifies the relationship with veterinary practices in order to optimize the professional education of veterinarians and to guarantee the quality of the study program;
   • Creating more space in the curriculum for personal development and deeper knowledge of the material, for example by offering 30-week minors in the Master’s phase;
   • FVM strengthens the HP in the Master’s phase and set up a new honors program in the Bachelor’s phase;
   • FVM’s education pays more attention to the ‘One Health’ theme. In 2015, the faculty will offer an English-language selective research Master in One Health and will introduce the One Health Major for all veterinary medicine students;
   • FVM internationalizes its education and the teaching environment through efforts such as strategic alliances with sister faculties, student and lecturer exchanges, joint PhD programs, mutual recognition of minor programs, admission of foreign students and strengthening international post-academic education.

3. Application of the Veterinary Medicine Master’s Program Education Philosophy
   • FVM implements and communicates measures regarding teaching and educational culture as formulated in the Veterinary Medicine Master’s Program Education Philosophy;
   • FVM performs a critical evaluation of the current educational forms and creates space for scientifically justified experiments with innovative teaching forms based on e-learning, and will adapt the educational philosophy as needed.

B. Professional Teachers: Education is provided by committed, professional teachers who consider themselves the ‘proprietor’ of the education provided. A study program is only as good as its teachers; their attitude and expertise are the keys to effective education. Teachers can challenge students, inspire them and call on them to utilize their talents to the full. Personal contact is therefore a vital aspect of education, and there must be high expectations of FVM’s teachers’ quality and competencies. Teachers must be given time and space to continue to develop themselves. A documented evaluation of teacher quality will be an explicit element of the annual Evaluation and Assessment interview. Specific education goals related to teachers are:

1. There is more attention to the quality and development of teachers
   • Developing a broader quality system for teachers, explicitly including the results in their evaluations and career development;
   • Developing policy and creating space for teachers to explore ‘lifelong learning’ in the areas of teaching skills and techniques;
   • Increasing personal contact between students and teacher by assigning fewer different teachers to each course;
   • Investing to create teaching teams that can be assigned to a broad array of departments and disciplines.

C. Educational organization: Efficiency and effectiveness are important preconditions in the organization and execution of education. These aspects will be given more attention over the next few years. Some issues to be addressed include: didactic innovation, critical utilization of facilities and resources and strategic cooperation at the national, international and university levels. A greater utilization of students for clinical services and education also contributes to better education as well as cost reduction. Where possible, innovations and interventions should be justified scientifically. Effectiveness of education improves by providing more education to paying external parties. This makes needs of the market more of a driving force in education and strengthens the marketing of the curriculum, both in The Netherlands and abroad.

The specific education goals related to educational organization are:

1. To invest in more efficient teaching methods and educational organization
   • Investing in the development and implementation of innovative ICT tools (E-learning, Elevate) and digital teaching methods (distant learning, blended learning (online and contact education), learning communities (Novice);
   • Investing in educational collaboration with strategic international partners, for example through combining capacity in ‘small’ fields of expertise and through exchanging educational innovations;
   • Investing in research to improve the quality of veterinary education, when possible in close cooperation with partners within the university and other parties;

2. To improve student participation in education and clinical services
   • FVM utilizes more student contributions on behalf of the faculty’s education, clinical services and educational organization;

3. To promote effectiveness in educational management
   • Developing a transparent and well-supported system for the allocation of educational resources based on a curriculum database (Teaching Load Model, TLM);
   • Improving the effectiveness of educational management information and its use by management and employees;
   • Evaluating which educational facilities are necessary in order to realize the graduation requirements and application of the education philosophy.

4. Generating income through external education
   • FVM invests in further development of a profitable external course and training curriculum, such as English-language Master’s programs in Veterinary Science and One Health (starting in 2015), and offers coherent continuing education programs for graduates, as well as other academic and post-academic education modules;
   • FVM invests in international and national marketing for its external course offerings through external communications.
Research goals

1. To strengthen the focus in research
   For the 2012-2014 mid-term review, FVM has adjusted the composition and UU budgets for the programs and sub-programs, in part based on the conclusions of the SER 2006-2011, and recommendations of the international QANU inspection committee;
   - Increasing the scale and coherence of research by combining relatively small, related research groups and researchers and by correcting their course as necessary;

2. To maintain or increase the quality of research
   - FVM regularly recalibrates the general research goals and strategies of individual programs, sub-programs and groups in order to maintain quality, scale, competitiveness and future success, and it will implement improvements as necessary;
   - FVM ensures that researchers continue to have access to enabling technologies and laboratory animal facilities.

3. To promote quality and staff performance
   - Recruiting research staff members via an open international competition. The permanent research formation is reserved for individuals who have successfully completed a tenure track at UU or elsewhere;
   - Promoting differentiation of tasks: employees whose main duties include research (research staff) spend the majority of their working hours on research (conducting research, writing articles, maintaining international networks, supervising students, acquiring funding, valorization, research management).
   - Part-time researchers whose main duties are education or clinical services conduct research under supervision of research staff and do not have their own UU-financed lines of research;
   - Encouraging cooperation, but limited structural imbedding of researchers and group leaders in more than one research program;
   - Evaluating research duties of the group leader and staff based on their performance standard agreements;
   - Creating opportunities for employees to earn temporary allowances for long-term exceptional performance.

4. Increased external acquisition and personal subsidies
   - Since 2013, FVM offers administrative support for the non-academic sections of applications for European subsidies, personal subsidies and in business development, if applicable in cooperation with other Life Sciences faculties;
   - In 2013, FVM has set up a system for scouting top talent early, providing active supervision and mentors to candidates with the potential for receiving personal subsidy grants;
   - FVM aims to increase the number of received personal subsidies (average 1-2 per year);
   - Making agreements with top talent regarding career perspectives, based in part on projected future developments and sub-programs, in part based on the conclusions of the SER 2006-2011, and recommendations of the international QANU inspection committee;

5. To promote internationalization of research
   - Initiating structural collaboration with European partners to prepare calls for joint research based on the quality and added value of such collaboration;
   - Supporting foreign researchers in obtaining work permits, looking for housing, language courses, etc.
   - To improve the quality of management, including research management
   - Promoting development of demand-driven ICT facilities that connect academic research and clinical services;
   - Promoting the development of project leader friendly project management tools.

6. To strengthen marketing/communications regarding research
   - FVM improves the visibility of the research programs, research groups and individual researchers among stakeholders in a demand-driven, planned manner;
   - FVM initiates, advises, supports researcher participation in society and administers interactions between researchers and the media.

Clinical services goals

1. Choose priorities in the field of referral and specialist veterinary care
   - Referral veterinary care is possible thanks to the presence of specialists from a number of disciplines, a unique infrastructure of the clinics combined with fundamental patient-oriented research. FVM’s care also serves as a foundation for development and implementation of innovation. A clinic with referral and specialist care provides excellent opportunities for clinical education. Referral care will increasingly have to be paid for from the revenues of clinical services and other external funding sources. A healthy long-term perspective will require a good national and international market position for referral care. The selection of referral themes ('mountain peaks') will contribute to the realization of these goals. Priorities provide added value in specialist care and enable growth of volume and increased effectiveness. Most of these priorities will have ties to the strategic themes of Utrecht Life Sciences and/or UMCU.
   - UKG implements the priorities cardiology, neurology/neurochemistry and oncology;
   - UKP implements the priorities advanced joint and tendon treatments and advanced fertility assessment and fertilization techniques.

2. Make choices among specialist study programs and the specialisms present at the faculty
   - At the moment, FVM houses all 23 veterinary specialisms recognized by EBVS. Other specialisms may eventually be recognized by European agencies. In order to ensure financially healthy business operations and excellent clinical services available 24/7, FVM may have to reconsider the number of specialist study programs it supports.
   - FVM decides which minor specialisms and specialist study programs will be kept and which ones should be organized in cooperation with national or international partners, in consultation with those partners;
   - FVM develops a suitable and structural budgeting structure for its specialist study programs;
   - Optimization process for the specialist study programs has been completed and the faculty is developing a contract arrangement for specialists in training.

3. Efficiency, effectiveness and the expansion of clinical services
   - Improving, developing and implementation of a management information system at the level of organizational units of the clinical departments;
   - The clinics, their units and diagnostic laboratories redefine their core activities based on the strategy and effectiveness;
   - Increasing effectiveness by utilizing at least 65% of the infrastructure;
   - Reorientation towards clinical services for farm animals in relation to education and research, with all available facilities;
   - Expanding and intensifying the relationship as stakeholder in ULP for the benefit of both organizations;

4. Developing and implementing an integrated quality policy
   - UKG and UKP develop a quality control system with a norm framework, benchmarks and indicators for factors such as results and quality of treatments, patient safety, customer satisfaction, efficiency, logistics and effectiveness.

5. Cooperation with referring veterinarians and veterinary specialists
   - In addition to referral care, UKG and UKP offer regular specialist veterinary care. This care is important for the education of future veterinarians. The Middle Netherlands Emergency Clinic (part of UKG) also offers general emergency care for companion animals in the central region in The Netherlands. Both clinics value their relationships with referring veterinarians and will intensify their cooperation in the future. Based on the customer satisfaction survey 2012, the improvements will focus mainly on the following: a) Providing information to referring veterinarians and animal owners; b) Easing access to specialist care at UKG and UKP;
   - c) Better accessibility of UKG and UKP for referring veterinarians; d) More information exchange between UKG, UKP and referring veterinarians.
   - The clinics implement the recommendations of the customer satisfaction surveys;
   - The clinics implement a permanent clinical services customer satisfaction monitor;
   - The clinics integrate a clinical services communications plan as part of their annual policy cycle. A website geared towards the clinics’ strategic position and attracting patients is part of this plan, which will also pay attention to social media.

6. Founding and expanding Expertise Centers
   - FVM founded a Companion Animals Oncology Centre. Thanks to progress in and cooperation between disciplines such as surgery, internal medicine, diagnostic imaging, radiotherapy and pathology, the treatment programs for animals with cancer have improved dramatically. Thanks to the presence of top self-study report 2014 – faculty of veterinary medicine
3. Reinforce external promotion and national and international market position: promote circulation of knowledge valued in a broader context and endeavor to reinforce the faculty's reputation and visibility in the international academic community by working on research requests from the private market, with special attention to setting up and conducting translational research, including clinical trials;

4. Increase effectiveness and net yield from valorization

A more efficient, market-oriented clinical services will require better support in the fields of management information, finance, logistics and ICT.

1. Improving the organization and operations of the clinical departments

A more efficient, market-oriented clinical services will require better support in the fields of management information, finance, logistics and ICT.

a) Operations

A more efficient, market-oriented clinical services will require better support in the fields of management information, finance, logistics and ICT.

1. Improving the organization and operations of the clinical departments

A more efficient, market-oriented clinical services will require better support in the fields of management information, finance, logistics and ICT.

2. Improving ICT infrastructure

ICT support: FVM ensures that the ICT Service Centre provides proper support of systems, programs and services for employees and students.

Intranet: FVM improves intranet in order to keep employees better informed and to provide access to operational and quality control systems;

Electronic archiving: FVM promotes a more systematic documentation and archiving of documents via the department offices;
• Replacement of Vetware: FVM guarantees the continuity of Vetware in the run-up to the replacement of the software no later than 2018;
• Electronic quality system: FVM appoints a work group to inventory ICT needs for clinical services, such as the drafting, updating and publishing of treatment protocols, including the implementation of the laboratory animal testing policy.

3. Professionalization of the quality control cycle
• Operational system: FVM implements a system (including PCDA cycle) for standard operating procedures. The system is maintained and administered by a quality control assistant;
• Laboratory animal policy: FVM implements a PDCA cycle for the laboratory animal policy. A quality control system updates the quality handbook;
• Clinical services: FVM actively contributes to the Quality Register for Veterinarians and the necessary national guidelines for the benefit of transparency and the quality of care. The quality systems developed by the clinics (see clinic sources) is supported by a quality control assistant.

4. Cut costs and increase clinic profitability
• Assessing profitability of every organizational unit. A decision will be made regarding the continuation of unprofitable organizational units based on strategic, financial, educational, research and clinical services considerations no later than 2014;
• FVM completes current projects for cutting costs and extend them as necessary in order to save on supporting process expenses. The goals are: 2.5% more revenue from the invoicing process; 2.5% more revenue from the rate structure; 5.0% reduction in purchasing and standardization of clinical services and research; and an improvement in medicine registrations (prevention of invoice leakage).

