SZENT ISTVÁN UNIVERSITY

FACULTY OF VETERINARY SCIENCE, BUDAPEST

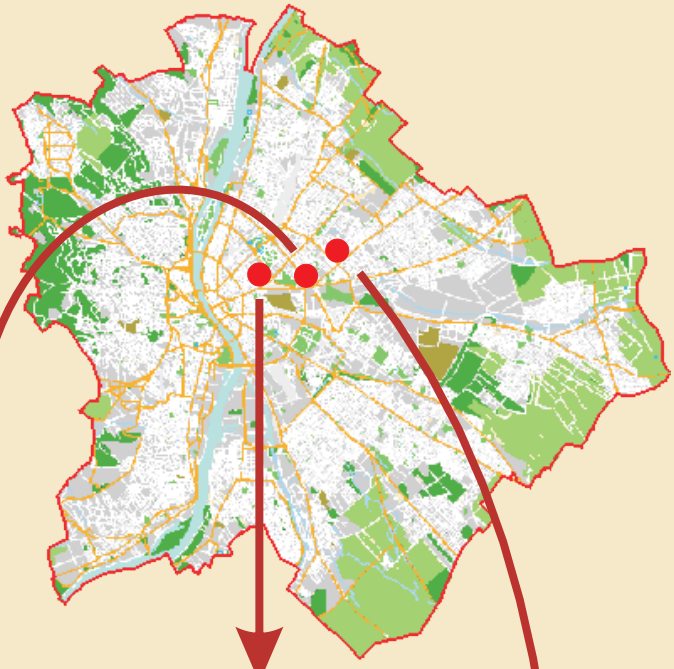
Self Evaluation Report One (SER 1)

for the

European Association of Establishments for Veterinary Education

Budapest
December 2013

Budapest



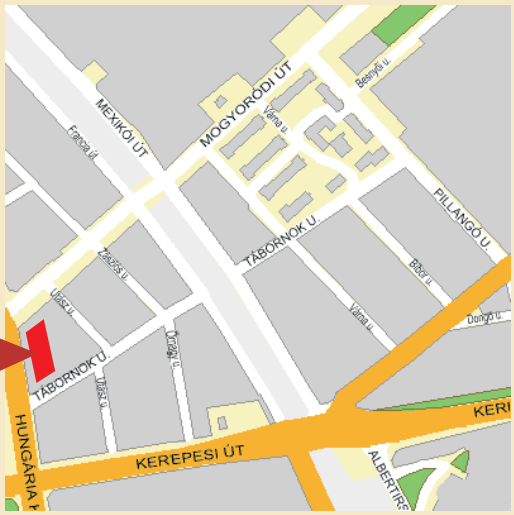
Gödöllő

Szent István University
(Gödöllő, 30 km East of Budapest)

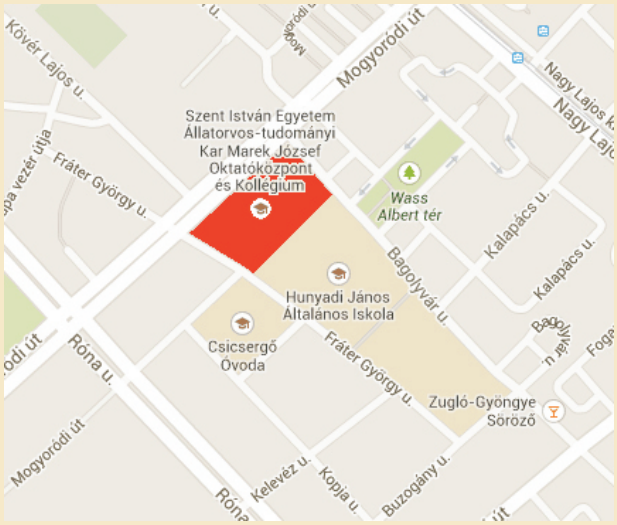
Üllő

Large Animal Clinic and Commercial Farm
(Üllő, 30 km South-East of Budapest)

Main Campus
(István Street)



Department of Microbiology and
Infectious Diseases (Hungária Street)



Marek József Training Centre and Student Hostel
(Mogyoródi Street)

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LIST OF ABBREVIATIONS

EAEVE	European Association of Establishments for Veterinary Education
FVSB	Faculty of Veterinary Science Budapest
LAC	Large Animal Clinic
SAC	Small Animal Clinic
SZIU	Szent István University

INTRODUCTION

Please provide an outline of the main features of the history of the Faculty in the period since the last evaluation visit or, if there has not been a previous visit, in the last ten (10) years.

It should cover:

- the main organisational changes
- new regulations relating to teaching
- new buildings or major items of equipment
- main changes to the study programme
- important decisions made by the management of the Faculty, or by the authorities responsible for it
- major problems encountered by the Faculty, whether resolved or not

The Faculty of Veterinary Science Budapest (FVSB) was founded in 1787 as an Institute and Chair for Animal Healing and Epidemiology of the Medical Faculty of the University of Pest (former name of Budapest). The legal status of the school was changed several times: for a long time it was part of the Medical Faculty, later it became independent, then it was part of the University of Technology and Economics 'Palatine Joseph', the Hungarian University of Agriculture and after a few decades (from 1851) of independent operation as College of Veterinary Science and then as University of Veterinary Science, from 2000 it is the Faculty of Veterinary Science of Szent István University (SZIU). SZIU has seven faculties and it is mainly oriented to agriculture and rural development. Although the name and the position of the school changed several times, the mission of training veterinary students has not changed, and the school has been working continuously without interruption for more than 225 years in spite of wars, revolutions, uprisings and political changes.

At the FVSB two types of training are available: (*i*) veterinary training is an 11-semester-long undivided master-equivalent course and (*ii*) BSc and MSc levels are offered in biology. A specialty of our school is that we have been teaching veterinary students in three languages for nearly 25 years. Complete training is provided in Hungarian and English, while the subjects in the first two years of the model curriculum are taught in German as well. From the third year students of the German class can join the English one.

Teaching highly trained veterinary students who are capable of working in any field of the veterinary profession, doing research at an internationally comparable level and providing high-quality service to the public have always been the priority of the faculty. Since the FVSB is the only veterinary school of Hungary, it has always been internationalised, our teaching, research and service activity has been compared with that of the partner schools in Europe and overseas. This internationalisation was manifested *inter alia* in the fact that our school was among the first institutions that were evaluated for the first time in 1995 by the European Association of Establishments for Veterinary Education (EAEVE). No major deficiencies had been found by the evaluation; however, most of the suggestions of the visiting team were adopted by the management of the school. The subsequent evaluation, which took place nine years later, between 19 and 25 April 2004, identified two major (category 1) deficiencies, (*i*) lack of a mobile clinic and (*ii*) insufficient clinical training.

Rectification of these deficiencies was an absolute priority for the school. A mobile clinic service was set up under the umbrella of the Large Animal Clinic (LAC) within a few months after receiving the report of the EAEVE. A Ford minibus capable of transporting 8 students was bought, equipped with the necessary instruments and a veterinary surgeon was hired to this job. Agreements with two large-scale farms in the vicinity of the LAC were signed and a rotational programme was created. Before 2004 young graduates were employed by the Ministry of Agriculture just after receiving their diploma for one year, and this extra year was devoted to practical, mostly clinical training. Just at the time of the EAEVE visit in 2004 this extra training was finished and the visiting team considered our clinical training without this extra year to be insufficient. In order to rectify this deficiency the management of the Faculty supported by the rector of the university started a long fight to convince the Ministry of Education to extend the study by one year. This seemed to be a longer process, so as an immediate reaction a new clinical rotation programme was introduced. Since that time students of the 4th and 5th years regularly have to spend day and night shifts at the different sections of the Small Animal Clinic (SAC) and the LAC. A few semesters after introducing the mobile clinic and the new clinical rotation system the school asked for a revisit, which was carried out on 18 and 19 December 2006 by the chair of the visiting group, Prof. Luca Rossi. The FVSB could present several-semester-long records of the mobile clinic and the new clinical rotation system. As a result of the positive report of the revisit, at its meeting held on 17 and 18 April 2007 the Joint Education Committee approved our Faculty again.

Over the past ten years there have been several changes at the Faculty. The most noteworthy event was the opening the new SAC. After large animals had been moved to the then newly opened LAC in Üllő, in 2001 the former large animal hospitals offered space for a new enlarged and integrated SAC, which was opened in 2006. In recent years the new Obstetrics Lecture Hall, the Students' Centre and a new Anatomy Teaching Centre have been opened, the Aula Magna (Central Hall) has been modernised and the Department of Anatomy and Histology and the Department of Pathology have been reconstructed and enlarged.

There were some organisational changes at the Faculty; however, the outline of the structure has mainly remained. Some formerly independent departments have been merged, e.g. the Department of Botany and the Department of Ecology were incorporated in the Institute of Biology. To intensify the clinical teaching and clinical service, a new position of the Vice Dean for Clinical Affairs has been recently created.

The Faculty management had several discussions with high-ranking representatives of the Ministry of Agriculture and Rural Affairs and the Ministry of Education in recent years to extend the length of the study to 6 years. This activity was partially successful, since the length of the study as of 2006 became extended by one semester. This extra semester is devoted exclusively to practical training. The new curriculum, changing also the system of the final examination, was introduced from the academic year 2009/2010.

Teaching at universities is regulated by the new National Higher Education Act (Act CCIV of 2011) and several government decrees. The rules are continuously changing and both the university and the Faculty have to adapt their internal regulations accordingly. Unfortunately, the financial support of higher education from the state was considerably cut in the past few years and pressure on the university and the faculties to enhance their own income has been increased. The new National Higher Education Act created a new category, 'Research Faculty', in order to appreciate the outstanding work done in the field of science and innovation, and the FVSB applied for it. It is a great acknowledgement that the FVSB was one of the four faculties in Hungary that received this title.

Chapter 1. OBJECTIVES

1.1 FACTUAL INFORMATION

Indicate whether there is an **official list of the overall objectives** of the Faculty.

If this is the case; please indicate these.

- Who determines the official list of objectives of the Faculty?
- By what procedure is this list revised?
- Do you have a permanent system for assessing the achievement of the Faculty's general objectives? If so, please describe it.

If there is no official list, please indicate the objectives that guide the Faculty's operation.

The objectives of the FVSB are summarised in its mission statement. The mission of the school is in full accordance with the principles declared by the Magna Charta of European Universities, the tradition of the 225-year-old Hungarian veterinary education and the European Directive (2005/36/EC) on veterinary education. Accordingly, the FVSB promotes the cultural and scientific development, serves the under- and postgraduate and continuing professional education of future generations of veterinarians and biologists with the ultimate goal of reconciling within its own field the satisfaction of human needs with the preservation of harmony between Man and Nature. The FVSB was founded on the principle of the inseparable entity of teaching, research, and service.

Having originated from medical education, the veterinary profession still has constant goals like the prevention of animal diseases, therapeutic interventions in farm and companion animals, the promotion of animal welfare, as well as guaranteeing the quality and safety of the food chain. However, these constant goals are influenced by ever changing needs which greatly affect veterinary training. Since the veterinary profession covers a wide range of activities with different types of factual knowledge, subject-related and general competences, the veterinary teaching programme of our Faculty helps students gain and develop these competences. Additionally, the instruction should also develop the students' capacity for self-learning and applying knowledge in practice.