5. Reducing overhead as a percentage of revenues
• Setting a ceiling on accommodations expenses in 2017 by cutting square meters by 4% over 2013 and through a better utilization of existing buildings. FVM also aims for a strategic and expeditious realization of a portfolio of new construction projects in order to accelerate the reduction of the net expenses;
• Cutting other gross expenses (Administrative Service Centre and Facility Service Center) by 10% between 2013 and 2017, with the exception of ICT. The benchmark is an analysis of the university center product-service catalogues and an inventory of which services the faculty truly needs;
• Starting in 2017, FVM will set a ceiling on the contribution to the University Library for the acquisition of information sources and for restoration and binding expenses. So far, this contribution has increased by 7% each year;
• Since 2013, the educational organization (operational, policy and research) is organized transparently. The relationship between the Chair Quality Improvement of Veterinary Education and OSZ will be clarified externally, and the duties, work, roles and responsibilities are made more transparent for the faculty community;
• Since 2014, the operational teams of the pre-clinical and clinical departments are harmonized. Operational managers are concentrated in logical units. Supporting departments are integrated further and housed together whenever it is logical to do so;
• FVM will set aside an annual amount of € 750,000 to cover social benefits expenses. In 2017, these expenses decreased by 20% thanks to increased cost-consciousness in departments and bureau sections;
• FVM coordinates major investments (>€ 100,000) in the field of equipment for supporting positions, and brings the management of expensive equipment now performed by the Central Research Facility to faculty level. This option provides more opportunities for sharing the investments with other Life Sciences faculties and for the acquisition of external funding. A faculty-wide long-term replacement plan will be drawn up.

6. Reinforcing internal and external communication
• Based on the strategic plan, FVM has drawn up a results-oriented faculty communications and marketing plan in 2013. The goals as formulated for the four primary tasks of education, research, clinical services and valorization are leading for this strategic plan;
• The faculty reorients itself on the tasks, finances and management of communications resources needed to implement FVM’s communication strategy, in cooperation with the departments and Utrecht University Communications & Marketing management team.

b) Human resource management
1. Optimization and making flexible of staff deployment
• Implementing task differentiation for the academic personnel by 2017;
• Implementing a policy of ‘right task at the right level’ in the clinics by 2017;
• Implementing a forward-looking personnel policy for all parts of the organization by 2015;
• Implementation of concrete budgets and products for training and career development in the framework of sustainable employability.

2. Strengthen and develop leadership
• Continuing to provide employees with instruments to strengthen their management and leadership competencies;
• FVM is involved in a broader rethinking of the future leadership of the university.

3. Invest in young (scientific) top talent
• Continuing and intensifying stimulation of young scientific top talent by offering support in building up their CV’s, application for personal grants and/or the strengthening of their international networks and reputation;
• Stimulating management and business talent through tailor-made agreements or by participation in UU development programs.

4. Promote quality and performance of the teaching and research staff
• See points in the goals ‘Education’ and ‘Research’.

5. Facilitate valorization through ancillary activities
• Maintaining policy (and facilitating compliance with it through transparent procedures, guidelines and model contracts) on the performance of work-related ancillary activities.

6. Internationalization
• HRM has knowledge of current laws and regulations to accommodate the appointment of foreign employees and serves as the first point of contact for both the internal organization and the employee or potential employee with an international background;
• A permanent appointment can only be secured after relevant external and/or international experience.
Main requirements for Stage 1 evaluation

1. Preparation of Self-Evaluation Report (SER), which takes approximately one year;
2. Examination of SER is made by a team of experts in Basic subjects and sciences, Clinical Sciences subjects (practitioner), Animal Production, Food Hygiene and a Senior Student. Comments and queries are sent prior to the visit to EAEVE’s Coordinator (rapporteur), who accompanies the team on the visit. One experienced expert is named chairperson;
3. Evaluation visit of the establishment by the team, usually taking five days, in which the queries raised from SER can be resolved;
4. Generation of Draft Report, which is agreed by the complete team, which is presented to the dean and colleagues for factual correction;
5. Final Draft Report is presented by the chairperson to the ECOVE, which makes the decision on Approval, Conditional Approval or non-Approval. Approved establishments are entered onto the official list of Approved Establishments;
6. Final Report is sent to the establishment and the Executive Summary is published on the EAEVE Website.

Main requirements for Stage 2 evaluation

1. Only approved schools can apply for Stage 2 evaluation, however combined (Stage 1 and 2) evaluation is also possible;
2. Preparation of SER;
3. Examination of the SER is made by a team of two experts of quality assurance and quality management together with a coordinator;
4. Evaluation visit of the establishment lasts for five days;
5. Generation of Draft Report, which is agreed by the complete team, which is presented to the dean and colleagues for factual correction;
6. Final Draft Report is presented by the chairperson to ECOVE, which makes the decision on Accreditation, Conditional Accreditation or non-Accreditation. Accredited establishments are entered onto the official list of Approved and Accredited Establishments;
7. Final Report is sent to the establishment and the Executive Summary is published on the EAEVE Website.

Appendix 1.B.: Tasks and responsibilities related to education

Educational duties and responsibilities Faculty of Veterinary Medicine
Approved in the Faculty Board meeting of: 7 January 2014

Dean (Professor Jos van Putten, ad interim)
- To draw up the annual Education and Examination Regulations;
- Is charged with supervising the implementation of the education and examination regulations, as well as regularly reporting on the implementation to the Executive Board;
- To draw up Examination Committees and appoints the members of these committees;
- Appoints a professor as educational director;
- Organizes a board of studies in order to support the educational director and appoints the members of this board;
- Appoints the members of Study Program Committee;
- Delegates the responsibility for the content and quality of education, including supervision, testing, lecturers as well as the implementation and support to the educational director;
- Delegation of the responsibility for determining the necessary application of staffing and resources for education to the educational director.

Educational Director¹ (Professor Wim Kremers)
- Is charged with coordinating the implementation of the Education and Examination Regulations.
- Has a mandate from the dean making him/her responsible for the educational curriculum and testing quality and quality control of the education provided by FVM (coordinate horizontally from the educational director to the course and program coordinators);
- To determine the required application (distribution, quantity and quality) of staffing and resources in education (coordination vertically from the educational director (via the education portfolio holders) to the department Management Team (MT));
- Education policy and the implementation of education policy;
- Is responsible that education is provided by qualified teachers who are able to improve and innovate education they provide (coordination vertically from the educational director (via the education portfolio holders) to the department MT);
- To report the dean, and to the Examination Committee regarding the quality of examinations.

Department education portfolio holder
- Point of contact for education-related issues within the department;
- Organizing education within the department based on the staffing and resources provided by the department MT (vertical line);
- Advisory member of the department board (MT).

Course and program coordinator (and BOC, LOC or MOC)
- Organizing, implementing and testing the education of the relevant course (in the horizontal line);
- Formal examiner for his or her course (appointed by the Examination Committee);
- Composition of the test; quality of the test and test questions; testing; determining the results of the test and communicating the results to OSZ; announcing the results of the test; organizing review of the test;
- Is responsible for the quality and quality control of his or her course (with support from the staff of OSZ);
- To report the educational director regarding the quality and quality control of the education and testing provided.

Professor
- Is responsible for developing the content of the education in his or her field.

¹ Within FVM, the educational director is also charged with the duties of the ‘Vice-Dean of Education’. The title of ‘Vice-Dean of Education’ is therefore not used within the Faculty of Veterinary Medicine. For the exact mandate regulations for the Educational Director, please refer to the faculty regulations and mandate regulations (published on the intranet and the website).
Boards, committees and consultative bodies in education

Study Program Committee Undergraduate School and Study Program Committee Veterinary School

- The Study Program Committee (SPC) consists of: eight staff representatives and eight student representatives, of which four students from the Undergraduate School and four students from the Veterinary School;
- Student representatives are chosen on an annual basis; the staff representatives every two years;
- Chair and members of SPC are appointed by the dean.

Meeting frequency: SPC meets once every two months on the third Thursday of the even-numbered months.

Duties and responsibilities:
- Discusses the results of the education quality control (PDCA cycle) and advises the educational director.
- Advises on the Education and Examination Regulations;
- Evaluates implementation of the Education and Examination Regulations on an annual basis;
- Advises the educational director, the Study Program Board and the dean regarding all issues pertaining to education, when asked and on its own initiative.

Status: Student and employee participation/advisory; not a decision-making body.

Faculty Council (regarding education)

- The Faculty Council consists of eight staff representatives and eight student representatives. Student representatives are the same as those for the SPS's;
- Student representatives are chosen on an annual basis; the staff representatives every two years;
- Chair and members of SPC are appointed by the dean.

Meeting frequency: every two months on the third Thursday of the uneven-numbered months.

Duties and responsibilities regarding education:
- Right of consent to the Education and Examination Regulations. The Faculty Council follows the recommendations of SPC;
- Right of consultation on the care for faculty student facilities.

Status: Formal participatory body towards the dean.

Examination Committee

The Examination Committee is appointed by the dean and formally consists of the chairperson and two members. The Examination Committee is supported by an administrative secretary;

- Bachelor's Examination Committee: Professor Henk Haaasman (Chair), Arie van Nes DVM PhD, Professor Herman Hazewinkel, Professor Jan van Tartwijk;
- Master's Examination Committee: Professor. Ab Barneveld (Chair), Gerrit Hoojoo DVM PhD, Professor Michael Boevé, Professor Jan van Tartwijk, Trudi Miltenburg DVM PhD, C.A. Teusink MSc.

Duties and responsibilities:
- Independent 'supervisory council' evaluates whether the course learning goals have been met; monitors the final graduation standards; monitors the quality and quality control of the exams and the exam program and determines whether the student has successfully passed the exam; (the educational director provides the necessary information on exam programs [from the education quality control cycle, etc.]);
- Issuing diplomas; approving 'free' study programs; granting exemptions; processing fraud reports; issuing binding study recommendations at the end of the Bachelor's year; granting extensions for automatic graduation; processing other individual requests of a miscellaneous nature; approving the Examination Committee Regulations.

Status: Independent committee (anchored in legislation), makes own policy, may advise dean and/or education director when asked or on own initiative (compare 'Supervisory Council for Exams')

Quality Assessment Committee (TKC)

TKC is a committee appointed by the educational director to conduct tasks at the request of the Examination Committee (based on agreements of the Examination Committee and educational director).

- Harold Bok DVM PhD (Chair), Robert Favier DVM PhD, Lisa Veneberg DVM PhD, Harold Brommer-DVM PhD, Anneke Wijnalda MSc.

Duties and responsibilities:
- Recommendation on quality of tests at the request of the educational director and the examination committees;
- Recommending course and program coordinators/examiners on improvements to the quality of a course's tests at their request;
- Recommending the educational director and the examination committees on policy decisions to be made regarding the quality of testing at FVM;
- To assure the promotion of its own expertise and shares knowledge and insights regarding testing with all parties concerned: teachers, educational director, examination committees and course and program coordinators, not a decision-making or formal body.

Educational portfolio holders meeting

Educational portfolio holders meeting is a meeting with the educational director and the educational portfolio holders from the departments to discuss the program responsibility and the application of staffing and resources (vertical line).

Current composition:
- Professor L.J. Hellebrekers (CA), Robin van den Boom DVM PhD (E), Herman Egberink DVM PhD (I&I), Professor Arjan Stegeman (FA), Len Lipman PhD (IRAS), Pim Rooymans MSc (DVM), Professor Marjanne Everts (PB), Professor Lodewijk Tielens (B&B).

Duties and responsibilities: Coordination between the educational director and educational portfolio holders.

Status: Consultative/advisory; no formal status; no decision-making.

Course and program coordinators meeting

This meeting is an informal meeting of the educational director with all course and program coordinators (followed by a reception).

Current composition: All course and program coordinators

Meeting frequency: 1-2x per year.

Duties and responsibilities: Informal exchange between the educational director and the course and program coordinators regarding topics in horizontal line [contents/program]. These can include quality control, organizational policy, testing and evaluation and integration and coherence of the individual courses and the educational curriculum as a whole, etc.

Status: Informal meeting.

For the exact provisions pertaining to the Study Program Committee, see the Faculty Regulations.


A detailed description of the duties and responsibilities of the Examination Committee is available from the chairpersons of the Examination Committees.
Bachelor’s core team

The Bachelor’s core team is a meeting of the ‘key individuals’ to coordinate and prepare policy for the Bachelor’s program together with the educational director.

**Current composition:**
- Professor Wim Kremer, Chair, Educational Director;
- Robert Favier DVM PhD, Chair, MOC CA;
- Caro Bliekendaal MSc, Head of OSZ;
- Onno van der Veen, Multimedia/image bank;
- J.A. Duijnstee, Student member.

**Meeting frequency:** To be determined by the committee

**Duties and responsibilities:**
- Advising the educational director and the course and program coordinators regarding coherence, layout and management & organization of the study and testing facilities at FVM;
- Structure and organization of Blackboard with e-learning assignments; structure and design of the image banks (maintenance, teaching, etc.), study landscape and self-study areas; skills lab, station testing, image banks, digital microscopy, etc.;
- Coordinating the preparation of policy and advising the educational director and support to students and teachers;
- Tying OSZ’s work to that of the rest of the educational organization.

Status: No formal status.

Management Team OSZ (MT OSZ)

MT OSZ is appointed by the dean of FVM.

**Current composition:**
- Wim Dirksen PhD, Faculty General Director;
- Professor Wim Kremer, Educational Director;
- Caro Bliekendaal MSc, Head of OSZ;
- Jan Haarhuis MSc, Education expert;
- Frank Duinker LLM (HR advisor).

**Meeting frequency:** Bi-weekly

**Duties and responsibilities:**
- Financial and personal management of OSZ;
- Maintaining the quality of the support for the preparation and execution of FVM’s education, education policy and support to students and teachers;
- Tying OSZ’s work to that of the rest of the educational organization.