The FVSB offers a solid, scientifically based, subject-oriented education that can serve as a basis of problem-based learning. There is no undergraduate specialisation; however, a wide scale of electives and different emphasis in practical training help to meet the interest of the students. On the other hand, specialisation in all major areas of veterinary medicine is offered at postgraduate continuing education level.

The Faculty aims to graduate general veterinarians with a basic (Day 1) competence enabling them to get a job as a veterinary surgeon and to apply their knowledge in practice. Graduates should have the ability to learn, to analyse and to synthesise facts; to recognise the abnormal; to analyse symptoms, lesions, predisposing factors; to reach a correct diagnosis and to plan a strategy for treating, preventing, or controlling the disease. Graduates have to gain a holistic view on food production in order to be able to control the whole food chain from farm to fork. Knowing their responsibility for public health, according to the 'one health concept', graduates have to recognise the critical points of veterinary public health, as well as analyse and manage the risk factors. They have to be able to understand animal welfare issues of farm, companion and laboratory animals. Graduates should possess the necessary practical skills to implement treatments and operations either autonomously or within a team, and also possess an interest in continuing their professional development (lifelong learning) and communication skills in a professional community and in society. In a small country like Hun-

gary, the necessity of written and oral proficiency in at least one foreign language, preferably English, is inevitable and is a precondition for graduation from the FVSB.

According to the National Higher Education Act the university is autonomous, thus ensuring the freedom of teaching and research. The Faculty has a wide autonomy within the university. The objectives, the teaching programme and the curriculum are defined and modified by the University Senate on the basis of the suggestions of the Faculty Council. The objectives of the Faculty are available on its homepage. The teaching programme in a condensed form is published in an annual information booklet, as well.

There are permanent quality assurance systems for assessing the achievement of objectives set by the FVSB. On one the hand, the Hungarian Accreditation Committee (HAC) regularly examines the school and carefully analyses the achievement of its objectives. Last time the FVSB was accredited by the HAC in 2012 and it received 'Grade A', the highest grade. Furthermore, a few years ago the Faculty introduced an ISO 9001:2009 quality assurance system. In the framework of the annual audit run by this quality assurance system, the achievement of the objectives of the FVSB is regularly evaluated. The results are reported to the management of the Faculty and the Faculty Council, giving a good opportunity for the Faculty Council to discuss the issue thoroughly every year.

1.2 COMMENTS

In your view, to what extent are the objectives achieved? What, in your view, are the main strengths and weaknesses of the Faculty?

The general objectives of the FVSB do not show major changes; however, the emphasis can be modified. Since the FVSB is the only veterinary school of Hungary, it has a great responsibility not only to the students and graduates but also to the profession and to society as a whole. The main objective of the school is training veterinary surgeons, who are able and will be able even in 40–50 years, to work at any area of the profession. For this reason, undergraduate training aims to provide solid, comprehensive and competitive scientific knowledge together with the necessary practical skills, which can serve as a basis for developing the professional experience of graduates and their interest in lifelong learning. In this aspect the teaching and learning methods used at our Faculty enable the students to achieve the intended learning outcomes/required competences.

Main strengths of the Faculty

The FVSB has several strengths. The dedicated staff, the highly qualified, internationally acknowledged academic staff, the high number of well-qualified applicants result in outstanding human resources. The multilingual and multicultural environment, the social reputation and the wide international connections create a very inspiring atmosphere at the school. The central location is very advantageous from the point of view of small animal practice, while the excellent position of the Large Animal Clinic is ideal for horse and farm animal practice. Being the only veterinary school of the country, most of the veterinarians in Hungary are graduates of the FVSB, which is the basis of the excellent connections with the profession, the Hungarian Veterinary Chamber, the Ministry of Rural Development and the different professional organisations.

Main weaknesses of the Faculty

A part of the weaknesses comes from the fact that the FVSB is the only veterinary school of Hungary and it is centrally located. There are too small research groups, which makes project activity difficult. The workload of the academic staff members is very high, but

the remuneration is not competitive. The central location is not advantageous from the point of view of project applications, because this region is frequently not supported. A weak point is that only one practical semester was granted by the government. The infrastructure is old; it is very expensive to maintain it.

1.3 SUGGESTIONS

If you are not satisfied with the situation, please list your suggestions for change in order of importance and describe any factors which are limiting the further development of your Faculty.

Understanding the importance of well-trained veterinarians in society the financial support of the school should be increased, resulting in

- increase in the number of personnel
- decreased workload on teachers
- increased capacity in research
- greater competitiveness in research and project activities
- further improvement/reconstruction of the infrastructure.

An additional semester would help a lot to improve the practical training of the graduates and it would give more space to introduce more tracks in practical training.

Chapter 2. ORGANISATION

2.1 FACTUAL INFORMATION

Details of the Faculty

Name of the Faculty: Faculty of Veterinary Science (Állatorvos-tudományi Kar)

Address: H-1078 Budapest, István u. 2, Hungary (H-1400 Budapest, P.O. Box 2, Hungary)

Telephone: (+36-1) 478-4103, (+36-1) 478-4104

Fax: (+36-1) 478-4105 Website: www.univet.hu

E-mail: dekan@aotk.szie.hu

Title and name of head of the Faculty: Prof. Péter Sótonyi (Dean)

- Is the Faculty within a university? If so, please give address of the university.

Szent István University (Szent István Egyetem), H-2101 Gödöllő, Páter Károly u. 1, Hungary

- Details of the competent authority overseeing the Faculty.

Ministry of Human Resources, Budapest, V. Szalay u. 10–14, Hungary. Phone: (+36-1) 795-1200, Website: http://www.kormany.hu/en/ministry-of-human-resources

- Indicate the rules concerning the appointment of the elected officials of the Faculty (Dean, Vice Dean, Heads of Department, etc.)

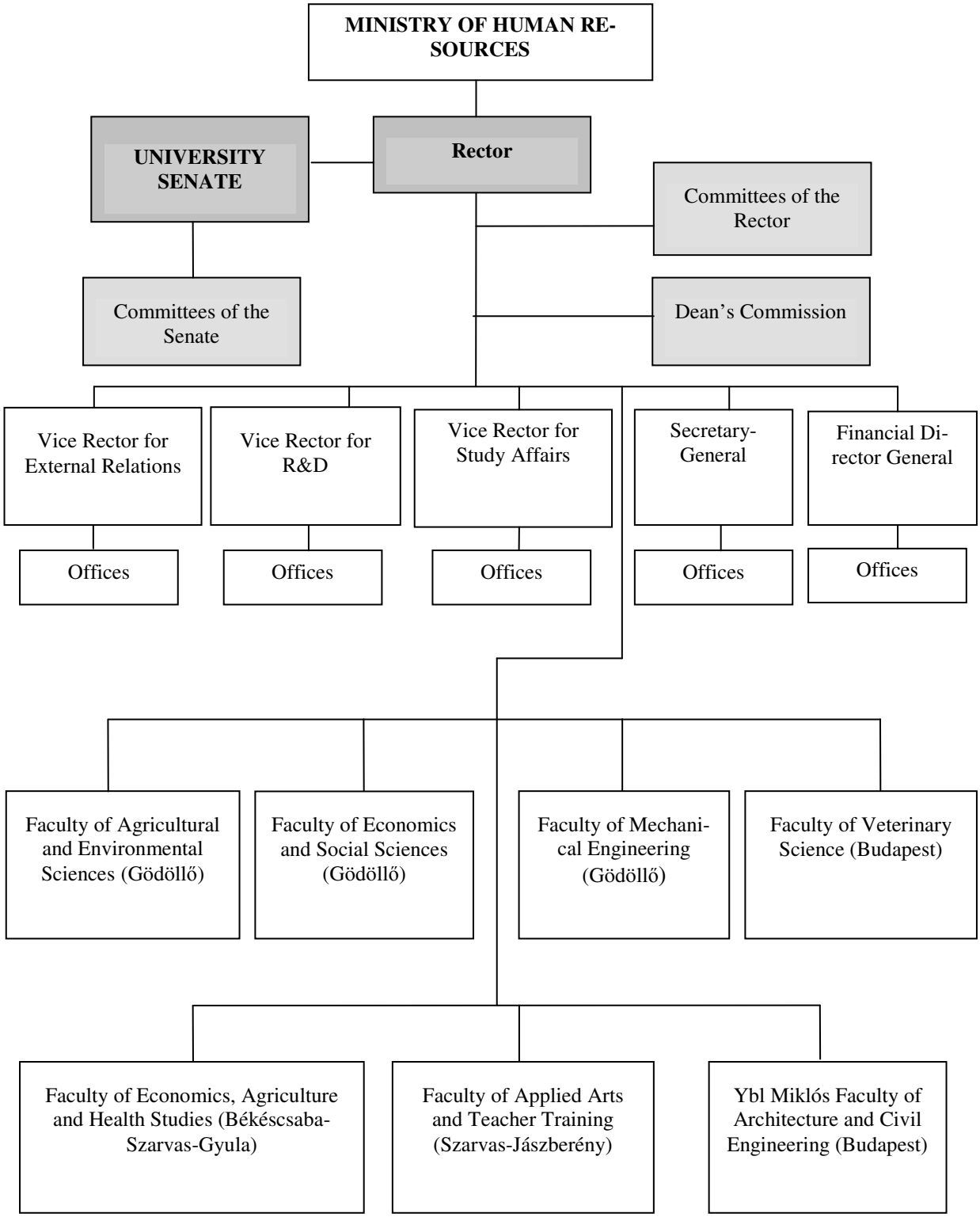
Dean: full professors of the Faculty are eligible to apply for the four-year position which is announced in official journals. The Faculty Council elects someone by secret ballot from the candidates and puts forward a proposal to the University Senate for approval. The Dean is appointed by, and reports to, the Rector. One re-election is possible.

Vice Deans: after application, vice deans are nominated by the Dean for his term, with approval of the Faculty Council. Formal appointment is made by the Rector.