Status: Decision-making regarding HR, management and finances of OSZ.

A detailed description of the duties and responsibilities of the MT ESA is available from the chair persons of the Examination Committees.

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Master’s core team

The Master’s core team is a meeting of the ‘key individuals’ to coordinate and prepare policy for the Master’s program together with the educational director.

**Current composition:**
- Professor Wim Kremer, Chairperson, Educational Director;
- Rob Swidels DVM PhD, Chair Bachelor’s Line Committee;
- Professor Mirjam Nielen, for ‘Academic Thought and Action’;
- Nicole Mastenbroek PhD, for ‘Professional and Personal Development’;
- Harold Bo DVM PhD, Chair Teaching Quality Assessment;
- Representative of OSZ (vacancy);
- Gineke Gloumemans, student Veterinary School.

**Meeting frequency:** As often as needed

**Duties and responsibilities:** Coordination, preparation of policy and advising the educational director and educational organization regarding supervision, content, integration, layout and organization of the Bachelor’s program in the broadest sense.

Status: Informal meeting.

Study and Testing Facilities Committee

This committee is a merger of the existing committees that work on using or improving study and learning facilities. The goal of combining these committees is to give momentum to a more coherent vision on the design of the faculty’s various study and testing facilities (study landscape, skills lab, station testing, image banks, digital microscopy, etc.).

**Current composition:**
- Claudia Wolschrijn DVM PhD, PB; Chair;
- Herman Jonker DVM PhD, Farm Animal Health and communication with the ‘station chiefs’;
- Vacancy for Companion Animals;
- Replacement for Mathijs Theelen MSc, Equine;
- Ronald Zwart, Blackboard, OSZ;
- Onno van der Veen, Multimedia/image bank;
- Anneke Wijnalda MSc, for ‘Professional and Personal Development’.

**Meeting frequency:** Informal meeting.

**Duties and responsibilities:**
- Informal meeting.
- No formal status.
- Coordinating the preparation of policy and advising the educational director and support to students and teachers.
- Tying OSZ’s work to that of the rest of the educational organization.

Status: Decision-making regarding HR, management and finances of OSZ.

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Self-Study Report 2014 – Faculty of Veterinary Medicine
### APPENDIXES STANDARD 3

**Appendix 3.1.: DESCRIPTION OF FACILITIES, TOTAL SQUARE METERS, NUMBER OF ROOMS AND THE SITUATION OF THE PHYSICAL FACILITIES**

<table>
<thead>
<tr>
<th>Facilities</th>
<th>Sub facilities</th>
<th>Total (m²)</th>
<th>Number</th>
<th>Situated in building</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Instructional environment</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Seminar rooms</strong></td>
<td></td>
<td>1979</td>
<td>18</td>
<td>Heineich Jakob Building, Jeanette Donker-Voet Building, Andreas C. Schimmel Building, Nieuw Gildestein</td>
</tr>
<tr>
<td><strong>Practical rooms</strong></td>
<td></td>
<td>3183</td>
<td>53</td>
<td>Heineich Jakob Building, Jeanette Donker-Voet Building, Martinus G. de Bruin Building, Willem C. Schimmel Building, Andreas C. Schimmel Building, Nieuw Gildestein, De Tolakker</td>
</tr>
<tr>
<td><strong>Learning environment</strong></td>
<td></td>
<td>1181</td>
<td>40</td>
<td>Heineich Jakob Building, Jeanette Donker-Voet Building, Martinus G. de Bruin Building, Willem C. Schimmel Building, Andreas C. Schimmel Building, Nieuw Gildestein, De Tolakker</td>
</tr>
<tr>
<td><strong>Lecture Halls</strong></td>
<td></td>
<td>770</td>
<td>4</td>
<td>Heineich Jakob Building, Willem C. Schimmel Building, Andreas C. Schimmel Building, Nieuw Gildestein</td>
</tr>
<tr>
<td><strong>Clinical services (including Radiotherapy center)</strong></td>
<td>6495</td>
<td>184</td>
<td></td>
<td>Heineich Jakob Building, Martinus G. de Bruin Building, Willem C. Schimmel Building, Andreas C. Schimmel Building, Nieuw Gildestein, De Tolakker</td>
</tr>
<tr>
<td><strong>Pens and stalls</strong></td>
<td></td>
<td>11698</td>
<td>440</td>
<td>Heineich Jakob Building, Martinus G. de Bruin Building, Willem C. Schimmel Building, Andreas C. Schimmel Building, Nieuw Gildestein, De Tolakker</td>
</tr>
<tr>
<td><strong>Pharmacy</strong></td>
<td></td>
<td>360</td>
<td>1</td>
<td>Jeanette Donker-Voet Building</td>
</tr>
<tr>
<td><strong>Pharmacy compound +/- GL lab</strong></td>
<td></td>
<td>270</td>
<td>1</td>
<td>Jeanette Donker-Voet Building</td>
</tr>
<tr>
<td><strong>Pharmacy storage</strong></td>
<td></td>
<td>90</td>
<td>2</td>
<td>Jeanette Donker-Voet Building</td>
</tr>
<tr>
<td><strong>Pharmacy Dependences</strong></td>
<td></td>
<td>111</td>
<td>11</td>
<td>Heineich Jakob Building (? incl. 1 at the first opinion emergency service), Willem C. Schimmel Building(4)</td>
</tr>
<tr>
<td><strong>Diagnostic imaging</strong></td>
<td></td>
<td>371</td>
<td></td>
<td>Heineich Jakob Building</td>
</tr>
<tr>
<td><strong>Isolation facilities</strong></td>
<td></td>
<td>305</td>
<td></td>
<td>Willem C. Schimmel Building, Heineich Jakob Building</td>
</tr>
<tr>
<td><strong>Intensive/critical care</strong></td>
<td></td>
<td>335</td>
<td></td>
<td>Heineich Jakob Building (incl. EPA), Willem C. Schimmel Building, Andreas C. Schimmel Building, Nieuw Gildestein, De Tolakker</td>
</tr>
<tr>
<td><strong>Research labs</strong></td>
<td>Research labs</td>
<td>8458</td>
<td>329</td>
<td>Heineich Jakob Building, Jeanette Donker-Voet Building, Martinus G. de Bruin Building, Willem C. Schimmel Building, Andreas C. Schimmel Building, Nieuw Gildestein, De Tolakker</td>
</tr>
<tr>
<td><strong>Office</strong></td>
<td></td>
<td>10173</td>
<td>529</td>
<td>Heineich Jakob Building, Martinus G. de Bruin Building, Willem C. Schimmel Building, Andreas C. Schimmel Building, Nieuw Gildestein, De Tolakker</td>
</tr>
<tr>
<td><strong>Meeting and Seminar</strong></td>
<td></td>
<td>806</td>
<td>24</td>
<td>Heineich Jakob Building, Jeanette Donker-Voet Building, Martinus G. de Bruin Building, Willem C. Schimmel Building, Andreas C. Schimmel Building, Nieuw Gildestein, De Tolakker</td>
</tr>
<tr>
<td><strong>Students</strong></td>
<td></td>
<td>384</td>
<td>17</td>
<td>Heineich Jakob Building, Jeanette Donker-Voet Building, Martinus G. de Bruin Building, Willem C. Schimmel Building, Andreas C. Schimmel Building, Nieuw Gildestein, De Tolakker</td>
</tr>
<tr>
<td><strong>Canteen</strong></td>
<td></td>
<td>966</td>
<td>2</td>
<td>Andreas C. Schimmel Building, Nieuw Gildestein</td>
</tr>
<tr>
<td><strong>Storage</strong></td>
<td>Storage</td>
<td>8265</td>
<td>556</td>
<td>Heineich Jakob Building, Jeanette Donker-Voet Building, Martinus G. de Bruin Building, Willem C. Schimmel Building, Andreas C. Schimmel Building, Nieuw Gildestein, De Tolakker</td>
</tr>
<tr>
<td><strong>Technical Shop</strong></td>
<td>Technical Shop</td>
<td>1088</td>
<td></td>
<td>Heineich Jakob Building, Jeanette Donker-Voet Building, Martinus G. de Bruin Building, Willem C. Schimmel Building, Andreas C. Schimmel Building, Nieuw Gildestein, De Tolakker</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td>51931 m²</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### APPENDIXES STANDARD 6

**Appendix 6.A: VETERINARY STUDENT CLUBS AND ORGANIZATIONS**

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Website</th>
</tr>
</thead>
<tbody>
<tr>
<td>Archaopteryx</td>
<td>Archaeoptery is a student society concerning exotic animals and birds</td>
<td><a href="http://www.archaopterys-online.nl">www.archaopterys-online.nl</a></td>
</tr>
<tr>
<td>Collegium Musican Veterinarium Synxis</td>
<td>Veterinary students orchestra</td>
<td><a href="http://www.collegiumv.com">www.collegiumv.com</a></td>
</tr>
<tr>
<td>DAP (Dag van het Aangespannen Paard)</td>
<td>Main event in The Netherlands with hitched wagons, funded and organized by EU veterinary students</td>
<td><a href="http://www.dagvanhetangespannenpaard.nl">www.dagvanhetangespannenpaard.nl</a></td>
</tr>
<tr>
<td>DIO Veterinary Medicine in Development Cooperation</td>
<td>DIO advises developing countries about animal health and cattle raising, and is a member of Vétérinaires Sans Frontières Europe</td>
<td><a href="http://www.dio.nl">www.dio.nl</a></td>
</tr>
<tr>
<td>DSK the Veterinary Students Society (Diergeneeskundige Studentenkern)</td>
<td>Aims of DSK: to create solidarity and to promote the veterinary students’ interests. Subcommittees: Almanac Committee, Cultural Committee, Auditing Committee, Library Committee, International Veterinary Student Association (IVSA) Sports Committee</td>
<td><a href="http://www.dskonline.nl">www.dskonline.nl</a></td>
</tr>
<tr>
<td>De Gouden Trachnea</td>
<td>Veterinary Students’ Choir</td>
<td><a href="http://www.degoudentrachnea.nl">www.degoudentrachnea.nl</a></td>
</tr>
<tr>
<td>VSK Duim in ’t Gat</td>
<td>Veterinary Students Bowling Club</td>
<td><a href="http://www.vskdugm.nl">www.vskdugm.nl</a></td>
</tr>
<tr>
<td>Veterinair Sigran Genootschap</td>
<td>Veterinary Male Students Cigar Society</td>
<td><a href="http://www.vsgc.org">www.vsgc.org</a></td>
</tr>
<tr>
<td>VSG Prima Vera</td>
<td>Veterinary Female Students Society</td>
<td><a href="http://www.vsgp.org">www.vsgp.org</a></td>
</tr>
<tr>
<td>Veterinary Horse Riding De Solleuwen</td>
<td>De Solleuwen offers students/employees of FVM lessons in horsecare riding, and also takes care of the faculty’s horses used for education</td>
<td><a href="http://www.solleuwen.nl">www.solleuwen.nl</a></td>
</tr>
<tr>
<td>VIBTer</td>
<td>VIBTer is the veterinary equestrians society.</td>
<td><a href="http://www.vibter.nl">www.vibter.nl</a></td>
</tr>
<tr>
<td>Veulenbrigade</td>
<td>Veterinary Student Feude Team takes care of motherless and weak foals</td>
<td><a href="http://www.vstfeude.nl">www.vstfeude.nl</a></td>
</tr>
<tr>
<td>VeeFokkers Club “De Ulthof”</td>
<td>Veterinary Cattle Breeders Students organize events like excursions, symposia linked to the farm animal sector</td>
<td><a href="http://www.veefokkers.com">www.veefokkers.com</a></td>
</tr>
<tr>
<td>Hygieia</td>
<td>Hygieia informs veterinary and medical students about developments and job opportunities within VPH</td>
<td><a href="http://www.hygieia.nl">www.hygieia.nl</a></td>
</tr>
<tr>
<td>Veterinary Residency Hospitals Team</td>
<td>Veterinary Rescue Dogs Team</td>
<td><a href="http://www.vrht.nl">www.vrht.nl</a></td>
</tr>
<tr>
<td>Students Council (in Dutch: Studentenaad)</td>
<td>Students Council represents the interests of vet. students in the field of education, study facilities and other affairs dealt with FVM. Student Council is the umbrella organization for all student representatives in FVM’s political body</td>
<td><a href="http://www.straad.nl">www.straad.nl</a></td>
</tr>
<tr>
<td>Veterinary Disput Unitas</td>
<td>Vet. debating society within students society Unitas</td>
<td><a href="http://www.vduim.nl">www.vduim.nl</a></td>
</tr>
<tr>
<td>Veterinary Disput Veritas</td>
<td>Vet. debating society within students society Veritas</td>
<td><a href="http://www.vdveritas.nl">www.vdveritas.nl</a></td>
</tr>
<tr>
<td>Cerbus</td>
<td>Vet. debating society within students society Cerbus</td>
<td><a href="http://www.cerbus.nl">www.cerbus.nl</a></td>
</tr>
<tr>
<td>Moustis</td>
<td>Female veterinary debating society within students society DAV/NVD/VOV</td>
<td><a href="http://www.moustis.nl">www.moustis.nl</a></td>
</tr>
<tr>
<td>Olympisch Sports Centre</td>
<td>Olympisch Sports Centre has top-class facilities for basket-, hand-, volleyball and fat sabot, including squash courts and a well-equipped fitness center. Outdoor facilities include soccer and hockey fields, a rugby pitch, a golf practicing facility, two beach volleyball courts and nine all-weather tennis courts</td>
<td><a href="http://www.olympisch.nl">http://www.olympisch.nl</a></td>
</tr>
</tbody>
</table>
APPENDICES STANDARD 9

Appendix 9.A: VETPRO
Changing demands from society and the veterinary profession (VetPro) call for veterinary medical curricula that can deliver veterinarians who are able to integrate specific and generic competencies in their professional practice. This requires educational innovation directed by an integrative veterinary competency framework to guide curriculum development. Given the paucity of relevant information from the veterinary literature, a qualitative multi-method study was conducted to develop and validate such a framework. A competency framework was developed based on the analysis of focus group interviews with 54 recently graduated veterinarians and clients and subsequently validated in a Delphi procedure with a panel of 29 experts, representing the full range and diversity of the veterinary profession. The study resulted in an integrated competency framework for veterinary professionals, which consists of sixteen competencies organized in seven domains: veterinary expertise, communication, collaboration, entrepreneurship, health and welfare, scholarship, and personal development. Training veterinarians who are able to use and integrate the seven domains in their professional practice is an important challenge for today’s veterinary medical schools. The VetPro framework provides a sound empirical basis for the ongoing debate about the direction of veterinary education and curriculum development.