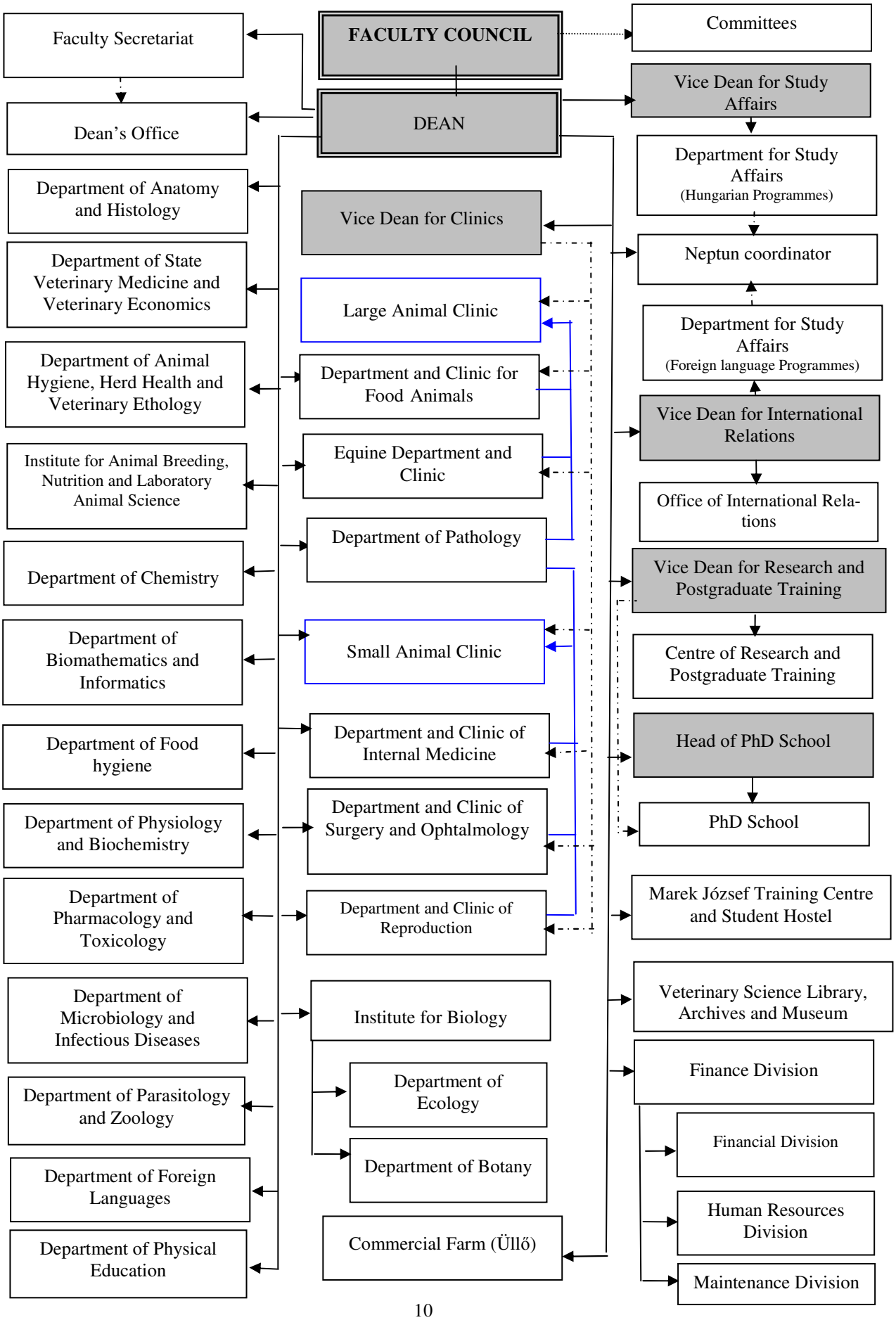
Department Heads: after application, candidates are elected by the Faculty Council and the University Senate for three- and five-year terms. Re-elections are not limited, but in cases of re-elections, 2/3 majority votes are required; formal appointment is made by the Rector.

- Provide a diagram of the administrative structures showing the Faculty in relation to the university and ministerial structure of which it is part.
- Provide a diagram of the internal administrative structure of the Faculty itself (councils, committees, departments, etc.).

Organizational chart of the SZIU



Organisational chart of the Faculty of Veterinary Science as of 1 Sept. 2013



- Describe briefly the responsibilities, constitution and function of the main administrative bodies (councils, committees etc.)

The highest decision-making body of the university is the University Senate comprising 44 persons, which is chaired by the Rector whose mandate is for 3–5 years. Within the Senate, the FVSB is currently represented by six members: 4 elected academic Faculty members, 1 student, and 1 elected administrative staff member who was elected by the whole administrative staff of the University.

The principal decision-making body of the Faculty is the Faculty Council. The Dean is chairing the council *ex officio* and further 19 members are elected to represent different stakeholder groups within the Faculty (10 from professors, associate professors, scientific advisors, and senior research fellows, 3 from senior lecturers, research fellows, junior research fellows, research assistants and clinical veterinarians, 1 from the administrative staff, 6 from the student body (5 undergraduates including 1 foreign student and 1 PhD student) [see details on page 91]). The Faculty Council elects several committees (listed in a separate table) which report to the Faculty Council.

The Dean manages the main academic area and ensures the interaction between study programmes and research. He is responsible for the quality of study programmes and teaching as well as the cross-disciplinary development of the quality of study programmes and research. The Dean performs his tasks in close collaboration with the Faculty Management and by delegating responsibility to the Vice Dean for Study Affairs, the Vice Dean for Research and Postgraduate Training, the Vice Dean for Clinical Affairs, the Vice Dean for International Relations and the department heads of the different areas.

There are several permanent committees that advise the Dean and the Faculty Council (listed in a separate table). Although standing and *ad hoc* committees and councils have no decision-making right, important issues cannot be put forward to the Faculty Council meeting agenda unless they are previously prepared and discussed by the relevant committee/advisory body.

Permanent Committees nominated by the Faculty Council

Hungarian name of the Committees	**English name of the Committees**
Tanulmányi Bizottság	Study Affairs Committee
Oktatási és Akkreditációs Bizottság	Education and Accreditation Committee
Posztgraduális Képzés Bizottsága	Postgraduate Education Committee
Tudományos Kutatási Bizottság	Research Committee
Nemzetközi Kapcsolatok Bizottsága	International Relations Committee
Idegennyelvű Képzés Bizottsága	Foreign Language Programme Committee
Gazdasági és Költségvetési Bizottság	Economy and Budget Affairs Committee
Munkahelyi Állatkísérleti Bizottság	Animal Experimentation Committee
Etikai Tanács	Ethical Council
Klinikai Tanács	Clinical Council
Hallgatói Fegyelmi Bizottság	Student Disciplinary Committee
Tudományos Diákköri Tanács	Council of the Scientific Students' Association
Minőségügyi Bizottság	Quality Management Committee
Kari Hallgatói Felülbírálati Bizottság	Student Appeals Council
Diákjóléti Bizottság	Student Welfare Committee
Hallgatói Véleményezési Bizottság	Student Committee for the Evaluation of Education

The teaching departments and students are supported by some other service units like the 'József Marek' Training Centre and Student Hostel, the Office of International Connections, the Secretariat for International Study Programmes, the Centre of Research and Postgraduate Training, and the Veterinary Science Library, Archives and Museum.

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

Universities are by law autonomous, thus neither professional bodies nor the public can influence directly the running of the establishment. However, because of the special responsibility of the Faculty, it always conducts informal dialogue with different professional bodies (the Hungarian Veterinary Chamber, the Hungarian Veterinary Association, the Veterinary Committee of the Hungarian Academy of Sciences) and with the state veterinary service (Department for Food Chain Supervision and State Secretary for Food Chain Supervision and Agricultural Administration of the Ministry of Rural Development, National Food Chain Safety Office, etc.). The Faculty has good informal connections with the general public as well. Staff members are frequently involved in different national associations, committees and are invited speakers at their meetings and are regular authors of the local journals.

There are two official levels where the veterinary profession and the general public are involved. One of them is the county chief veterinary officer, the other is the actual director of the Veterinary Diagnostic Directorate of the National Food Chain Safety Office, Budapest, and the third person is a chief veterinarian in one of the largest agricultural enterprises in Hungary. They can make suggestions at any time directly to the Faculty or through the Rector. Suggestions related to the training programme are first discussed and approved by the Education and Accreditation Committee, then forwarded to the Faculty Council and the University Senate. The members of the Ministry of Rural Development, the Hungarian Veterinary Chamber, the National Food Chain Safety Office, the county chief veterinary officers and other organisations take part in the evaluation of the education programmes as well as in the State Examination Commission of undergraduate and postgraduate students. Their participation in the Postgraduate Education Committee and in the state examinations is very helpful in maintaining the quality of education and adjusting the teaching process to the actual needs of the job market.

The general public is always informed about our activities through different channels, e.g. press releases about conferences or any other important events, an open day for secondary school students who want to become veterinarians, an open day for animal lovers, the Night of Museums, the Night of Researchers, etc. These annual events have quite good attendance and media coverage. The feedback from these actions is very favourable.

2.2 COMMENTS

Add any comments on the organisation and functioning of the Faculty that you feel useful for completing the description.

The Faculty retains a certain degree of autonomy; however, it should be mentioned that most decision-making procedures have become rather complicated at the University as compared to the time before 2000 when the Faculty was an independent university. Not being able to have an own bank account seems inappropriate in view of the previous autonomy of the establishment, particularly considering the fact that the Faculty itself has to generate most of its income.

The quality management system was introduced in 2011/2012, enhancing a co-ordinated quality improvement in education and in other fields of the Faculty.

The new Dean elected in 2012 nominated four vice deans (for study affairs, clinical affairs, international connections, and research and postgraduate training) for the Faculty Council to approve. The Vice Dean for Clinical Affairs, as the newest position, is responsible not only for the supervision of the SAC and LAC, but also for the organisation and operation of the 11th semester which was introduced in 2011 as a fully practical 26-week term.

The internal administrative structure of the Faculty has partly changed. Since the spring of 2013 the Secretariat for International Study Programmes has been under the supervision of the Vice Dean for International Relations.

2.3 SUGGESTIONS

If you are not satisfied with the situation, please list your suggestions for change in order of importance and describe any factors which are limiting the further development of your Faculty.

The FVSB is unsatisfied with the current university structure. We feel that SZIU is not the proper umbrella for our Faculty for many reasons. As a result of an overall merging process in Hungarian higher education (in 2000) the formerly independent University of Veterinary Science has been integrated with some other establishments of Hungarian higher education to create a larger unit. The major indicators and the achievements of our community (maintaining a research-based, internationally competitive intellectual environment) are markedly different from those of the merging partners. Therefore, the Faculty is working on the opportunity to regain its autonomy and to function as an independent higher education institution. In addition to its progress in the training, scientific research and services to the public, the Faculty has also established a self-supportive financial mechanism which further strengthens the arguments to regain the original status and to work as some of our European counterparts (e.g. Hanover and Vienna).

Chapter 3. FINANCES

3.1 FACTUAL INFORMATION

3.1.1 GENERAL INFORMATION

Indicate whether the Faculty's current financial model (system) meets the Faculty's mission.

In addition please specify:

- How the allocation of funding (including public funding) to the Faculty is determined, and by what body.
- If the allocation of funds, or any significant proportion of it, is linked to a particular factor (e.g. student numbers, research output), please describe this.
- How the basis for funding the Faculty compares with those teaching other courses (e.g. whether veterinary training receives a higher budget weighting compared to other disciplines). How the allocation of funds within the Faculty is decided.
- What are the mechanisms for funding major equipment and its replacement?
- The mechanism(s) for funding capital expenditure (e.g. building work, major items of equipment) and how decisions are taken in this matter.
- The mechanism(s) to provide the necessary support for building maintenance and how decisions are taken in this matter.

Despite the continuously decreasing governmental funding, the sharper national and international education market competition and the changing legal circumstances the Faculty's current financial system meets the FVSB's mission, that is, it ensures the continuous improvement in both education and research with proper operation and long-term financial stability of the Faculty.