At the Faculty of Veterinary Medicine the curriculum is based upon the seven domains and adjacent competencies described in the VetPro. The VetPro underpinned the blueprint of the assessment program for the clinical courses of the curriculum. All assessment instruments are in alignment with the framework to enable aggregation of information in a structured and meaningful way. The Royal Netherlands Veterinary Association has adopted the VetPro-framework for lifelong learning purposes and quality assurance purposes (www.CKRD.nl).

Competencies

1. Veterinary expertise
   - The veterinarian is able to perform veterinary procedures and activities in an adequate manner;
   - The veterinarian is able to perform adequately in veterinary emergency situations.

2. Communication
   1. The veterinarian is able to communicate effectively with clients, colleagues, other personnel and third parties;
   2. The veterinarian is able to establish and maintain functional relationships.

3. Collaboration
   3. The veterinarian is able to collaborate effectively with colleagues, practice assistants, and third parties within and outside one’s own organization;
   4. The veterinarian is able to effectively guide personnel, clients, and third parties.

4. Entrepreneurship
   5. The veterinarian is able to plan and organize his or her own practice activities.
   6. The veterinarian is able to manage the pharmacy and product stock in accordance with quality standard;
   7. The veterinarian is able to efficiently contribute to business administration;
   8. The veterinarian is able to ensure a responsible and transparent system of quality assurance in their professional work environment.

5. Health and welfare
   9. The veterinarian is able to take responsibility in relation to public health;
   10. The veterinarian is able to take responsibility in relation to animal health and animal welfare;
   11. The veterinarian is able to balance different interests in relation to public health, animal health, animal welfare and practice management in a responsible manner.

6. Scholarship
   12. The veterinarian is able to critically appraise, use and discuss scientific and professional publications;
   13. The veterinarian is able to design and conduct scientific research;
   14. The veterinarian is able to educate and teach using didactically sound approaches;

7. Personal Development
   15. The veterinarian is able to critically reflect on the quality of his or her own professional activities and take action to improve it;
   16. The veterinarian is able to act in accordance with appropriate standards of individual professional behavior.
Appendix 9.B: TEACHING PHILOSOPHY

1. The program’s educational foundations encourage the active learning of the lesson materials. The program is geared towards helping students learn actively, which enables the student to give meaning to the content, obtain insights, make connections and go deeper into the material. The topics and issues are taught in an issue-driven and problem-driven manner. Students find the study program and the work and study climate to be stimulating and motivating.

   Why? (ref. 1-6)

   • An active learning environment has been proven to be effective in helping students master the lesson materials;

   • A passive learning environment, such as a lecture or demonstration, has been proven to be less effective in helping students master the lesson materials.

   Examples of how to achieve this goal:

   • An active learning environment is created by offering a complex case study based on integrated knowledge and founded on concrete learning goals, preceded by a period of structured self-study. It also makes optimal use of the available patient materials. Group discussions among the students encourage the active mastery of the material;

   • Practical examples and patient material are used in such a way that the student is encouraged and facilitated to actively master the materials. Students are given the opportunity to execute, experience and master the tasks themselves;

   • More experienced clinical placement students teach less experienced students, which promotes the active learning of the more experienced clinical placement student.

2. The students are given responsibility for their own professional and academic development.

   Self-motivation and initiative from students is valued and encouraged. The program offers space necessary to acquire insights by trying, discovering and experiencing, performing thought experiments and pushing the limits of the student’s own competencies. The student knows which knowledge, skills and attitude he/she must acquire in order to meet the study programme graduation requirements.

   Why? (ref. 7-11)

   • Initiative, responsibility and increasing independence are essential for the student’s professional and academic development and for his/her motivation;

   • Student learn to bear responsibility if the supervision is optimally tailored to his or her individual level. As the student gradually develops more competencies, the supervision will gradually fade away.

   Examples of how to achieve this goal:

   • An educational program built around increasing independence and responsibility will result in the student being sufficiently competent to practice the profession of veterinarian upon graduation and to continue to develop his/her professional competencies;

   • Teacher training is geared towards recognising the student’s individual competency level;

   • Offering teaching methods and educational activities that focus on learning through research, such as through the student’s own input and ‘ownership’ during the research internship, through taking more responsibility for patients and operational issues during the clinical placement period and through electives taken in addition to the specialist courses.

3. Educational foundation is based on the relevant context for the veterinary profession across the full spectrum.

   The elaboration of the courses is geared towards the issues, case studies, assignments, etc., that are representative for the tasks, issues and problems faced by practising veterinarians.

   Why? (ref. 12-15.5)

   • Students learn more effectively and are more motivated in an educational programme that is based on a combination of theory and the related relevant context.

   Examples of how to achieve this goal:

   • Differentiated clinical placement periods are alternated with theoretical courses in the form of a brief introduction to the subject, followed by a clinical placement, followed in turn by feedback and more in-depth study of a case study in the theoretical course, using all relevant disciplines.

   • When possible, students use their own experience gained from hands-on practice and the theoretical courses;

   • Practice-oriented education offers students the space to master the theoretical backgrounds of individual patient case studies, patient materials and farm consultations.

4. A thorough and well-supported system of supervision, individual feedback, evaluation and testing is provided.

   The program also offers a work and teaching climate with space for the student’s own initiative and exploration. It also teaches students how to learn from their ‘mistakes’. Supervision, feedback from teachers, clinical supervisors, fellow students and others, critical reflection and self-evaluation are essential elements.

   Why? (ref. 16-18)

   • A thorough and well-supported system of supervision, feedback and evaluation stimulates students’ active learning behaviour and promotes the growth of their professional and academic development.

   Examples of how to achieve this goal:

   • Draw up a clear and logical system with a variety of evaluation moments and formative and summative\(^1\) evaluation instruments;

   • A personal dossier for the students recording constructive feedback helps the students gain insight into their professional development.

5. Personal contact between students and teachers and among other students is an important characteristic of FVM’s education.

   The guiding principle is to create a working and teaching environment with optimal space for personal contact between students and teachers over a longer period. This allows the teacher to act as a good role model.

   Why? (ref. 19-21)

   • Individual and personal contact between students and teachers and among other students encourages students and enhances the effectiveness of the education and the students’ development;

   • Positive role models encourage students to learn by offering a safe learning environment, and they also contribute to the good image of the profession.

   Examples of how to achieve this goal:

   • Efficient long-term contact between teachers and students;

   • Small-scale organisation of the practical education and the theoretical courses;

   • Organise practical education in such ways that students can build up a professional relationship with their supervisors;

   • Offer students a safe learning environment with space to try new things, discover and experience, perform thought experiments, make mistakes and explore the limits of their own competencies.

6. The program pays systematic and explicit attention to scientific training and professional behaviour.

   Students develop competencies necessary to continue to function at a high level in their professional practice. They should be able to adequately manage situations in professional practice from a technical, scientific, social and personal perspective, are aware of their own limitations, limits of the profession and importance of lifelong learning for maintaining their own expertise. Students have insight into the progress of their own studies, and strengths and weaknesses. They reflect on their progress and take the initiative for further action if necessary.

   Why? (ref. 22-24)

   • ‘Better Justified Decision Making’ and ‘Professional Behaviour’ increase the quality of the veterinary care provided, and ensure maintenance of professionalism and personal and academic qualities.

   Examples of how to achieve this goal:

   • ‘Better Justified Decision Making’ and ‘Professional Behaviour’ are the common thread throughout the Master’s program and the explicit attention paid to these issues is second nature to the lecturers;

   • The program includes a number of specific assignments and evaluations related to these themes.

7. The course curriculum is coherent and consistent from an educational perspective.

   The individual courses contribute to the realisation of the graduation requirements. An important aspect is that the courses are well coordinated with one another and that the teaching methods are tailored to suit the content of the course. Subsequent courses build on the content and teaching method of the previous courses.

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\(^1\) Formative feedback gives the student insight into his/her own level, the elements that have been mastered and which still need work. It also gives the student the opportunity to adjust his or her educational career. Summative testing generates a statement as to the student’s performance: their level is either satisfactory or unsatisfactory. This form of testing has consequences for the student’s further studies.
Why? (ref. 25-28)

• Clarity as to the curriculum content and teaching methods for both students and teachers will benefit the effectiveness of the learning process and efficiency of work load of the teacher;

• A curriculum that consists of a ‘patchwork quilt’ of individually valuable courses can have negative consequences for the mastery of the material and realization of graduation requirements.

Examples of how to achieve this goal:

• Education is provided in themes that are easily recognized by the students and that build on themes from the Bachelor’s program. This in turn places the previous courses in a more practice-oriented context and provides more in-depth information;

• Each course is organized based on the graduation requirements, which are in turn applied in clear teaching and learning goals using the most optimal teaching method for that course;

• Representatives from all of the various departments are involved in the organisation of all of the courses.

8. Information provided about the curriculum is clear and easy to understand.
The program descriptions are clear and communicated to all students. All of the individuals involved in the Master’s programme (students, teachers, external consultants) are aware of their role in the curriculum and its goals, rationale and position and function of each individual course.

Why?

• The basic principles and organization should be completely clear to all parties involved in order to allow students and teachers to realize the aspects (see above) of the educational philosophy;

• When the curriculum and the information provision is understood by all parties, more energy can be allocated to the content and teaching environment.

Examples of how to achieve this goal:

• Clear and timely provision of informational materials and course descriptions;

• Study materials should provide clarity as to the goals, clear descriptions of work methods and procedures, information about the content and insights into evaluations, criteria and norms;

• When necessary, students and teachers will be provided with custom-tailored training.

Appendix 9.C: PROFESSIONAL BEHAVIOR

With the course on professionalism, FVM wants to ensure that students have insight in their development as a veterinary professional as defined in the veterinary competency profile, and that they adequately document that development.

In the Bachelor’s program, teaching of professionalism is focused on development on three domains:

• Dealing with work and tasks;

• Dealing with others;

• Dealing with oneself.

The course places an emphasis on communicative skills, collaborative skills, and feedback and reflection. To be truly effective, assignments are clearly linked to the personal learning experiences of students and guidance is provided by a tutor throughout the course. All tutors are trained and supported by the execution of their task.

During the Master’s program will be built on the professional development of the student in the Bachelor’s program. The student reflects on his or her professional development during the Master’s phase on the basis of feedback from peers and teachers. His/her development regarding the seven competencies and associated learning objectives for the next period will be laid down at least two times a year in the Personal Development Plan (PDP). The tutor guides the student in his professional development. Therefore the tutor provides feedback on and validates student’s PDP and has at least once a year an individual meeting, in which the tutor and the student speak about student’s professional development based on the PDP. Peer group meetings facilitate student’s reflective skills.
DIGEST BACHELOR

YEAR 1

From Organism to Tissue
Provides students with knowledge of the building blocks of mammals and birds at the macro- and microscopic level. It also discusses the basic embryonic development of mammals and birds, as well as some fundamental embryological principles. The content of this course is the foundation upon which all further organ-related courses are based.

From Cell to Molecule
Provides students with a general knowledge of and insight into the molecular building blocks of cells, including the main biochemical processes and biological principles and mechanisms that determine an animal’s health or illness. The course concentrates on molecular and cellular level, including an understanding of biological foundations for normal functions and mechanisms that maintain homeostasis.

From Cell To Tissue
In this course the functions of intracellular structures, intercellular communication within tissues and the production of extracellular proteins are reflected in the organization of cells at sub-cellular level.

From Genome to Population
Gain knowledge and insight of biochemical processes involving nucleic acids that occur at molecular and cellular levels. Issues discussed include the structure, characteristics, function and metabolism of nucleic acids, but also the molecular and chromosomal basis for the creation of genotypes, deviant and non-deviant (diseased and healthy) phenotypes and genetic variation.

Longitudinal course 1: Introduction into Veterinary Medicine and Science
Purpose is to provide students with an introduction to subjects of professional orientation, academic forming and dealing with information, statistics, history of veterinary medicine, animal handling and professional behavior.

External Influences on Cellular Functions
Deals with influences on cellular functions by endogenous substances such as drugs and toxins, treated from the perspective of the endocrine and neural system, with more detailed attention for the organization of both systems. It also deals with the possible end states (absorption, division, metabolism and excretion) of endogenous and exogenous substances in the body, such as drugs and toxins.

Infection and Immunity
Many diseases in animals are caused by microorganisms and parasites. The prevention and treatment of these diseases require a familiarity with the biology of these agents and their interaction with the host. This course discusses the biology of these microorganisms and the structures and functions of the host's immune system. It then goes on to deal with the interaction between host and microorganism by integrating these general aspects.

Longitudinal course 2: Introductio to diagnostics
Provides an introduction to performing clinical and supplementary examinations in a structured and professional manner, including topics such as insight into the purpose of diagnostics, diagnostic process and reliability of data gained from diagnosis. Issues pertinent to clinical examination, principles of echography and x-ray photography and laboratory diagnostics will be discussed.

Skin and Skin Derivatives
Deals with the macroscopic and microscopic aspects of the normal structure, function and structure of the skin, its derivatives and pathology. Students gain knowledge of the skin’s reaction patterns and regulating mechanisms. The macroscopic and histopathological characteristics of the most common infectious and non-infectious immune-mediated and non-immune mediated skin diseases and injuries will also be discussed.

Blood and Blood-forming Organs
Is structured around four clinical problem groups: leukocyte defects, lymph node defects, anaemia and clotting defects. A typical patient will be presented and the problem explained through lectures on development, anatomy and physiology of the blood and blood-forming organs. The components that affect the immune system, transport of oxygen (erythrocytes) and blood clotting will also be discussed.

YEAR 2

Circulation
Gain insight into and knowledge of normal macroscopic and microscopic structure of the heart, blood and lymphatic vessels. Attention is paid to the physiology and pathophysiology of the circulatory system and neuroendocrine adaptive mechanisms in the circulatory system, pathology of most common circulatory...
diseases, clinical diagnostics of the circulatory system, basic supplementary diagnostic options applicable to the circulatory system, and fundamentals of pharmacology, and its influence on the circulatory system.

**Digestion**
Students will become acquainted with the structure and function of the digestive system based on six themes, including the most common infectious and non-infectious diseases. Special attention will be paid to attendant pathophysiological mechanisms, in context with diagnostics and therapy.

**Respiration**
Students gain understanding of functions and underlying mechanisms of the respiratory system. The course deals both with resting state of a healthy animal and respiratory system under stress or during illness. Where possible, course subjects will be linked to: anatomy, biochemistry, physiology, pathophysiology, infection, pathology, clinic, therapy and prevention/epidemiology.

**Metabolism and Endocrinology**
Gain insight in the biochemical and physical processes that occur in the creation, destruction and maintenance of tissues and in the intake, storage and mobilization of energy. Coming up for discussion are the metabolism of carbohydrates, fat and proteins, the supply of nutrients through foodstuffs and the processing of vitamins and minerals, the energy balance in detail, and endocrine organs and diseases.

**Longitudinal course 3: Clinical Lessons**
Provides in combination with the course: Legislation, Ethics and the Environment. The lessons are focused on practice and development of independent clinical reasoning and problem solving, with considerable attention to the process of evaluating information and making decisions. Integration and application of knowledge is a vital element in doing so. Course places an emphasis on selecting a particular case as well as understanding underlying theories, models and concepts. The core elements in this format are: problem definition, analysis, gathering and internalizing information, synthesis, and integration.

**Neurology, the senses and anesthesiology**
Gain knowledge about structure and function of the central nervous system, with special emphasis on interaction between various elements and in- and output channels. Special attention is given to systems that collect visual, auditory, smell and balance information, areas of the brain where this information is processed and consequences that damage may have on animals' functioning and practical application of anesthetics as well as physiological principles of pain and consciousness. Knowledge of the peripheral nervous system and endocrine system.

**Gain insight in knowledge and insight in organs and their position in the body in relation to other organs. Coming up for discussion are: anatomy, deviant anatomy, histology, normal and pathological cases, cellular biology, neurology/pathophysiology/symptoms, osmoregulation (PU/PD), volume regulation, acid-Base homeostasis, potassium homeostasis, kidneys filtering capacity, calcium-Phosphate balance, cause of acute kidney damage and progression to chronic kidney disease and bladder innervations and urine excretion ducts. The course also presents opportunities for practicing clinical skills and other diagnostic skills based on a case study.**

**Hepatobiliary System**
Deals with the liver and is organized around three themes: structure/yellow mucus membranes, function/detoxification and pathology/inflammations. Students use literature provided by the teacher to learn to make decisions resulting in an optimal diagnosis and treatment of liver disease, including pros and cons of the chosen diagnosis and treatment (well-supported decision making).

**Adaptation and Welfare**
Gain knowledge and insight into adaptive regulation mechanisms. Students learn about how to measure welfare of animals and to apply knowledge and insight gained in observing, qualifying and treating normal and abnormal behavior. The legal aspects and social context of (lack of) welfare, including supervision and enforcement of legislation and regulations, form the foundations for veterinarian's social responsibility and professional ethics with regard to animal health and welfare.

**YEAR 3**

**Reproduction**
Discusses normal and abnormal aspects of reproduction, obstetrics, lactation and primary neonatal care in an integrated, supra-species manner, including: abnormal situations, diseases and operations related to the development and function of reproductive organs and mammary, glands, fertility, gravity, obstetrics and post-partum period that are of particular interest to primary veterinarians.

**Epidemiology and Breeding**
Gain insight in skills necessary to recognize and study diseases and heritable characteristics in an animal population. Attention are paid to methodology of scientific research and methods of analyzing data, a number of epidemiologic techniques in tracking diseases in an animal population as well as the risk factors and costs associated with those techniques and the genetic, and biological aspects of breeding, breeding systems and breeding programs.

**Locomotion**
Deals with the structure, function and clinical diagnostics of the locomotion system, including clinically relevant diseases, orthopedic trauma, first aid, basic bandaging and pharmacotherapy for all animals, including birds. The lessons integrate the concepts healthy, sick, healing and health-maintenance. The therapeutic and preventative strategies will be presented in conjunction with the underlying pathologies.

**Veterinary Public Health**
Deals with basic concepts of process control with a guaranteed safe food production chain and the role of veterinarians in that process. Subjects treated include microbial and non-microbial cycles that may influence on humans, animals or environment. Attention is paid to relevant zoonosis among companion animals and livestock that are not primarily operated as production systems with respect of animal welfare and public health will be dealt with in their social context. The course will also discuss processing techniques for animal-based foods in relation to food safety (hygiene, preservation, storage, etc.).

**Longitudinal course 4: Legislation, Ethics and Environment in Clinical Lessons**
Purpose is to learn to think about ethical, judicial, legal and environmental aspects of veterinary practice in a structured manner, in order to make responsible choices regarding veterinary and social issues and to apply them to the clinical reasoning process. The second part of the course will provide students with the basic principles of managing a veterinary practice.

**Thesis**
An individual Bachelor's thesis based on the student's own research. The most important learning objectives are: (1) to learn to be responsible for completing a project independently, (2) to improve writing skills and learn to carefully formulate ideas, (3) to become familiar with one of the fields in the veterinary profession, (4) to critically analyze new information from a variety of sources, and (5) to prepare for the research internship (optional). The subject of the thesis should be of a veterinary or biologic nature.

**Integration and multi-organ diseases**
This course concentrates on the multi-organ character of diseases. Coming up for discussions are: systemic diseases, shock and neoplasia. Central topic is the interaction between various organs and organ systems, diseases and the cause and consequences they have for the entire organism. Surgery is the third important theme dealt with, including fundamental principles and techniques for a successful surgical operation.

**Applied Legislation, Ethics and Environment**
This course is geared towards the development of more independence in applying and integrating knowledge and skills. Considerable attention is paid to the process of evaluating information and making decisions. This requires that students have sufficient knowledge in order to thoroughly comprehend the subject matter, such as defining the problem, analysis, gathering and internalizing information, synthesis and integration.

**Longitudinal course 5: Integrating Diagnostics and Problem-Oriented Reasoning**
Integration is the core concept in this course. Little new material will be taught; the student receives a work and practice platform to integrate his or her acquired knowledge and skills and supplementary diagnostics in order to solve clinical problems. The lectures and labs present the student with complex cases without a specifically defined organ problem. Students also have the opportunity to practice their skills in the skills lab.

**Professional Conduct 1.2 and 3**
Gain insight in the development as a veterinary professional as defined in the veterinary competency profile, and adequately document that development. Teaching is focused on development on three domains: dealing with work and tasks, dealing with others, and dealing with themselves. The course places an emphasis on communicative skills, collaborative skills and feedback and reflection. Guidance is provided by a tutor throughout the course.

**ELECTIVES**

**Animals, I could eat them up!**
Gain knowledge of the position of rearing farm animals in The Netherlands and the impact that rearing of farm animals have for humans, animals and environment. Gain insight into which housing systems for farm animals in The Netherlands exists, how current husbandry originated and how it relates to farming systems in other countries.

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82 Self-Study Report 2014 – Faculty of Veterinary Medicine
83 Self-Study Report 2014 – Faculty of Veterinary Medicine
### Economic Principles in Veterinary Medicine
Gain knowledge about the economic background of a veterinary company. Coming up for discussion are the theoretical underpinning of the economic laws of the free market, among which a veterinarian should work, specific examples from veterinary practice management, and pricing.

**Evolution: from Cyanobacteria to double-muscled cow**
Gain insight in the evolution and its relevance for veterinarians in contemporary society. Coming up for discussion are major mechanisms of evolution and question if natural evolution has led to major differences in anatomical, and physiological variations between species and ‘artificial’ evolution.

### Herpetology
Gain knowledge of various relevant aspects of animal reptiles and amphibians, so that students to know how to act when these animals are presented as a patient in practice. Special attention is paid to some common diseases, mostly related to improper housing, feeding and/or care.

### Clinical Pathophysiology/Immunology
Gain knowledge and insight in the possible disruption of the regulatory mechanisms of the innate and specific immune system and factors that play a role. These disturbances are discussed on the basis of clinically relevant diseases.

### Veterinary Toxicology
Gain insight in identifying proper treatment method for most common poisoning in pets and farm animals. Attention is paid to action, risks and intoxications of these substances or bio toxins by humans.

### Didactic Skills in Veterinary Medicine
Gain knowledge and insight of principles of didactics and educational science. Acquire skills to apply these principles both in the veterinary education and in veterinary practice.

### Comparative Ethics – Functional and Dysfunctional Behavior
Gain insight in how behavior can derail in abnormal or problem behavior. Coming up for discussion are the importance and recognition of natural and normal behavior, and the effects of fear, which also play an essential role in the development of many abnormal and problem behavior.

### Human Health Risks with Regard to Animals and the Environment
Gain insight in the cycles of microbial and non-microbial contaminants via live animals, or animal products, in which living or water environment play an important role. Students learn to make risk analyses in companies and institutions.

### Integrated Reproductive Physiology
Obtain in-depth cross-species knowledge and insight of a) the regulation of reproduction of both male and female animals and b) possibilities to influence propagation. Coming up for discussion are epigenetics, embryonic imprinting, and autocrine and paracrine systems.

### Infectious Diseases
Gain insight in: a) pathogenesis and spread of various veterinary infectious diseases; b) protective immune response of the host against relevant pathogens; c) diagnostic techniques; d) therapy; and e) possibility to protect populations by means of vaccination against these diseases.

### Pediatrics
Gain insight in numerous and various (veterinary) problems that manifest around birth and growing up of young animals. Coming up for discussion are: vitality, thermo stability around birth, care and feeding of orphaned animals, interaction between mother and young, immunology neonates.

### Fish
Gain knowledge of the various aspects of fishkeeping in The Netherlands and the world. This concerns both the commercial farmed fish, farmed and wild catch, as aspects of the ornamental fishkeeping.

### Wildlife health
Gain knowledge and understanding of issues in conservation medicine and wildlife management to which veterinary science contribute. Coming up for discussion are: most important health and welfare issues in wild and feral animal populations, including ecological, epidemiological, ethical, societal, legal and practical aspects, data retrieval systems for wildlife related issues and awareness systems for wildlife related issues.

### Regenerative Medicine
Gain insight in a) chronic disease processes which lead in different organ systems and species to chronic organ dysfunction (on pathological, cellular and biochemical level); b) the role and function of adult stem cells, compared to embryonic stem cells; c) the functional relationship between adult stem cells and their immediate surroundings (the "stem cell niche"); d) cross body insights into cellular and molecular pathogenesis of chronic diseases (integration of knowledge and understanding above the organ systems); and e) regenerative and anti-degenerative biological agents.
Appendix 9.F: EVALUATION PROCEDURE BACHELOR

1. Student surveys
   When:
   • During the 1st week following completion of the course.
   How:
   • Standard student surveys.
   Note: The student surveys are processed and summarised by OSZ. The reports will be available no later than three weeks after the completion of the course.