The main government funding comes from a grant determined by the Ministry of Human Resources, where the cost of the different disciplines is taken into account. The maximum number of admitted students funded by the state is determined by the Ministry. The state support of the SZIU was 6,903,000 thousand HUF (23,803,448 EUR) in 2012 and on the basis of an accepted algorithm the FVSB received 764,045 thousand HUF (2,634,638 EUR). (The exchange rate of 290 HUF/EUR was taken into account in the whole chapter while evaluating the data in EUR). This allocation is based on the number of state-subsidised students and differences in the cost of trainings. Veterinary medicine was regarded as the most expensive training. The budget is decided by the University Senate.

There are guidelines from the University regarding the way the state subsidy shall be used in the Faculty budget. However, except the sum which has to be devoted to the University supporting common tasks, based on an agreed-upon algorithm, the Faculty is basically free in how to use its own resources, and in general decides upon its own budgetary matters. At the FVSB, after deduction of staff and central Faculty operating costs (such as utilities and building maintenance), the Dean, the Vice Deans and the Financial Manager discuss budget proposals for the departments in relation to factors such as teaching duties, number of student diploma projects etc., and put forward a draft budget for the Faculty Council and the University Senate to adopt.

Each department has its own budget. All finance is administered through a single University account. A request by the Faculty to retain its own former bank account was refused. After each fiscal year a Budget Report must be submitted and is audited. The budgets are managed and administered by the Faculty Financial Manager, who reports to the Director of Finance of the University and to the Dean. The LAC at Üllő has a separate budget line. The Commercial Farm at

Üllő is also on a separate budget heading, at the same time the SAC has no separate budget line (it consists of three clinical departments).

Over the past 15 years (since 1998) there has been no budget available from the Ministry for any capital projects, such as building, renovation, purchase or replacement of major items of equipment, except for unavoidable work (e.g. for health and safety reasons). Any investment has to be funded through own resources (own income, research projects etc). In recent years the Faculty focused on construction, renovation of old campus buildings, improvement of building maintenance and development of equipment. In 2012 a huge procurement project of new research and educational equipment was conducted at the Faculty. With the title of 'Research Faculty' the FVSB received an extra sum of 92,812,000 HUF/year (320,041 EUR/year) which was allocated on the basis of research output. Further allocation of the above sum is mostly based on an internal, competitive grant system.

3.1.2 INFORMATION ON EXTRA INCOME

What percentage of income from the following sources does the veterinary teaching Faculty have to give to other bodies (university, etc.)?

- clinical or diagnostic work:
- research grants:
- other (please explain):

Please indicate whether students:

- pay tuition/registration fees,
- how much these are,
- how they are decided,
- how the funds are distributed.

State funding is by far not enough to finance the operation of the Faculty; hence, revenue generated by the FVSB itself is the main part of income, which amounts to 80% of the total revenue in 2012. The own income comes from various sources.

Besides the state-funded students it is possible to admit Hungarian candidates paying tuition fees, but their number is quite low (only 5–7% of the stated-funded students in the Hungarian class), because the tuition fees are quite high compared to the Hungarian average salaries. Hungarian students pay a tuition fee of 1,150,000 HUF/semester (3,966 EUR) that also does not cover all the costs incurring.

The Faculty is unique among the European Establishments for Veterinary Education because the education is conducted in three languages: Hungarian, English and German; additionally, the majority of the students (58%) is international. The international students pay 10,980 EUR (3,184,200 HUF) tuition fee yearly, and the income coming from this is the largest part of the Faculty's own revenues (1.8–2.2 billions HUF/year [6.2–7.6 million EUR], 70–80%). It is vital in maintaining the financial stability of the Faculty. The Faculty also provides continuing education courses subject to fees, and thus it generates some net income, which is used for supporting doctoral courses and the library. The revenues generated by clinical and laboratory services are also important, but these sources are mainly used to cover the operational and maintenance costs of the clinics and departments involved. The surplus can be allocated to replace and procure the equipment or to develop the infrastructure of the units.

Another, more and more important source of revenue is from the R & D and innovation activities. From 2010 to 2012 the Faculty had obtained financial supports from 156 applications and research projects, out of which 116 were national, 29 international and 11 co-funded ones. Since 2006 the financial crisis has greatly decreased the real value of the available state R & D grants, so the focus of the Faculty has shifted to both the international, mainly EU grants and the R & D projects of enterprises, therefore the role of applied research has greatly increased.

The financial management guidelines for the Faculties are defined by the Senate of the SZIU. The Senate decides about what rate of the common administration costs shall be borne by the Faculty. The apportionment of the common university costs between the faculties is based on the number of students, that of employees and the share of revenues with a weight of one-third. However, over the share of common university costs, the Faculty is free to decide how to use its own resources.

3.1.3 OVERVIEW OF INCOME (REVENUE) AND EXPENDITURE

The income and expenditure of the FVSB are summarised in Tables 3.1–3.2, expressed in both HUF and EUR.

Table 3.1a. **Income/Revenue (1000 HUF)**

	State (government)		Income generated by the Faculty		Total
Year	To university administered outside the Faculty	Direct to Faculty	Income from services provided	Research	
2012	42,702	721,343	2,913,730	218,691	3,896,466
2011	56,962	773,464	2,681,199	224,152	3,735,777
2010	57,668	938,484	2,417,572	205,599	3,619,323

Table 3.1b. **Income/Revenue (EUR)**

	State (government)		Income generated by the Faculty		Total
Year	To university administered outside the Faculty	Direct to Faculty	Income from services provided	Research	
2012	147,248	2,487,390	10,047,345	754,107	13,436,090
2011	196,421	2,667,117	9,245,514	772,938	12,881,990
2010	198,855	3,236,152	8,336,455	708,962	12,480,424

Table 3.2a. **Expenditure (1000 HUF)**

Year	Pay	Non-pay				Total
	Salaries	Teaching support	Research support	Clinical support	Other[1)]	
2012	1,820,011	1,475,252	162,963	193,225	311,669	3,963,120
2011	1,770,491	779,370	172,267	176,796	564,662	3,463,586
2010	1,671,130	815,143	151,057	157,241	352,827	3,147,398

[1)] operating costs

Table 3.2b. **Expenditure (EUR)**

Year	Pay	Non-pay				Total
	Salaries	Teaching support	Research support	Clinical support	Other[1)]	
2012	6,275,900	5,087,076	561,941	666,293	1,074,721	13,665,931
2011	6,105,141	2,687,483	594,024	609,641	1,947,110	11,943,400
2010	5,762,517	2,810,838	520,886	542,210	1,216,645	10,853,097

[1)] operating costs

Please note that some of the information requested might not be available to all Faculties; in these cases indicate 'not applicable' with some explanatory remarks.

3.2 COMMENTS

- Teaching establishments never have enough finance. Please comment on any of the 'Guidelines and Requirements' that are particularly difficult to fulfil in the present financial situation. Please make any comments that you feel would help the experts concerning the Faculty's finances.
- What is your number one priority for the use of any increased funding?
- Comment on the degree of autonomy and flexibility available to the Faculty in financial matters.
- Comment on the percentage of income from services that the Faculty is allowed to retain for its own use, and in particular on the extent to which loss of this income acts as a disincentive for the services concerned.
- Please make any other general comments that you feel would help the experts concerning the Faculty's finances.

The current governmental funding of the Faculty is inadequate, both in absolute terms (in relation to the actual costs of training a veterinarian) and relative to other courses. It must be strongly emphasised that veterinary training is inevitably one of the most expensive forms of education. The consumables and transport of students, the need for intensive small group teaching, and the necessity of maintaining outstanding clinical services mean that all these require a high level of resources. The governmental funding has continually been decreased, while the number of students remained the same, this means a reduction of funding by 14% nominally and 40% in real terms, taking into account an average annual 4% inflation rate, between 2005 and 2012. This is partly due to a governmental guideline decreasing the state funding in return for greater own income. By standard calculations, after the cut of government funding, the annual cost of training a graduate at the Faculty is about triple the amount of the annual governmental grant that the FVSB receives per student. By international comparison, the funding is extremely poor, not even reaching half or one-third of the funding of similar EU establishments.

Lack of funding is a general problem of higher education in Hungary; however, the decrease in grant means that the money for veterinary teaching is far too low relative to the funding of other degree courses. Veterinary education typically costs three times as much as another laboratory-based course, and nine times as much as a course of humanities. The FVSB has probably the lowest proportion of governmental funding of any public veterinary course in Europe.

The current state subsidy does not even cover wages and salaries, not to mention the operational costs. Since about one-third of the wages and salaries plus any other expenditure have to be financed by other means, the Faculty has to generate a high level of its own resources to do anything beyond a basic level. This includes self-financing major construction works which is extremely unusual, if not unique.

The revenue essential to run the FVSB is generated mainly by running three different undergraduate courses, two of which are for fee-paying students. This places a heavy load on staff, and compromises other activities and development. In conclusion, the drastic decrease in state funding is offset by the increase in income from international paying students, which has risen by 82% from 2005 to 2012.

In the Budapest campus the majority of the buildings were built in the last decades of the 19th century, and the 'new buildings' were completed in 1974–1976. In order to keep them properly operating and to meet the demands of international veterinary education in the 21st century, a considerable part of extra income is used for their maintenance and development. Actually only half of the minimum amount which would be required to maintain the current state of infrastructure is available for the Faculty, meaning a continuous deterioration of the premises and facilities. In the last 12 years all the modernisations were completed by using own resources only, no state funding was available. Therefore, the number one priority for the use of any increased funding would be the maintenance and modernisation of the buildings and the development of equipment.

At the FVSB the salaries and wages were last increased in 2006 by 0.5%. The majority of the employees have been working for the Faculty for a long time, the fluctuation is 12% only, mainly amongst the assistants and support staff. Migration among the teachers and researchers is still small, but the business sector and the international R&D institutions offer more and more attractive job opportunities. Thus, in order to retain the well-educated, experienced employees increase in funding should partly be devoted to the raise of salaries and other benefits.

Basically the Faculty has autonomy in allocating its budget. This reflects both its previous independence, and the fact that it has to generate 80% of its revenue itself. However, it should also be remarked that the SZIU (its many other Faculties) has severe financial problems owing to considerable cuts in state funding and in the last years the Faculty had to bear much greater proportion of the common university administration costs (233 million HUF in 2012), and in order to avoid the negative balance of the University extraordinary withdrawals from the FVSB's cash reserves had taken place (altogether 463 million HUF in 2012). This University practice may not be sustainable in the future, because it is very disincentive as regards the profitable faculties, and it hinders responsible financial planning and jeopardises the ongoing and future developments.

It should also be mentioned that preventing the Faculty from having its own bank account seems unjustified under these circumstances.

3.3 SUGGESTIONS

If you are not satisfied with the situation, please list any shortcomings and provide suggestions in order of importance and describe any factors which are limiting the further development of your Faculty.

- State provision for capital investment, such as building or major renovation works, or major items of equipment should be maintained at an adequate level.
- The operational funding of the FVSB has to be increased, and be appropriately scaled to other courses, so that it covers a much greater proportion of the actual costs of veterinary training.
- In the short run the FVSB should have its own bank account, in particular in relation to the management of its own resources.
- In the long run the strategic aim of the FVSB is to become again an independent University as the single national establishment for veterinary education.