2. Quality Control Meeting
   Who:
   • Course coordinator, students, teachers and the quality control coordinator (depending on the agreements made with the course coordinator and/or the P&C meeting).
   How and when:
   • No later than six weeks after completion of the course;
   • The course coordinator presides over the meeting;
   • Planning, preparation and reporting by student representatives from each year, in cooperation with the quality control coordinator.
   Input:
   • Results of the student surveys (available digitally on MyVet);
   • Key indicators (available digitally on MyVet);
   • Results of agreements from the previous P&C meeting (hard copy provided by the course coordinator; available digitally on MyVet);
   • Self-evaluation by the course coordinator, including the results of the student surveys and teacher evaluation (not available digitally).
   Output:
   • Report of the quality control meeting, including the conclusions of the meeting with the strong points and points for improvement for each course and the proposals for new SMART agreements (input for P&C meeting, not on MyVet). Note: the meeting participants approve the report.

3. Planning & Control (P&C) meeting
   Who:
   • P&C chairperson, educational director and quality control coordinator.
   How and when:
   • Max. 10 weeks after the completion of the course;
   • Annually, unless specified otherwise;
   • Planning, preparation and reporting by the quality control coordinator.
   Input:
   • Results of the SMART agreements from the previous P&C interview (as described by the course coordinator and the quality control coordinator);
   • New key indicators for the course;
   • Report of the quality control interview;
   • Self-evaluation by the course coordinator;
   • Results of the student and lecturer surveys.
   Output:
   • P&C meeting report
   o Course key indicators;
   o Summary rating for the course;
   o New SMART agreements formulated during the P&C meeting;
   o Agreements on monitoring and follow-up on quality control*;
   o Appendices:
     • Appendix 1: Results of student survey (without listing lecturer names);
     • Appendix 2: The results of the SMART agreements from the previous P&C interview.
   *When there are no major issues, the parties may agree to replace the next annual P&C meeting with a written report on the state of affairs by the course coordinator.
Communication
Students and lecturers:
- Quality control coordinator ensures that an annual report on the quality of each course is drafted based on the P&C meeting or the written report on the state of affairs (see above).

Board of Studies and Study Programme Committee:
- Same information as students and teachers (see above);
- Insight on the information pertaining to quality control in MyVet;
- P&C meeting report with two appendices:
  - Appendix 1: Results of student survey (without listing lecturer names)
  - Appendix 2: The results of the SMART agreements from the previous P&C interview.

Examination Committee
- Annual quality control report for Bachelor's and Master's exams by the educational director;
- Min. two times per year meeting on exam quality with the educational director.

Responsibilities and roles

Educational Director
- Responsible for the quality and supervision of the quality of the education in the Bachelor’s program (incl. the quality control cycle described above and communications).

Course coordinator
- Shares responsibility for the quality and quality control of his/her course;
- Ensures that the digital surveys and evaluation meetings with students are conducted (preparation and processing by OSZ);
- Responsible for the content of the quality control meeting;
- Ensures that the teachers can contribute adequately to the course quality control cycle;
- Draws up a self-evaluation for the annual P&C meeting and the self-evaluation using the results of the surveys and the quality control meetings.

Quality Control Coordinator
- Plans, prepares and reports on the quality control meeting and the P&C meetings;
- Monitors the implementation of the agreements made and informs the educational director on the progress of and compliance with the agreements made;
- Supports the educational director in communicating the results of the quality control cycle and his/her other duties in the context of quality control.

Board of Studies and Study Programme Committee
- Advise on quality and quality control issues pertaining to the various courses based on the P&C report (see above) upon request or at own initiative.

Examination Committee
- Monitors the quality of the exams (see also: Examination Committee Duties and Responsibilities).

### Appendix 9.G: BACHELOR ASSESSMENT

<table>
<thead>
<tr>
<th>Title Year 1</th>
<th>test form</th>
<th>final grade weighting</th>
<th>retest possibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>From Organism to Tissue</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>intermediate test 1 (biology)</td>
<td></td>
<td>weighting: 0.5 point bonus</td>
<td>no</td>
</tr>
<tr>
<td>intermediate test 2 (macro birds)</td>
<td>blackboard test</td>
<td>weighting: satisfactory = prerequisite for P9</td>
<td>yes, in event of absence only</td>
</tr>
<tr>
<td>PG assignment</td>
<td>linked to P9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>final exam</td>
<td></td>
<td>weighting: 100%</td>
<td>yes, &gt; 4</td>
</tr>
<tr>
<td>From Cell to Molecule</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>self-study assignments</td>
<td>when two bonus quizzes show that self-study assignments have been completed student’s worst answer in final exam don’t be counted in the grade (student may also skip one exam question and will receive the average grade for that question)</td>
<td>weighting: the student receives a bonus for the skipped question equal to his/her own average; only valid for exams.</td>
<td></td>
</tr>
<tr>
<td>turn in test questions</td>
<td>when students turn in a correct test question, they receive max. 0.5 bonus points.</td>
<td>weighting: 0.5 point bonus</td>
<td></td>
</tr>
<tr>
<td>GA</td>
<td></td>
<td>weighting: GA satisfactory</td>
<td></td>
</tr>
<tr>
<td>lab (3)</td>
<td></td>
<td>weighting: 10% of total</td>
<td>no</td>
</tr>
<tr>
<td>final exam</td>
<td></td>
<td>weighting: 90% of total</td>
<td>yes, &gt; 4</td>
</tr>
<tr>
<td>From Cell to Tissue</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>intermediate test</td>
<td>20 MC questions</td>
<td>weighting: 20%</td>
<td>yes, if notified of illness in advance</td>
</tr>
<tr>
<td>GA</td>
<td>group report / presentation</td>
<td>weighting: 10%</td>
<td>replacement assignment only if student notifies of absence due to illness, etc. in advance.</td>
</tr>
<tr>
<td>final exam A</td>
<td>40 ‘Illustration questions’, questions accompanied by an illustration or diagram that can be answered with a short answer.</td>
<td>weighting: 40%</td>
<td>yes, &gt; 4</td>
</tr>
<tr>
<td>final exam B</td>
<td>30 MC questions</td>
<td>weighting: 30%</td>
<td>yes, &gt; 4</td>
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<tr>
<td>From Genome to Population</td>
<td></td>
<td></td>
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<tr>
<td>intermediate test</td>
<td>during seminar 4, voluntary</td>
<td>weighting: 5 pt</td>
<td>yes, in event of absence due to illness, etc.</td>
</tr>
<tr>
<td>GA</td>
<td>ind. 100% GA attendance compulsory</td>
<td>weighting: 20 pt</td>
<td></td>
</tr>
<tr>
<td>PB assignment</td>
<td>weighting: PG satisfactory</td>
<td></td>
<td></td>
</tr>
<tr>
<td>final exam</td>
<td>weighting: 75 pt</td>
<td>yes, &gt; 4</td>
<td></td>
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<tr>
<td>External Regulation of Cellular Function</td>
<td></td>
<td></td>
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<tr>
<td>intermediate test</td>
<td>blackboard test</td>
<td>formative</td>
<td></td>
</tr>
<tr>
<td>final exam</td>
<td></td>
<td>weighting: 100%</td>
<td>yes, &gt; 4</td>
</tr>
<tr>
<td>Immuniation and Resistance</td>
<td></td>
<td></td>
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<tr>
<td>GA 1 and 2</td>
<td>blackboard test</td>
<td>formative</td>
<td></td>
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<tr>
<td>gene Im-Fect</td>
<td>participation in game</td>
<td>weighting: satisfactory</td>
<td></td>
</tr>
<tr>
<td>intermediate test lab 7 and 8</td>
<td>blackboard test</td>
<td>weighting: satisfactory</td>
<td></td>
</tr>
<tr>
<td>final exam</td>
<td></td>
<td>weighting: 100%</td>
<td>yes, &gt; 4</td>
</tr>
<tr>
<td>Skin and Skin Diseases</td>
<td></td>
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<tr>
<td>intermediate test</td>
<td>blackboard test</td>
<td>formative</td>
<td></td>
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<tr>
<td>PB assignment</td>
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<td></td>
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<tr>
<td>lab quiz 1</td>
<td></td>
<td>weighting: satisfactory</td>
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</tr>
<tr>
<td>lab quiz 2</td>
<td></td>
<td>weighting: satisfactory</td>
<td>yes</td>
</tr>
<tr>
<td>final exam</td>
<td></td>
<td>weighting: 100%</td>
<td>yes, &gt; 4</td>
</tr>
<tr>
<td>Blood/Blood-Generating Organs</td>
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<tr>
<td>lab evaluation</td>
<td></td>
<td>weighting: satisfactory</td>
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<tr>
<td>Final Exam</td>
<td>Weighting (%)</td>
<td>Yes, &gt; 4</td>
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<tr>
<td>Introduction to Diagnostics &amp; Science</td>
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<tr>
<td>Final exam</td>
<td>100%</td>
<td></td>
<td></td>
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<tr>
<td>Self-study assignments (statistics)</td>
<td>Blackboard assessments</td>
<td>0.5 point bonus, only valid for 1st statistics test</td>
<td></td>
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<tr>
<td>PB assignment</td>
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<tr>
<td>Project evaluation</td>
<td>Project report</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>Final exam (statistics)</td>
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<td></td>
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<tr>
<td>1st tutor meeting</td>
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<td></td>
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<tr>
<td>Introduction to Diagnostics</td>
<td>Admissions test</td>
<td>Formative</td>
<td></td>
</tr>
<tr>
<td>Feedback moment clinical skills</td>
<td>During CA labs</td>
<td>Formative</td>
<td></td>
</tr>
<tr>
<td>OAE</td>
<td>50%, satisfactory</td>
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<td>Final exam</td>
<td>50%, satisfactory</td>
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<td>2nd tutor meeting</td>
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<td>Year 2</td>
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<td>Circulation</td>
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<tr>
<td>Final exam</td>
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<td>Digestion</td>
<td>Intermediate test A</td>
<td>Blackboard test</td>
<td>Satisfactory</td>
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<td>Intermediate test B</td>
<td>Response</td>
<td>10%</td>
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<td>PB assignment</td>
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<td>Final exam</td>
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<td>Reproduction</td>
<td>Intermediate test</td>
<td>Response, grade deleted if student scores 4 or less for final exam.</td>
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<tr>
<td>VPH and Food Safety</td>
<td>Lab</td>
<td>40 points</td>
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<td>GA</td>
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<td>PB assignment</td>
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<tr>
<td>Final exam</td>
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<tr>
<td>Metabolism &amp; Endocrinology</td>
<td>GA 1</td>
<td>100% GA attendance compulsory</td>
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<td>GA 2</td>
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<tr>
<td>Final exam</td>
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<td>Neurology, Senses &amp; Anesthesiology</td>
<td>Admissions test</td>
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<td>Blackboard test</td>
<td>Formative</td>
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</tr>
<tr>
<td>Final exam</td>
<td>100%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urology, Urinary Tract</td>
<td>Intermediate test</td>
<td>Blackboard test</td>
<td>Formative</td>
</tr>
<tr>
<td>Report</td>
<td>Assignment 1B or 1E</td>
<td>15%</td>
<td></td>
</tr>
<tr>
<td>Final exam</td>
<td>80%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hepatology</td>
<td>Final exam</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>Final exam</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adaptation and Welfare</td>
<td>Intermediate test</td>
<td>Blackboard test</td>
<td>Formative</td>
</tr>
<tr>
<td>GA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PB assignment</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Major Uniform
Management and the Veterinarian’s Societal Responsibility: Addressing the veterinarian’s social responsibility with regard to animal health, animal welfare, public health (one health) and food safety, including awareness of the significance of management in veterinary practice and the veterinarian’s social responsibility, also toward experimental animals. Well-considered handling of animals, veterinary drugs, one’s own body (ergonomics) and the organization in which the veterinarian serves are of particular interest in this course.

Responsible Use of Experimental Animals: Training students to make a conscientious choice for animal experiments for a particular purpose. Students design these experiments in an ethically responsible manner and are able to hold final responsibility for planning them. Insight and skills developed in this course provide the basis for participation in animal experiments under supervision. Students will be able to assess the validity of scientific literature from the Laboratory Animal Science point of view.

Hygiene, Microbiological and Pathological Diagnostics: Gaining basic knowledge of and insight in methodology of pathological and microbiological examination, which are being discussed in the context of a clinical case. Dissection and microbiological diagnostic techniques will be practiced, as well as interpretation of results and translation of the findings to the individual animal, herd, product or environment. Concepts of hygiene and food microbiology are also addressed in the course.