Chapter 4. CURRICULUM

4.1 FACTUAL INFORMATION

- Indicate whether there is a defined national curriculum and (if applicable) how and by what body decisions are taken on this.

In Hungary, the programmes (i.e. the qualification requirements including objectives, duration of training, curriculum, examination system, diploma work, type and subjects of the state exam, etc.) of higher education institutions are regulated by government decrees which are issued pursuant to Act CCIV of 2011 on Higher Education. The qualification requirements in agricultural sciences including the veterinary profession are prescribed by Government Decree No. 15/2006 (IV. 9.). The objective of the programme is to train veterinarians who, based on their high-level professional and general training and economic skills, are able to identify and prevent animal diseases, and to provide medical treatment for animals. Furthermore, they are able to undertake duties in the various branches of agriculture, animal husbandry, and public administration. These areas may include veterinary administration, food control, food safety, food industry, vocational education, biology of reproduction, animal welfare, livestock farming and feeding, research laboratory (institutional diagnostic) work, the pharmaceutical industry, the distribution of pharmaceuticals, the feed industry, veterinary vaccine production and control, and the protection of animals and the environment.

- Describe the degree of freedom that the Faculty has to change the curriculum.

Considering the autonomy of the institution ensured by Act CCIV of 2011 on Higher Education, it leaves to the institution the right to prepare the curriculum according to its own experience within this framework. Thus, neither the hours of subjects within the study fields nor the ratio of theoretical lectures and practical work are prescribed, giving freedom to the Faculty to determine these numbers. Government Decree No. 77/2002 (IV. 13.) allows a more flexible opportunity for preparing the curriculum because a relatively wide range of credit points is given either to the main study fields or to the compulsory, elective, and optional subjects.

The duration of training had been determined by the decree to be 10 semesters until 2011, then the curriculum changed and was completed with a 11th semester before the diploma is issued. The 11th semester has been designed for enhancing the practical level of our students' training in clinical practice (farm animals, equine, companion and exotic animals), in state veterinary medicine, laboratory diagnostics and food hygiene.

- Outline how decisions on curriculum matters and course content are taken within the Faculty.

The Dean of Faculty is responsible for the programme. The executive tasks of the teaching programme and study affairs are the obligation of the Vice Dean for Study Affairs. The outline curriculum is prepared by the Education and Accreditation Committee. This committee consists of four professors, one associate professor, two researchers, two students and the head of the Department for Study Affairs. The Vice Dean for Study Affairs participates in the sessions as an *ex officio* member. The committee allocates the hours among the various subjects, determines the ratio of theoretical lectures and practical work, the credit points of the subjects, the type of exams and accredits the electives, thus, it prepares the model curriculum. The whole process is done after an intensive discussion with the heads of

departments. Elaboration of the contents of courses is mainly the task of the department heads in co-operation with their colleagues. The contents of subjects which are linked to each other are discussed regularly between the departments. Proposals from the teaching staff or students to change the model curriculum are discussed by the committee and, if necessary, an *ad hoc* committee nominated by the Faculty Council scrutinises the matter and offers suggestions. The programme accepted by the Education and Accreditation Committee is submitted to the Faculty Council for discussion and then to the University Senate for final adoption. The structure and the content of the curriculum are regularly discussed by the Faculty Council and the necessary changes are implemented as described above. Teachers co-ordinate their subject matters by regularly exchanging content lists and recommended (national/international) textbooks for various subjects, through regular formal and informal personal discussions with each other about selected topics and exchanging handouts, self-written texts, and laboratory manuals and lectures of related subjects, and/or having extramural specialists review these before they are printed. In the case of clinical subjects this also includes the harmonisation of the clinical work. The model curriculum for each year is published in the Students' Guide and on the website of the Office for Study Affairs.

The former curriculum was implemented in the academic year of 1995/1996 and was valid for students who started their study before the academic year of 2006/2007. The previous curriculum of veterinary education was reconsidered with the aim to introduce the credit system which took place in the academic year of 1995/1996. The main goal of the reform was to provide a more flexible education. The study hours of obligatory subjects were reduced by approximately 15% and a wide scale of elective and optional subjects was introduced. This system allows the students to select elective and optional subjects according to their interest and gives them the opportunity to prepare for their further specialisation in the veterinary profession. Another object of the reform was that our programme should provide more mobility for students and teachers among other veterinary schools in Europe and in other parts of the world. The curriculum was revised by introducing the 11th semester in 2006, which became obligatory for those students who started their studies in the academic year of 2006/2007. In the academic year of 2009/2010 the curriculum was revised again when the number of lectures of some basic subjects and sciences was reduced and their credits and places in the curriculum changed, and some new subjects were introduced. Due to this revised curriculum the practical hours increased from 2065 to 3208.

Besides the national curriculum, there is an international English study programme leading to a diploma that is equivalent to the diploma received after having successfully completed the national curriculum. A new curriculum was introduced for first-year students in 2009/2010, which was extended to the rest of the student body on a phased basis. Accordingly, changes for the 9th and 10th semesters are foreseen for the next year. The students of the international English study programme can also choose from several elective and optional subjects. Additionally, there is a two-year German programme also based on the Hungarian curriculum with minor adjustments supporting the reintegration of those students to the German system, who will continue their studies in Germany. Having finished this course, the students may continue their studies either in the English or the Hungarian training or at a veterinary school in Germany or other German-speaking countries.

- Outline how decisions are taken on the allocation of hours between the various subjects and on the balance between theoretical and practical teaching (Tables 4.1, 4.2 and 4.3).

The Education and Accreditation Committee prepares the allocation of hours between the various subjects, determining the ratio of theoretical and practical teaching. The

programme accepted by the Education and Accreditation Committee is submitted to the Faculty Council for discussion and then to the University Senate for final approval. The allocation of hours takes into account Directive 2005/36/EC, our traditions and the current international trends.

- Indicate the presence and disposition of an integrated curriculum. Describe the degree of integration present and the amount of time devoted to EU- and non-EU-listed subjects (Table 4.4).

The curriculum is under continuous change, it is adapted to the changing needs of the profession and society. The different subjects are closely connected to each other and teachers are obliged to harmonise their subjects with the connecting ones, which results in an integrated curriculum.

4.1.1 POWER OF SUBJECTS AND TYPES OF TRAINING

4.1.1.1 POWER OF SUBJECTS

- 'core' subjects taken by every student;

The core programme of the first three years provides the basic knowledge (basic subjects and basic science) in natural sciences and fundamentals of agriculture and related fields (e.g. biology, chemistry, anatomy, histology, physiology, biochemistry, biomathematics, microbiology, immunology, genetics, animal husbandry, nutrition, pathophysiology, pharmacology). These core subjects are necessary for the students to understand normal and abnormal structure and function and their relation to the clinical manifestations, diagnosis, treatment and prevention of disease, and to launch an intensive study of animal health and diseases.

The fourth and the fifth years are devoted to professional core subjects (e. g. pathology, parasitology, internal medicine, clinical diagnostics, udder hygiene, obstetrics, reproductive biology, surgery, animal hygiene, food hygiene, forensic veterinary science, and infectious diseases (epidemiology)). These core courses teach on the diagnosis and treatment of important diseases of major domestic animal species, many of which are taught using a problem-oriented approach. Clinical experience is an integral part of veterinary medical education. At the clinics, students take patient histories, learn the art and science of diagnosis and make recommendations for treatment as well as participate actively in case management and client communication. All of these activities are performed under the supervision of Faculty staff members who are specialists in their field.

Students' attendance and adequate performance during extramural clinical summer practice are under the strict control of the FVSB, while monitored and acknowledged by the local practitioners and state veterinarians involved and a representative of the Faculty staff. These local veterinary colleagues receive written instructions about the objectives and requirements of the practice from the Faculty.

Knowledge of certain core subjects is a prerequisite of studying other core subjects.

- 'electives' which each student must select from a list of permissible subjects;

In the framework of the credit system (credit-based curriculum), students have the right to freely organise their individual study plans and to select electives which they are interested in. The majority of the more than 100 electives are directly related to veterinary science (e.g. Reptile Medicine, Diagnosis of Infectious Diseases, Physiological Basis of Cardiology, Canine and Feline Dermatology). The students can also select several optional electives having less credit points (e.g. Medical Latin, Hot Topics in Human Nutrition, Selected Chapters of Human Anatomy), which contribute to their professional intelligence. However, a logical sequence of the subjects is necessary to maintain a successful progress in the study. Beyond the 250 credits of mandatory subjects, students are required to collect 50 credit points from elective subjects. Students can freely select any elective subjects provided that they fulfil the prerequisites (if any) of the elective subject in question. (More precisely, at least 44 credits from these subjects plus 6 credits by fulfilling optional subjects). Highly motivated students are allowed to collect more than 300 credit points; however, the total amount of credits that can be acquired 'free of charge' is 330. Elective subjects are offered either in the fall or the spring semester (half-year) and are kept if at least ten students have registered for the given subject.

- obligatory extramural work

These practicals aim to provide our students with relevant up-to-date knowledge regarding the current situation and the level of everyday practice of different disciplines. There is obligatory extramural work in animal husbandry and animal nutrition (2nd year), in cattle herd health (4th year), in equine, small and/or exotic animal clinical practice (4th year), in food hygiene (6th year), and in laboratory diagnostics (6th year). In the 2nd and 4th years the extramural work means summer practice, whereas the practicals in the 6th study year are included in the 11th semester. These are organised in contractual co-operations with external institutions/stations having teaching colleagues who are able to provide accredited and controlled practical knowledge to our students. These practicals are designed and supervised by the departments involved. The students are obliged to pass an exam and/or to submit a written report on their practical work. See more details in Chapter 4.1.4.

4.1.1.2 TYPES OF TRAINING

There cannot be absolute distinction between the terms used to distinguish between different types of training. Overlap is inevitable. The following descriptions are derived from the definitions presented in the section 'Main Indicators' of **Annex I.**

The curriculum provides considerable didactic variety for our students, e.g. lectures, seminars, desk-based and laboratory practical exercises, non-clinical and clinical practical exercises and clinical work. The practical learning is often structured as project-based learning and case-based learning.

4.1.1.2.1 Theoretical training

- **Lectures** convey theoretical knowledge. Lectures are given to an entire or partial annual intake of students. Teaching may be with or without the use of teaching aids or of demonstration animals or specimens. The essential characteristic is that there is no active involvement of the students in the material discussed. They listen and do not handle.

- **Seminars** (sometimes called tutorials or supervised group work) are teaching sessions directed towards a smaller group of students during which they work on their own, or as a team, on part of the theory, prepared from manuscript notes, photocopied documents, articles and bibliographic references. Information is illustrated and knowledge extended by the presentation of audiovisual material, exercises, discussions and, if possible, case work.
- **Self-directed learning** are sessions of individual students making use of defined teaching materials provided by the Faculty (e.g. e-learning).

Knowledge providing under theoretical training at the FVSB is predominantly based on lectures. Some of the elective courses are delivered as seminars. A few of these electives are offered as self-directed learning (e.g. Physiological Basis of Cardiology).

4.1.1.2.2 Supervised practical training

- **Laboratory and desk-based work.** This includes teaching sessions where students themselves actively perform laboratory experiments, and use microscopes for the examination of histological or pathological specimens. It also includes work on documents and idea formulation without the handling of animals, organs, objects or products (e.g. essay work, clinical case studies, handling of herd-health monitoring programmes, risk-assessment computer-aided exercises).
- **Non-clinical animal work.** These are teaching sessions where students themselves work on normal animals, on objects, products, carcasses etc. (e.g. animal husbandry, ante mortem and post mortem inspection, food hygiene, etc.) and perform dissection or necropsy.
- **Clinical work.** These are strictly hands-on procedures by students which include work on normal animals in a clinical environment, on organs and clinical subjects including individual patients and herds, making use of the relevant diagnostic data. Surgery or propaedeutic hands-on work on organ systems of cadavers to practice clinical techniques is also classified as clinical work.

Nearly all of the theoretical subjects have a mandatory laboratory component in which the students should participate actively. Hands-on work using the appropriate equipment and specimens are integrated part of the training. A similar concept applies to non-clinical animal work as well.

Clinical work

After receiving the evaluation of the Joint Education Committee (JEC) of the EAEVE and FVE (Federation of Veterinarians of Europe) in late 2004, our school took significant steps to rectify the category 1 deficiencies mentioned in the evaluation report. The new system of the clinical work was introduced on 7 February 2005 from the beginning of the spring semester 2004/2005 and the Mobile Clinic operated by the LAC in Üllő was equipped and incorporated into the training. As a result of this system, students have 204 hours of clinical work during the 4th year, 112 hours in the summer practical and 126 hours in the 5th year. Together with the former 110 hours mentioned in the EAEVE-FVE report, each student has a total of 552 hours of clinical work (in addition to the practical lessons in groups).

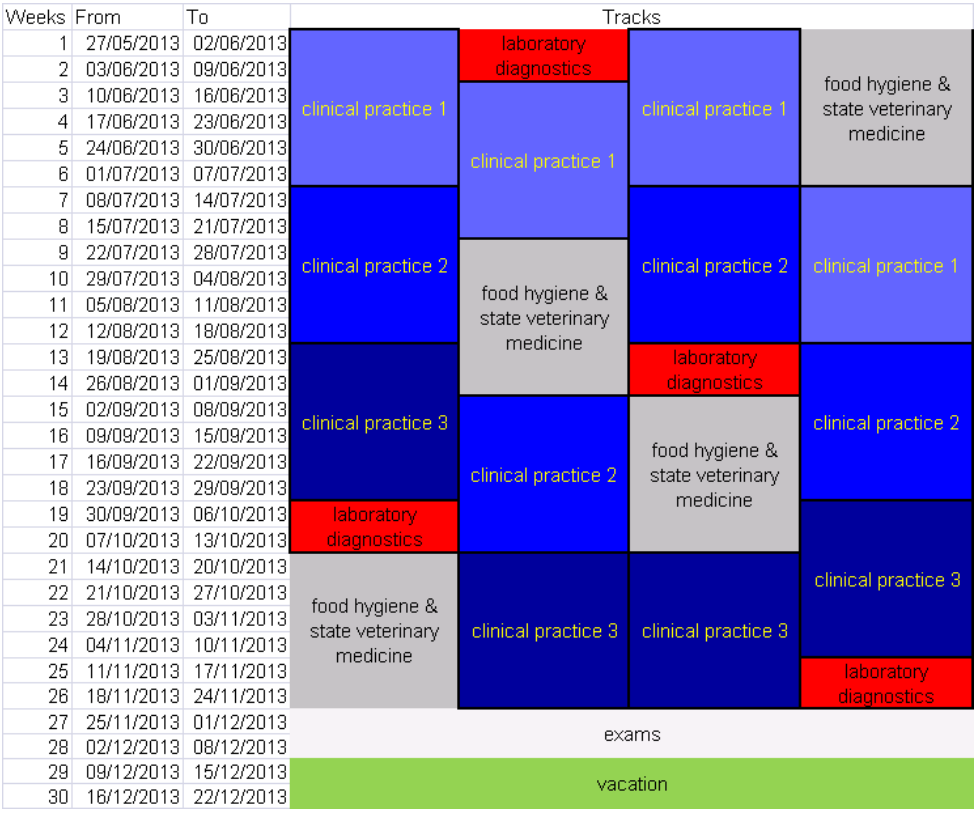
Students of the 4th and 5th years are obliged to fulfil an intramural rotating hands-on clinical work at the LAC and SAC of the Faculty. In the framework of the practical, students are allocated to the different divisions (internal medicine, surgery and obstetrics) and then are directly involved within the daily clinical routine of different units of the clinics (e.g. discipline consultations, diagnostic imaging, operating rooms, intensive care unit [ICU], etc.) as well as in the 24-hour emergency service and the night shifts supervised by the academic teaching staff

according to a strict schedule. The students are obliged to directly take part in diagnostic procedures (e.g. physical examinations, preanaesthetic evaluations etc.) and therapeutic treatments of hospitalised patients, as well as to be involved in surgical procedures as first surgeons supervised by teaching staff (spay training at the Department and Clinic of Obstetrics) or as first or second assistants during operative procedures.

The mobile clinic (in Üllő) provides an 'on-farm' hands-on learning possibility for the students in the 9th and 10th semesters (for details see Chapter 4.1.3).

As part of the intramural clinical training, 4th-year students currently must fulfil at least one week at the Faculty clinics in the framework of the 4-week summer hands-on clinical practice together with the currently scheduled 11th-semester students. The rest of the time is spent at extramural clinical places (see above).

The major period for intramural clinical hands-on practice of the curriculum is the 11th semester within the 6th year, which involves 3 × 6 weeks (3 × 240 = 720 hours) of clinical training in different species such as farm animals, horses, small animals and exotic pets (for details see Chapter 4.1.3). Students are provided to take these hands-on practices on the campus as intramural practical; however, they are also allowed to spend some practices at certain farms and clinics, which are accredited and contractual partners of the Faculty, managed by teachers as part-time contractual co-workers of the Faculty who guide and supervise students according to strict regulations and topics worked out and controlled by the departments responsible for the given discipline. All students are examined by the departments after the practical blocks. The system of clinical practicals during the 11th semester is shown by the figure below:



Students are scheduled to take part in small-group practical sessions performing and practising diagnostic procedures (e.g. orthopaedic and neurological examinations), as well as in so-called 'cadaver surgery practicals' when they practise the very basic operative proce-

dures (laparotomy, gastrotomy, enterotomy, cystotomy, etc.) working on dead animals and mimicking these surgeries with normal and appropriate instrumentation.

4.1.2 UNDERGRADUATE CURRICULUM FOLLOWED BY ALL STUDENTS

4.1.2.1 CURRICULUM HOURS

This section makes a distinction between curriculum hours to be taken by every student and those offered as electives or within a given track. Specific information is also requested on subjects other than those specified in Table 4.2.

Table 4.1. **General table of curriculum hours taken by all students**

Year	Hours of training							
	Theoretical training			Supervised practical training			Other	Total
	Lectures (A)	Seminars (B)	Self-directed learning (C)	Laboratory and desk-based work (D)	Non-clinical animal work (E)	Clinical work (F)	(G)	
First	405	125	3	188	167	6	14	908
Second	390	125	3	216	77	6	1	818
Third	541	125	3	298	92	21	1	1081
Fourth	498	125	153	99	107	198	1	1181
Fifth	470	125	153	108	2	75	1	934
Sixth	0	0	150	0	0	720	320	1190
Total	2304	625	465	909	445	1026	338	**6112**

*It includes 750 hours electives evenly distributed over the five years that the students are also obliged to accomplish.

Table 4.2. **Curriculum hours in EU-listed subjects taken by each student**

Subject	Theoretical training			Supervised practical training			Other	Total
	Lectures A	Seminars B	Self-directed learning C	Laboratory and desk-based work D	Non-clinical animal work E	Clinical training F	G	
1. Basic Subjects								
a) Physics	30							30
b) Chemistry	90			75				165
c) Animal biology	15							15
d) Plant biology	45			45				90
e) Biomathematics (including informatics)	30			60				90
1- Total number of hours	210			180				390
2. Basic Sciences								
a) Anatomy (incl. histology and embryology)	180				240			420
b) Physiology	120			40			13	173
c) Biochemistry, cellular and molecular biology	90			53				143
d) Genetics (including molecular genetics)	30			30				60
e) Pharmacology and pharmacy	75			60				135
f) Toxicology (including environmental pollution)	30							30
g) Microbiology (including virology, bacteriology and mycology)	90			45				135
h) Immunology	45			15				60
2- Total number of hours	660			243	240		13	1156
3. Clinical Sciences								
a) Obstetrics	120			45		250		415
b) Pathology (including pathological anatomy)	120			30	135			285
c) Parasitology	75			60				135
d) Surgery (including anaesthesiology)*	87					230		317
e) Clinical lectures on various domestic animal, poultry and other animal species including rabbit						240		240
f) Field veterinary medicine (ambulatory clinics)						20		20
g) Preventive medicine	135			35			80	250
h) Diagnostic imaging (including radiology)	24			10		17		51
i) Reproduction and reproductive disorders#								
j) Veterinary state medicine and public health	60						80	140
k) Veterinary legislation and forensic medicine	35							35
l) Therapeutics**								
m) Propaedeutics (including laboratory diagnostic methods)	45				30			75
n) Basics of clinical examination and clinical care	3			12				15
o) Pathophysiology	45							45
p) Laboratory diagnostics						30		30
q) Internal medicine	88			26		40		154
r) Avian and exotic animal diseases, clinical lectures on various domestic animals, poultry and other animal species including rabbit, small mammals, reptiles etc.	24							24
s) Clinical diagnostics	45				30	160		235
3- Total number of hours	906			218	195	987	160	2466

Obstetrics involves reproduction and reproductive disorders
*Surgery including anaesthesiology and excluding radiology
**There is no such a separate subject, it is included in the different clinical subjects

Table 4.2. **Curriculum hours in EU-listed subjects taken by each student** (continued)

Subject	Theoretical training			Supervised practical training			Other	Total
	Lectures A	Seminars B	Self-directed learning C	Laboratory and desk-based work D	Non-clinical animal work E	Clinical training F	G	
4. Animal Production								
a) Animal production#								
b) Animal nutrition	75			60				135
c) Agronomy	30							30
d) Rural economics*								
e) Animal husbandry	45			30				75
f) Veterinary hygiene	75							75
g) Animal ethology and protection	45							45
e) Laboratory animal science and bioethics	15			8				23
4- Total number of hours	285			98				383
5. Food Hygiene/ Public Health								
a) Inspection and control of animal foodstuffs or foodstuffs of animal origin and the respective feedstuff production units	44			24				68
b) Food hygiene and technology	44			18				62
c) Food science including legislation	32			16				48
d) Practical work (including practical work in places where slaughtering and processing of foodstuffs takes place)				2			160	162
5- Total number of hours	120			60			160	340
6. Professional Knowledge								
a) Practice management**	30							30
b) Veterinary certification and report writing***								
c) Career planning and opportunities	15							15
6- *Total number of hours*	45							45
TOTAL	**2226**	**0**	**0**	**799**	**435**	**987**	**333**	**4780**

It is included in animal husbandry and veterinary hygiene
*The rural economics is part of Agronomy
**It includes animal health economics and ethics, too
***It is part of the clinical diagnostics

Please note:

Establishments, which due to the character of their curriculum feel unable to complete Table 4.2 may – alternatively – provide a detailed outlay of their curriculum. This should allow conclusions to be drawn about the extent to which the requirements laid down in Directive 2005/36/EC are met. The values for ratios R6, R7 and R8 (Annex I, 2.10) must be given.