### Major Differentiated
Companion Animal Medicine Clerkship and Theoretical Education: Students who select the Master Companion Animal are trained to acquire and develop knowledge, skills and professional conduct which make them pre-eminently fit to function in the sector of veterinary medicine that is focused on dogs, cats, and small companion animals (in particular rabbits, rodents, ferrets and companion birds) that are kept individually or in groups, for recreational purposes, for sports or for breeding. The training in this course will be theoretical and practical, most often in a clinical setting with patients. The students will obtain an increasing responsibility for the patients.

Equine Medicine Clerkship and Theoretical Education: Students who select the Master Equine are trained to acquire and develop the knowledge, skills and professional conduct which prepare them to function in the sector of veterinary medicine focused on horses that are kept individually or in groups, as companion animals, for recreational purposes, sports or breeding. The training in this course is both theoretical and practical, most often in an equine clinical setting (veterinary teaching hospital). Students will be given increasingly responsibility in the care of patients.

Farm Animal Health/VPH Clerkship and Theoretical Education: Students who select the Master Farm Animals are trained to acquire and develop the knowledge, skills and professional conduct to perform as a veterinarian in the sector of veterinary medicine for farm animals (ruminants, pigs and poultry) regarding both individual animals as well as herds with respect to animal health human health and animal welfare. The training in this course is theoretical and practical, most often in a setting with patients/herds. During the training, students will be assigned an increasing responsibility for the health of patients/herds.

Veterinary Public Health: Obtain skills to act actively and promptly in a situation where public health in relation to animals and/or their products is at stake. A (protocol) environment analysis and investigation of sources of infection are part of the practical work.

Extramural Clerkship (in a Private Veterinary Practice): The external practice adapts the practice’s program as much as possible to the goals the student has for him/herself. The content of the program depends on the particular caseload offered at that specific period of time.

### Optional Course Profile
<table>
<thead>
<tr>
<th>Course Title</th>
<th>Credit Hours</th>
<th>Type</th>
<th>Mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic Rotation I</td>
<td>2.5</td>
<td>AND</td>
<td>Elective</td>
</tr>
<tr>
<td>Responsible Use of Experimental Animals</td>
<td>4.5</td>
<td>AND</td>
<td>Elective</td>
</tr>
<tr>
<td>Hygiene, Microbiological and Pathological Diagnostics</td>
<td>10.5</td>
<td>AND</td>
<td>Elective</td>
</tr>
<tr>
<td>Total Credit Hours</td>
<td>12</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
licenced veterinarian. Students also obtain insight into the farm animal sector and into the societal responsibility of the veterinarian related to animal health, animal welfare, public health and food safety.

**OPTIONAL COURSE PROFILE**

**In depth Clerkship Companion Animal Medicine:** To increase knowledge, and to further develop skills, insight and professional conduct required in companion animals.

**In depth Clerkship Equine Medicine:** To increase the knowledge, and to further develop skills, insight and professional conduct required in equine veterinary medicine.

**In depth Clerkship Farm Animal Health/Veterinary Public Health:** To increase the knowledge, and to further develop skills, insight and professional conduct required in farm animals and veterinary public health.

**Policy and Management Track:** Governance and policy are aiming at training students in critically observing governance and policy processes involving animal health, animal welfare, public health and food safety forms, with attention for the underlying conflicts and dilemma’s. The course trains students in management skills with an approach from veterinary point of view. Through combination of specific clinical, pathobiological and population-biological knowledge on one hand, and governance and policy-related knowledge on the other, the ‘governance & policy’ veterinarian is well suited to serve as an intermediary between the commercial animal husbandry, trade and industry and the (national and international) government.

**Research Track:** This course equips the student with knowledge, skills and professional conduct which makes him/her pre-eminently fit to work in (veterinary) biomedical research. Through combination of specific non-species-bound pathobiological and population-biological insight gained during the bachelor’s and Master’s curricula and knowledge and experience in the field of biomedical research, the veterinarian that graduates with the Minor Research qualification is well suited to act as a researcher as well as an intermediary between the fields of biomedical research and practical and applied veterinary medicine. Research Project: Comprising an obligatory element of the curriculum addressing a (veterinary) biomedical problem, conducted by the graduate and supervised by a senior staff member. Basic elements of research, formulation of a hypothesis and research questions, experimental design and actual execution of experiments, interpretation and evaluation of results are practiced. The research project is finalized by an oral presentation and report, both in English.

**ELECTIVES MASTER**

**Ethics of Animal Use:** Deepening and widening of knowledge and skills in ethics in sense that students are challenged to think about ethical and societal questions on a theoretical and practical level. Issues concerning animal ethics as well as veterinary professional ethics are being addressed.

**Tropical Animal Health:** Providing insight into animal health and production in the tropics and involves study of several important tropical infectious and parasitic diseases. Insights in epidemiology, mode of transmission, pathogenesis, diagnostics and therapeutics will be provided. Special attention goes to disease control and preventive strategies (vaccine development, early warning systems, etc.).

**Mechanism-based veterinary pharmacology and toxicology:** Rational pathways from molecular mechanisms to effect in vivo: Providing profound knowledge on current high-interest scientific topics in (veterinary) pharmacology and toxicology, and background and training to master the task to do so. Apart from specific expertise, this course contributes to a critical attitude and skills in assessing and evaluating pharmacological and toxicological effects and learns to pose the right questions for elaborating translational aspects of drugs and toxicants.

**Animal Law:** Animal Law plays an increasingly important role in society. This involves production and commercial animal husbandry, trade and industry and the (national and international) government.

**Behavioral Neuroscience:** The brain is a complex organ that controls the wide variety of behaviors that humans and animals display in order to function and survive. To understand the behavior of animals and enable treatment of behavioral problems one needs to understand how functional and dysfunctional behavior develops. In this course the functioning of the brain and its role in regulation of behavior develops will be discussed.
Basic Externship Companion Animal Science - 15 ECTS*  
<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>[Interactive] Lecture</td>
<td>3.25</td>
</tr>
<tr>
<td>Clinical Education</td>
<td>179.5</td>
</tr>
<tr>
<td>Lab</td>
<td>17.5</td>
</tr>
<tr>
<td>Common Education</td>
<td>22.75</td>
</tr>
<tr>
<td>Case Report</td>
<td>19.25</td>
</tr>
<tr>
<td>Demonstration</td>
<td>4.5</td>
</tr>
<tr>
<td>Self-Study</td>
<td>173.25</td>
</tr>
</tbody>
</table>
*assessment is e-PASS

Basic Externship Farm Animal Health / VH - 15 ECTS*  
<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>[Interactive] Lecture</td>
<td>10</td>
</tr>
<tr>
<td>Seminar</td>
<td>122</td>
</tr>
<tr>
<td>Lab</td>
<td>40</td>
</tr>
<tr>
<td>Clinical Education</td>
<td>71</td>
</tr>
<tr>
<td>Meet the expert</td>
<td>22</td>
</tr>
<tr>
<td>Excursion</td>
<td>56</td>
</tr>
<tr>
<td>Multiple cases</td>
<td>12</td>
</tr>
<tr>
<td>Case Report</td>
<td>18</td>
</tr>
<tr>
<td>Common Education</td>
<td>12</td>
</tr>
<tr>
<td>(Group) Assignment</td>
<td>8</td>
</tr>
<tr>
<td>Self-Study</td>
<td>43</td>
</tr>
<tr>
<td>Assessment*</td>
<td>6</td>
</tr>
</tbody>
</table>
*Part of assessment is e-PASS

Basic Externship Equine Science - 7.5 ECTS*  
<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical Education</td>
<td>163</td>
</tr>
<tr>
<td>Seminar</td>
<td>14</td>
</tr>
<tr>
<td>Lab</td>
<td>17</td>
</tr>
<tr>
<td>Self-Study</td>
<td>16</td>
</tr>
</tbody>
</table>
* assessment is e-PASS

For the external education course and the research project there are no contact hours available, due to the fact that the content for this course differs per student.

Appendix 9.J.A: EVALUATION PROCESS MASTER

Master’s Programme Quality Control
October 2012

1. Student surveys and evaluation interviews between block coordinators and students
When: See Appendix.
How: See standard student survey. (Note: the student surveys are processed and summarized by OSZ).

2. Quality control interviews between PC Chair, students and lecturers
Who: P&C chairperson, teachers, students and quality control coordinator.
How and when:
• At least 4 weeks prior to the annual P&C meeting;
• Planning, preparation and reporting by students from the year core, in cooperation with the quality control coordinator;
• P&C chairperson presides over the meeting.
Input (per course)
• Results of the student and teacher surveys;
• Key indicators for the program courses;
• Information from the meetings with the block coordinators and students (via P&C chairperson);
• Results of the agreements from the previous P&C meeting.
Output (per course)
• Report of the quality control meeting, including: the conclusions of the meeting with strong points and points for improvement for each course and the proposals for new SMART agreements (input for P&C meeting) (Note: the report is approved by the meeting participants).

3. Planning & Control (P&C) meeting
Who: P&C chairperson, educational director and quality control coordinator.
When: At least once per year for all courses
Input (per course)
• Results of the SMART agreements from the previous P&C interview (as described by the PC chairperson and the quality control coordinator);
• New key indicators for the course;
• Report of the quality control interview;
• Self-evaluation by the PC chairperson;
• Results of the student and teacher surveys.
Output (per course)
• P&C meeting report
  o Course key indicators;
  o Summary rating for the course;
  o New SMART agreements formulated during the P&C meeting;
  o Agreements on monitoring and follow-up on quality control.
  o Appendices:
  ➢ Appendix 1: Results of student survey (without listing lecturer names);
  ➢ Appendix 2: The results of the SMART agreements from the previous P&C interview.

Communication

Students and lecturers:
• Quality control coordinator ensures that an annual report on the quality of each course is drafted based on the P&C meeting or the written report on the state of affairs (see above).
Board of Studies and Study Programme Committee;
• Same information as students and teachers (see above);
• Insight on the information pertaining to quality control in MyVet;
• P&C meeting report with two appendices.
Examination Committee
• Annual quality control report for Bachelor’s and Master’s exams by the educational director;
• Min. two times per year meeting on exam quality with the educational director.
Responsibilities and roles

**Educational Director**
- Responsible for the quality and supervision of the quality of the education in the Master's programme (incl. the quality control cycle described above and communications).

**P&C Chair**
- Shares responsibility for the quality and quality control of his/her course;
- Ensures that the digital surveys and meetings with students are conducted in accordance with the diagram in Appendix 1 (preparation and processing by OSZ);
- Is responsible for the content of the quality control meeting;
- Ensures that the teachers can contribute adequately to the course quality control cycle;
- Draws up a self-evaluation for the annual P&C meeting (opinion on how quality control has been implemented in his/her P&C), based on the agreements from the previous P&C meeting, opinions of the block coordinators, results of the surveys and reports of the meetings between the block coordinators and the students.

(This self-evaluation must be submitted to the quality control coordinator no later than six weeks before the P&C meeting).

**Quality Control Coordinator**
- Plans, prepares and reports on the quality control meeting and the P&C meetings;
- Monitors the implementation of the agreements made and informs the educational director on the progress of and compliance with the agreements made;
- Supports the educational director in communicating the results of the quality control cycle and his/her other duties in the context of quality control.

**Board of Studies and Study Programme Committee**
- Advise on quality and quality control issues pertaining to the various courses based on the P&C report (see above) upon request or at its own initiative.

**Examination Committee**
- Monitors the quality of the exams (see also: Examination Committee Duties and Responsibilities).

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### Appendix 9.J.B: STUDENT SURVEYS AND EVALUATION INTERVIEWS

Student surveys and evaluation interviews between block coordinators and/or P&C chairperson and students.