Table 4.3. **Curriculum hours in EU-listed subjects offered and to be taken as electives***

	Subject	Theoretical training		Supervised practical training			Other	Hours to be taken by each student per subject group
		Seminars	Self-directed learning	Laboratory and desk-based work	Non-clinical animal work	Clinical work		
	BASIC SUBJECTS	A	B	C	D	E	F	
	Basics of grassland management	30						30
	Knowledge of poisonous plants	13						13
	Biologically active materials in plants	15						15
	Organogenesis	16						16
	Data analysis exercises			30				30
	Instrumental methods on chemical analysis	15						15
	Bayesian statistical methods			30				30
	Bioacoustics	24						24
	Bioinformatics	20						20
	Medical plants	26						26
	Modern materials in life sciences	15						15
	Web programming 1-2		44					44
	Edible and poisonous mushrooms	26						26
	Medicinal plants	26						26
	The biology and ecology of peatlands	26						26
	Field crops and grasses	15						15
	Library informatics			15				15
	Animals in art history	15						
	BASIC SCIENCES							
	Genomics	15						15
	Genetic engineering	15						15
	Anatomy of domesticated birds	14						14
	Molecular cell physiology	15						15
	Modelling and analysis of diseases in animal populations	30						30
	Pharmacotherapy	30						30
	Veterinary clinical genetics	15						15
	Veterinary nuclear medicine	15						15
	Veterinary X-ray anatomy	15						15
	Veterinary vaccinology	15						15
	Alternative therapeutics	30						30
	Stem cells – from biology to therapeutic applications	15						15
	Stem cells: prospects of animal transplantation	14						14

*All the EU-listed subjects are mandatory at our Faculty; this table contains the electives available for the students.

	General mycology	30						30
	Selected chapters of human anatomy	14						14
	Pathobiochemistry	15						15
	Functional biochemistry	15						15
	Side effects and interactions of drugs	15						15
	Forensic animal genetic	15						15
	Carcinogenic and anticarcinogenic plants	13						13
	Environmental chemistry and ecotoxicology	15						15
	Microbiological biotechnology	15						15
	Veterinary surgical anatomy	15						15
	Wildlife zoology	22						22
	Molecular background of the pathogenesis of viral diseases	14						14
	Stochastic models	15			15			30
	Wildlife ecology	22						0
	CLINICAL SCIENCES							
	Laboratory diagnostics of infectious disease	9		9				18
	Clinical pathology	21			9			30
	Equine colic	15						15
	Dermatology of dogs and cats	20						20
	Horse in the farrier's view	10					5	15
	Zoo and wild animals' disease	30						30
	The physiological basis of cardiology	15						15
	Applied clinicopathological diagnostics	21		9				30
	Veterinary neonatology	15						15
	Andrology and assisted reproductive techniques	20				10		30
	Basics of veterinary cardiology	15						15
	Pet fish diseases	18						18
	Feeding and nutrition of ornamental fishes, exotic birds, reptiles and small mammals	15						15
	Animal perception	15						15
	Biology and protection of amphibians and reptiles	15						15
	The effects of predisposing factors during the periparturient period in cattle	15						15
	Diseases of rabbits, laboratory and exotic rodents	15						15

	Dentistry of carnivores	10				5		15
	Reptile medicine	30						30
	Arthropod vectors and vector-borne pathogens of veterinary and public health importance in Europe	30						30
	Diseases of amphibians and reptiles	15						15
	Clinical endocrinology	28		2				30
	Diagnostic ultrasonography in dogs and cats	12				2		14
	Pathology of the diseases of turkeys, pigeons, guinea-fowls, partridges and pheasants	15						15
	Parasitology of carnivores, laboratory rodents, birds	15						15
	Special operative procedures in soft tissue surgery	10				5		15
	Operation techniques: hand-on practice on cadavers (orthopaedics)	10				5		15
	Radiobiology for veterinarians	15						15
	Equine gastrointestinal diseases	9				6		15
	Equine respiratory diseases	15						15
	Parasitic zoonoses	10		5				15
	Parasitoses of companion and some important wild animals	15						15
	Veterinary laboratory measurement methods	15						15
	Wildlife health	22						22
	Zoonoses 1+2	25						25
	ANIMAL PRODUCTION							
	General background of poultry nutrition	14						14
	Special topics of digestion of ruminants	15						15
	Practical aspects of pig nutrition	15						15
	Nutrition and feeding of zoo animals: herbivorous mammals	15						15
	Practical problems on large-scale poultry farms	15						15
	Organic animal breeding	15						15
	Incubation of poultry eggs	22						22
	Game breeding and nutrition	22						22
	Horse breeding	15						15
	Swine herd health	20				20		40

	Cattle herd health	30				40		70
	Fish breeding and nutrition	15						15
	Aquaculture hygiene	18						18
	Breeding of exotic animals	15						15
	Cattle breeding	15						15
	Game management	22						22
	Trophy judgement	10					12	22
	Weapons and ammunition knowledge	10					12	22
	FOOD HYGIENE/ PUBLIC HEALTH							
	Hot topics of human nutrition	15						15
	Food technology in practice	24						24
	Human first aid						15	15
	Microbiological food safety	20		2				22
	PROFESSIONAL KNOWLEDGE							
	History of Hungarian veterinary education	14						14
	Fundamentals of scientific writing			10				10
	Veterinary English advanced 1+2			56				56
	Animal welfare	15						15
	General and legal aspects of animal welfare	15						15
	Practical animal welfare studies	15						15
	History of veterinary medicine	15						15
	Practical laboratory animal science	2		22				27
	Companion animals in human medicine	24						24
	Human animal relationship	30						30
	Behaviour disorders and their treatment (dogs and cats)	30	2		8			40
	Companion animal dietetics	20		10				30
	Dog and cat breeding	20						20
	Feeding and nutrition of fur animals	20						20
	Fundamentals of hunting	22						22

All the elective courses are available in Hungarian and/or English.

The inherent nature of an elective is that students make a distinction and select. However, the total number of hours to be taken by each student out of the various subject groups should be stated.

Where a Faculty runs a 'Tracking system', this should be indicated when completing Table 4.3. Separate tables should be provided for each track, e.g. Table 4.3a: Curriculum hours in EU-listed subjects to be taken in the 'equine medicine track'.

There is no official tracking system in the Faculty.

Table 4.4 requests information concerning curriculum hours in subjects not listed in Table 4.2 to be taken by every student. If offered as electives or within a special track, please develop separate tables (e.g. 4.4a, b…).

Table 4.4. **Curriculum hours in subjects not listed in Table 4.2 to be taken by each student, including diploma work (final graduation thesis or final graduation work)**

	Subject	Theoretical training			Supervised practical training			Other	Total
		Lectures A	Seminars B	Self-directed learning C	Laboratory and desk-based work D	Non-clinical animal work E	Clinical work F	G	
	Zoology	30							30
	Honey bee diseases	12							12
	Fish diseases	24							24
	Ophthalmology	12					9		21
	Latin				45				45
	Diploma work			450					
	Total	**78**		**450**	**45**		**9**		**582**

Some obligatory subjects mentioned – e.g. physical education – have been omitted from the tables in the SER.

4.1.3 FURTHER INFORMATION ON THE CURRICULUM

- Provide the visiting team with highlights and any unusual or innovative aspects of the teaching programme, e.g. tracking and orientation programmes.

There is no tracking system as far as the obligatory subjects are concerned; however, students interested in a certain field of the profession can build an own 'track' for themselves. Students interested in the diseases of certain animal species can increase the emphasis of this species in the clinical practice of the 11th semester.

- State the parts of the programme that must be attended as obligatory by the students and how the attendance is verified.

According to the existing Rules of Study and Examination, students are obliged to attend the theoretical lectures. Efforts are being made to convince the students that these rules serve their own interest. Practical work, seminars, and clinical demonstrations for student groups are obligatory, and attendance is registered by the teacher using the official student list. Missed practical lessons due to acceptable reasons (e.g. illness or an official study tour abroad) must be made up at the end of the semester, otherwise students are not allowed to sit for the relevant examination, and they cannot continue their studies in the subject. Students' attendance and adequate performance during extramural clinical summer practice are supervised and acknowledged by the appointed local practicing veterinarian. These colleagues receive a detailed instruction about the requirements of the practice from the Faculty.

Please provide specific information on the practical clinical training.
If clinical training is be provided through obligatory clinical rotations in different areas, please give an outline description of how this is structured, in terms of:

- are such rotations a structured part of the training given to all undergraduate students?
- the total number of days or weeks of such rotations;
- the year(s) in which they occur;
- the different areas covered and the time spent in each area;
- whether attendance is full-time, for part of the day, and/or other (e.g. based on case needs);
- the activities and case responsibilities that students are expected to undertake;
- the group sizes in the clinical rotations.

- Describe clinical exercises in which students are involved prior to the commencement of clinical rotations.
- Outline the student involvement in the emergency and hospitalisation activities of the clinics.
- Specify student participation in the activities of the mobile clinic and indicate whether or not the hours spent in the mobile (ambulatory) clinic are included in those in Table 4.2.

Before the clinical hands-on training period started in the 4th year, as early as in the 2nd year all students are obliged to spend one day (a sort of visitation) at the Faculty clinics to get a basic impression about the clinical work. This one-day experience may contribute to keeping up the motivation for the following years towards the clinical subjects. The obligatory hands-on clinical practice takes place in the 4th and 5th years as well as within the 11th semester (see also in Chapter 4.1.1.).

The 4th- and 5th-year students are obliged to fulfil an intramural rotating clinical practice at the LAC and SAC of the Faculty. In the framework of these hands-on practicals, the students are directly involved within the daily clinical routine of the different units of the clinics (e.g. consultations at appointments, diagnostic imaging, operating rooms, ICU etc.) as well as in the night shifts supervised by the academic teaching staff according to a strict schedule:

SAC (István street, campus):

Day-time (08:00–20:00) 4 students

Night-time (20:00–08:00) 4 students

Total number: 8 students/day (exam period: 2 × 2 students)

LAC (Üllő):

Day-time: (08:00–16:00) 2 students (weekends: 8:00–18:00 and 18:00–8:00)

Night-time: (16:00–08:00) 2 students

Total number: 4 students/day, exam period: 2 × 1 student

The 4th- and 5th-year students are allocated to the different units of the clinic (basically as internal medicine, surgery and obstetrics) and obliged to directly take part in diagnostic procedures (e.g. physical examinations, preanaesthetic evaluations, etc.), therapeutic treatments of hospitalised patients, as well as to be involved in surgical procedures as first surgeons supervised by the teaching staff (spay training at Obstetrics) or as first or second assistants during operative procedures according to which unit they are scheduled in. At the end of the 5th year students

must be able to perform a complete physical clinical examination including orthopaedic and neurological evaluation, planning further diagnostic tests, to carry out spaying of small animals and to surgically close tissue layers.