**Master Farm Animals/VPH**

<table>
<thead>
<tr>
<th>Block</th>
<th>digital survey</th>
<th>student interviews</th>
</tr>
</thead>
<tbody>
<tr>
<td>Block 1: focus on the animal (18 weeks)</td>
<td>3x p/year at the end of the block</td>
<td>3x p/year at the end of the block</td>
</tr>
<tr>
<td>Block 2: focus on the farm (4 weeks)</td>
<td>3x p/year at the end of the block</td>
<td>5x p/year at the end of the block</td>
</tr>
<tr>
<td>Block 3: farm ownership (20 weeks)</td>
<td>2x p/year on fixed dates</td>
<td>1x p/year</td>
</tr>
<tr>
<td>Block 4: MLP (5 weeks)</td>
<td>9-10x p/year at the end of the block</td>
<td>9-10x p/year at the end of the block</td>
</tr>
<tr>
<td>Block 5: V&amp;V (4 weeks)</td>
<td>3x p/year at the end of the block</td>
<td>3x p/year at the end of the block</td>
</tr>
<tr>
<td>Block 6: External courses (9 weeks)</td>
<td>Individually at end of clinical placement period</td>
<td>1x p/year</td>
</tr>
<tr>
<td>Basic clinical placement (10 weeks)</td>
<td>5x p/year at the end of the block</td>
<td>5x p/year at the end of the block</td>
</tr>
<tr>
<td>Senior clinical placement</td>
<td>2x p/year on fixed dates</td>
<td>1x p/year</td>
</tr>
</tbody>
</table>

**Master’s Programme Clinical Health of Companion Animals**

<table>
<thead>
<tr>
<th>Level</th>
<th>digital survey</th>
<th>student interviews</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 1 (25 weeks)</td>
<td>at the end of level 1</td>
<td>4x p/year with student representatives from levels 1 and 2</td>
</tr>
<tr>
<td>Level 2 (27 weeks)</td>
<td>at the end of level 2</td>
<td></td>
</tr>
<tr>
<td>Clinical minor (15 weeks)</td>
<td>To be decided</td>
<td></td>
</tr>
<tr>
<td>External courses (8 weeks)</td>
<td>2x p/year on fixed dates</td>
<td>1x p/year</td>
</tr>
<tr>
<td>Basic clinical placement (7 weeks)</td>
<td>at the end of each block</td>
<td>at the end of each block</td>
</tr>
</tbody>
</table>

**Master’s Programme Equine Health**

<table>
<thead>
<tr>
<th>Block</th>
<th>digital survey</th>
<th>student interviews</th>
</tr>
</thead>
<tbody>
<tr>
<td>Block 1: Reproduction (4 weeks)</td>
<td>1x p/year at the end of the block</td>
<td></td>
</tr>
<tr>
<td>Block 2: Neurology, behaviour, skin (4 weeks)</td>
<td>1x p/year at the end of the block</td>
<td></td>
</tr>
<tr>
<td>Block 3: Circulation, Respiration (4 weeks)</td>
<td>1x p/year at the end of the block</td>
<td></td>
</tr>
<tr>
<td>Block 4: Social (4 weeks)</td>
<td>1x p/year at the end of the block</td>
<td></td>
</tr>
<tr>
<td>Block 5: Musculo-skeletal system (4 weeks)</td>
<td>1x p/year at the end of the block</td>
<td></td>
</tr>
<tr>
<td>Block 6: Digestion, metabolism (4 weeks)</td>
<td>1x p/year at the end of the block</td>
<td></td>
</tr>
<tr>
<td>Block 7: Surgery (4 weeks)</td>
<td>1x per year at the end of the block</td>
<td></td>
</tr>
<tr>
<td>2+ 3= 2nd and 3rd round (levels 1, 2, 3) (28 weeks, 14 weeks, 15 weeks)</td>
<td>Students fill in digital survey 1x p/year at the end of the round.</td>
<td>At least 1x p/year more detailed, thorough evaluation meeting with student delegation.</td>
</tr>
<tr>
<td>External courses (8 weeks)</td>
<td>Each student fills in the survey at the end of the external course.</td>
<td>1x per year</td>
</tr>
<tr>
<td>Basic clinical placement (5 weeks)</td>
<td>Individually at the end of the clinical placement period for each group</td>
<td></td>
</tr>
</tbody>
</table>

Note: the clinical placements are currently discussed during the quality control meetings and the P&C meeting based on an evaluation by the MSPEC chairperson.
APPENDICES STANDARD 10

Appendix 10.A.: RESEARCH PROGRAMS

Biology of Reproductive Cells (BRC)

**Vision:** Economically, optimization of reproduction of large domestic animals is highly relevant for the breeding industry as well as to animal welfare. Scientifically, large domestic animals can also serve as models to address specific problems in human reproduction. For academic education of veterinarians, an environment with expertise in cellular aspects of reproduction is crucial.

**Mission:** The overall aim of the BRC program is to be an internationally leading research platform in reproductive cell biology and to provide answers to problems affecting or arising from reproduction in domestic animal species and man (one health, one medicine) by improving understanding of the mechanisms involved in gamete development, fertilization and embryogenesis, and by improving gamete/embryo storage. Embryonic cells are used to study the phenomenon of cellular pluripotency and to investigate how these cells can be made to maintain pluripotency.

**Key objectives:** To improve technologies for assisted reproduction by understanding the molecular, cellular and physiological mechanisms that are critical to key steps in (assisted) reproduction:
- Gamete development, maturation and preservation;
- Gamete interaction and fertilization;
- Embryo development, storage and implantation.

**Total Scientific Staff (2012): 10 FTE**

Tissue Repair (TR)

**Vision:** Acute or chronic tissue damage causes failure of organs or tissues which can often not be treated with traditional therapies. Tissue Repair investigates the pathophysiology of tissue dysfunction and potential mechanisms for repair, with focus on adult stem cell biology. The strategic goal is to develop new methods for stimulating regeneration and tumor prevention by delivery of essential cells and/or signals and/or biomaterials and to provide preventive strategies for degenerative diseases.

**Mission:** The overall aim of the TR program is to develop new stem cell based therapies to cure presently incurable diseases, and to develop preventive strategies for such diseases. Stem cell based therapies may include the use of signals such as growth factors and/or biomaterials. The program is interdisciplinary and exploits state-of-the-art technology. Strategic tools are the many spontaneous inherited larger animal diseases that on one hand, serve as reproducible translational models and, on the other, represent major health problems in animals for which TR finds preventive solutions on the population scale.

**Key objectives:** The program aims to find new signals and routes for novel stem cell based therapies for failing organs using molecular genetics and genomics, proteomics, lipidomics, cell biology and molecular pathology. Appropriate (inherited) diseases in larger animals are used to prove clinical applicability.

- To find new molecular signals for in vivo or ex vivo proliferation, differentiation and migration of adult stem cells;
- To apply and exploit newly discovered concepts in rodent models and zebra fish;
- To evaluate the clinical applicability of these concepts in larger translational animal models thereby advancing both veterinary and medical clinical practice.

**Total Scientific Staff (2012): 36 FTE**

Emotion and Cognition (E&C)

**Vision:** Quality of life of animals varies with animal’s adaptive capacity. Understanding of neural underpinning of motional states and cognitive abilities of animals is important to improve animal welfare. Mission: To aim to understand neural mechanisms underlying emotional states and cognitive processes in animals, and how these functions contribute to ability of animals to adapt to and cope with environmental states, changes and challenges. These adaptive capabilities are regulated by individual experiences (positive as well as negative) during development, in interaction with individuals’ genetic make-up.

**Key objectives:** To address the critical role of internal (genetic background, set-points of neural activity) and/or external factors (e.g. life events, impact of the environment) on processes that regulate the animals’ adaptive capabilities and through this, determine the animals’ perception of its state of welfare.
- To broaden our understanding of:
  - How animals perceive their own emotional state;
  - How this subjective perception develops over time;
  - How the animals’ subjective emotional perception affects its adaptive capacities within a changing environment.

**Total Scientific Staff (2012): 13 FTE**

Risk Assessment of Toxic and Immunomodulatory Agents (RATIA)

**Vision:** The common risk assessment ‘paradigm’ distinguishes hazard assessment, exposure assessment, dose-response assessments, risk characterization and visualization as essential elements of the risk assessment process. Risk assessment analysis may benefit from interdisciplinary research focused on risks of exposure to chemical, biological and physical agents in the general or specific veterinary public health environment.

**Mission:** RATIA program aims to improve the scientific basis for assessment of risk to humans, animals and ecosystems from exposure to potentially harmful agents in environment, occupational settings, through vaccination, and through the food chain. Important topics are zoonoses and microbial resistance in high risk populations with intense animal contact, food safety, occupational health issues in the animal feed industry and among veterinarians, the side effects of pharmaceuticals and vaccines and ecosystem health issues of various contaminants related to wildlife.

**Key objectives:**
- Exposure Assessment & Control: Identification and characterization of physical, biological and chemical factors in the environment relevant for human, animal and ecosystem health;
- Quantification of routes of exposure in different environments;
- Mechanism of Action & Dose-Response Assessment: Analysis of the availability, dose and mechanism of action of food and health products, pharmaceuticals, biotoxins and environmental contaminants in relation to their potential to induce adverse immune, neural and endocrine effects;
- Development of in vitro methods to reduce the animal use;
- Environment & Host Response Modulation: Unraveling of mechanisms of immune modulation by harmful agents in relation to chronic immune mediated diseases (e.g. allergies and autoimmune diseases);
- Environmental Epidemiology: Understanding of the relationships between exposure to biological, physical and chemical agents and health effects with a special focus on veterinary public health issues resulting from interactions between animals and humans.

**Total Scientific Staff (2012): 83 FTE**

Strategic Infection Biology (SIB)

**Vision:** Emerging infections and antimicrobial resistance are a major burden to human and animal health and the economy. We advocate that control of the spread of infectious agents and drug resistance requires knowledge of all aspects of the infection chain, i.e. from molecule to population. The Strategic Infection Biology (SIB) program is a key asset of the Infection Center Utrecht that strives to be a world class leader in fundamental and translational research that connects animals and human health.

**Mission:** The overall aim of the SIB program is to discover principles of infection at the cellular, individual, and population level to facilitate targeted development and implementation of novel infection intervention and prevention strategies. The multidisciplinary research approach that covers the entire spectrum from molecule to population and applies state-of-the-art technology provides a solid scientific basis for policy and products to reduce the burden of infection to society and thus to gain better animal and human health at lower costs.

**Key objectives:** Combining expertise on genomics/proteomics/lipidomics, microbial virulence, cellular infection mechanisms, innate and adaptive host responses, and infection dynamics. This strong multidisciplinary setting is applied to address three key aspects of infection:
- Biology that drives the cellular infection and host cell pathology for selected sets of pathogens (e.g. nidoviruses, influenza virus, Campylobacter, Salmonella);
- Modulation of innate and adaptive host immune responses towards pathogens;
- Key elements of infection dynamics i.e. factors that determine transmission, genome plasticity, microbial adaptation, and emergence of infections.

**Total Scientific Staff (2012): 76 FTE**

Advances in Veterinary Research (AVR)

**Vision:** AVR is an important source of high level evidence-based veterinary medicine for worldwide application. FVM veterinary specialists are involved in the translation of veterinary evidence towards use in society, with specific focus on the establishment of (inter)national clinical guidelines.
Mission: Overall aim of the AVR program is to maintain the broad spectrum of veterinary specializations at FVM at a high level, by supporting research training of residents, as well as providing research time for the maintenance of the board certification of the permanent staff. In addition, AVR is the research program of FVM to address important emerging topics in the field of veterinary medicine.

Key objectives:
- Providing research time for residents and permanent staff in those specializations that are not covered by the thematic programs;
- Publishing results of research in the clinical veterinary and public health domain, to provide high level scientific evidence to the international veterinary community;
- Using professional networks of FVM veterinary specialists to identify potentially interesting new areas of research (also for the thematic programs);
- Providing knowledge to emerging issues in society, and translate knowledge gaps into relevant (fundable) research questions;
- Supporting the Royal Netherlands Veterinary Association (KNMvD) in the development of official Dutch veterinary clinical guidelines;
- Support non-veterinary stakeholders (i.e. animal & livestock owners, animal production chains, food industry, wild life & leisure) with relevant knowledge.

Total Scientific Staff (2012): 33 FTE

FUTURE POSITION OF RESEARCH PROGRAMS AS DESCRIBED IN THE STRATEGIC PLAN

### Appendix 11

#### Appendix 11A: TABLES

<table>
<thead>
<tr>
<th>Competency</th>
<th>Average C2001+C2007 (n=45)</th>
<th>Average C2001 (n=30)</th>
<th>Average C2007 (n=15)</th>
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<tbody>
<tr>
<td>Diagnostic skills</td>
<td>3.59</td>
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<tr>
<td>Treatment planning and patient referral</td>
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<td>3.52</td>
<td>3.67</td>
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<tr>
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<td>3.67</td>
<td>3.64</td>
<td>3.67</td>
</tr>
<tr>
<td>Knowledge of health promotion, disease prevention/hygiene, zoonosis, and food safety</td>
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<td>3.6</td>
<td>3.79</td>
</tr>
<tr>
<td>Appropriate use of clinical laboratory testing</td>
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<td>3.63</td>
<td>3.73</td>
</tr>
<tr>
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<td>3.79</td>
<td>3.71</td>
</tr>
<tr>
<td>Record management</td>
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<tr>
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Table 1: The current status of the graduates who were interviewed

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<thead>
<tr>
<th>Competency</th>
<th>Companion Animals (n=14)</th>
<th>Farm Animals (n=22)</th>
<th>Equine (n=9)</th>
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</thead>
<tbody>
<tr>
<td>Diagnostic skills</td>
<td>3.69</td>
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<td>3.33</td>
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<tr>
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<td>3.59</td>
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Table 2: Mean scores competencies, overall and per curriculum. In yellow scores between 3.0-3.5, in red scores < 3.0

<table>
<thead>
<tr>
<th>Competency</th>
<th>Evidence-based Veterinary Medicine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Veterinary Practice</td>
<td>Veterinary Practice</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>One Health</th>
<th>One Medicine</th>
<th>Veterinary Biomedicine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk Assessment</td>
<td>Infection immunity</td>
<td>Reproductive Medicine Stem Cells &amp; Cancer</td>
</tr>
<tr>
<td>(PA)</td>
<td>(IBI)</td>
<td>(FIMSCC)</td>
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<tr>
<td>Behaviour &amp; Welfare</td>
<td>Fertility &amp; Reproduction</td>
<td>Applied Veterinary Research</td>
</tr>
<tr>
<td>(BRW)</td>
<td>(FR)</td>
<td>(AVR)</td>
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</tbody>
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