A further considerable achievement is the introduction of the 'spaying programme' operated by the Department of Obstetrics and Reproduction. Approximately 100 female dogs belonging to animal shelters have been hospitalised at the clinic for a short period of time, to be spayed by the students under direct supervision by the teaching staff. Before and after the surgery these dogs undergo some diagnostic (blood work, urinalysis, ultrasonography, postoperative rechecks) and basic therapeutic procedures (deworming, postoperative analgesia) performed by the students. The Department of Internal Medicine also contributes to the programme. The costs of the treatments are partly supported by the Faculty to encourage animal shelters to contribute to the programme.

The Mobile Clinic is to provide an on-farm learning possibility for the students in the 9th and 10th semesters. Although initially two nearby farms had been involved (350 and 250 heads of cows) in the practice, currently 12 to 15 farms are connected. Every (English and Hungarian) student should take part once in a semester (twice during the curriculum). The practices are carried out every Monday, Wednesday and Friday. The students are taken to the farms in small groups of 4 to 6 persons by a minibus accompanied by the teaching staff. These practicals predominantly focus on clinical aspects of herd health, regular reproductive examinations (pregnancy examination, management of infertility and pathologic conditions) on 20 to 40 animals, handling and management of calf diseases, taking part in eradication programmes (blood sampling for different tests, tuberculosis testing, other kinds of sampling) seasonally, usually during the autumn semester, managing surgical disorders of farm animals (Caesarean section, laparoscopic management of left displaced abomasum, umbilical surgery), taking part in claw trimming activities and milk hygiene examinations using on-farm machines occasionally. The main developments of the Mobile Clinic are a mobile endoscopic set for left displaced abomasum surgery (2008), an operating table for cattle on a trailer (2009), a mobile acid-base measuring device (2010), and an additional portable ultrasound device (2011). In 2012 a second teaching expert was hired.

As part of the intramural clinical training, 4th-year students currently must fulfil at least one week at the Faculty clinics in the framework of the 4-week summer hands-on clinical practice together with the currently scheduled 11th-semester students. The rest of the time is spent at extramural clinical places (see above).

As part of the clinical work, students are scheduled to take part in small-group clinical practical sessions performing and training diagnostic procedures (e.g. orthopaedic and neurological examinations) as well as in so-called 'cadaver surgery practicals' when they practice the fundamental operative procedures (laparotomy, gastrotomy, enterotomy, cystotomy, etc.) working on dead animals, mimicking these surgeries with normal and appropriate instrumentation on so-called 'clinical days' which are exclusively dedicated to clinical teaching.

The last period of the undergraduate intramural clinical training is the 11th semester when three 6-week clinical blocks have to be fulfilled by the students (720 hours of clinical hands-on practice). Clinical blocks are devoted to farm animal, equine, small animal and/or exotic animal medicine. At least one of the 3 blocks must be farm animal medicine. The remaining 2 blocks can be 2 or 1 of each companion animal medicine including equine medicine. The students must spend 1 or 2 blocks at the Faculty clinics if they choose 2 companion animal blocks to fill up the intramural places, but some high-level practices accredited by the clinical departments have been involved into the system with their teaching staff being part time employed by the Faculty. Students scheduled at the Faculty clinics are allocated to the different divisions (internal medicine, obstetrics) and rotating between the different units of the clinics

(e.g. discipline consultations, diagnostic imaging, operating rooms, ICU, etc.) as well as in the 24-hour emergency and night shifts supervised by the academic teaching staff. The students are obliged to fulfil requirements prescribed by the clinical departments and the clinical activity is evaluated by the clinic. The students have to take a practical exam at the end of the clinical block(s) at the Faculty clinic. The final grade consists of the grade of the practical activity and the exam.

4.1.4 OBLIGATORY EXTRAMURAL WORK

These are training periods that are an integral part of the curriculum, but which are taken outside the Faculty. Please make a distinction in respect to the nature of the work, for instance work on farms, training in a veterinary practice or in Food Hygiene/Public Health with a commercial or government organisation.

Please indicate the guidelines pertaining to this activity, and the manner by which it is assessed.

Table 4.5. **Obligatory extramural work that students must undertake as part of their course**

Nature of work	Minimum period[2)]		Maximum period[2)]		Year in which[1)] work is carried out
	hours	% of total study time	hours	% of total study time	
Animal husbandry + Animal nutrition	120		120		2nd year
Clinical (summer) practice	120		120		4th year
Cattle herd health practical (Farm visit)	8		12		4th and 5th years
Meat inspection, official controls in food hygiene	160		160		6th year
Laboratory diagnostics	80		80		6th year
State veterinary medicine	80		80		6th year

[1)]If these periods of extramural work take place during vacations, then the preceding academic year should be entered in the last column of Table 4.5
[2)]Where applicable

The aim of the 3-week-long animal husbandry and animal nutrition extramural work is to understand the everyday practice of animal breeding and nutrition, as well as its rules, considerations, habits, strategies, trends and the proper role of the veterinarian surgeon in it. The practice shall be made after the summer exam period of the 2nd study year, and must be finished till the end of August. A training agreement has to be signed by the end of the semester by the farm manager and the student, and it shall be sent to the appropriate institute. Practical work on two different animal species is required. The farm shall be a large-scale facility, preferably dealing with dairy cattle, pigs, sheep, goats or fish. Horse and beef cattle breeding facilities are also accepted. Small family farms, zoos or minor breeding businesses are not accepted. During the time of the practical, students need to be employed in the routine daily work of the farm, and work according to the directions of the supervisor or owner (farmer). An up-to-date diary must be kept about all the activities day by day. This should be signed by the supervisor or by the owner of the farm at the end of the practical and shall be included as a chapter of the report. Students have to summarise their experiences and observations collected during the practical in a report (35–40 written pages, preferably illustrated by photos, figures and tables). The detailed information regarding the required structure of the report can be found on the homepage of the institute.

Submission of the report is a prerequisite for the exam in the two disciplines (animal breeding and animal nutrition II) for the semester. Moreover, submission of the report is also a prerequisite for enrolling for Animal Nutrition, as those who submit late will lose the chance for registering. The institute will evaluate the report, and a grade (from 2–5) will be included in the scores of the final examination.

Extramural clinical (summer) practice after the 4th year:
During the period from 2004 to 2011, the 4th-year students' obligatory 4-week summer clinical practice contained 2 weeks of extramural and 2 weeks of intramural training. Following the introduction of the 11th practical semester, the practice consists of 3 extramural weeks and 1 intramural week. The extramural clinical practice has to be fulfilled at different acknowledged external places according to a detailed guideline including all the requirements. A summer report on the clinical cases with short clinical records and a detailed case report are to be submitted to the Department of Internal Medicine that is responsible for the entire administration of this summer practice. The grade of this report is taken into consideration at the final examination.

Extramural practice within the framework of the 11th semester
Until 2011, students had been obliged to fulfil extramural practices of Laboratory Diagnostics, Food Hygiene and State Veterinary Medicine at the end of the 5th year as described in our 2004 Self Evaluation Report for EAEVE. In 2011 an extra and completely practical semester of 26 weeks (see the figure below) was introduced in addition to the previous 10-semester curriculum in order to enhance the level of practical training concerning certain essential subjects. In the framework of this training, the students must fulfil extramural practical of Food Hygiene, State Veterinary Medicine and Laboratory Diagnostics. The Faculty has an official contract with the Ministry for Rural Development to provide a sufficient number of high-level extramural practical places for Food Hygiene and State Veterinary Medicine as well as Laboratory Diagnostics every year. The Laboratory Diagnostics practice is also available for a limited number of 6th-year students in an intramural form at the Faculty, organised by the Department of Microbiology and Infectious Diseases in co-operation with the Department of Pathology and the Department of Parasitology and Zoology.

Extramural training in Food Hygiene/Public Health is organised in co-operation with the national food chain control authority (National Food Chain Safety Office). The training period is 4 weeks (160 hours), out of which 2 weeks (80 hours) must be accomplished at slaughterhouses, at least 40 hours at a pig and/or cattle and/or sheep slaughterhouse and maximum 40 hours at a poultry and/or lagomorph and/or game slaughter establishment. The remaining 2 weeks of the obligatory extramural training include practical courses in official hygiene control of processing (meat, milk) facilities, and in wholesale and retail establishments, including restaurants and catering operations, respectively. Each training facility involved in the obligatory extramural programme has been accredited by the Department of Food Hygiene. The training is supervised by the official veterinarian responsible for the establishments where the training takes place and also controlled by members of the Department of Food Hygiene. The students must prepare a short, 20- to 30-page report ('work log') about their practical work that should be submitted to the Department of Food Hygiene together with the written evaluation of the supervising state veterinarian. At the end of the 4-week obligatory extramural training there is a written exam at the Department of Food Hygiene, which is based on the report prepared and submitted previously by the students (see the Table on page 23).

Practical training in Laboratory Diagnostics. During this 2-week-long practical, students can see and practice the most important laboratory methods used in the diagnostic work (postmortem examination, histology, bacteriology, virology, immunology, parasitology, etc.). Special emphasis is laid on the differential diagnostics of animal diseases and the diagnostics of notifiable diseases.

The practice is offered at the Veterinary Diagnostic Directorate of the National Food Chain Safety Office and three departments of the Faculty (the Department of Microbiology and Infectious Diseases, the Department of Pathology and the Department of Parasitology and Zoology).

Extramural training in State Veterinary Medicine is organised in co-operation with the national food chain control authority. The training period is 2 weeks (80 hours) and is supervised by the official veterinarian responsible for districts or counties where the training takes place and also controlled by the members of the Department of State Veterinary Medicine and Agricultural Economics. The students must prepare a report presenting their activities during the practice (approximately 10–20 pages) and 18 of the listed 30 official activities (60%) should be completed as the minimum, which shall be certified by the supervisor/responsible official veterinarian and should be submitted to the Department of State Veterinary Medicine and Agricultural Economics. During the practice, the students have to get familiar with the official control measures (restrictions), the veterinary and animal welfare checks as well as the control and eradication of notifiable animal diseases. At the end of the 2-week obligatory extramural training there is a written exam at the Department of State Veterinary Medicine and Agricultural Economics, which includes practical questions relating to the completed activities based on the report prepared and submitted previously by the students.

The detailed programmes of the different extramural trainings can be found on the website of the Faculty (http://edu.univet.hu/gyakorlati-felev).

4.1.5 SPECIFIC INFORMATION ON THE PRACTICAL TRAINING IN FOOD HYGIENE/PUBLIC HEALTH

- Describe arrangements for teaching in a slaughterhouse and/or in premises for the production, processing, distribution/sale or consumption of food of animal origin.
- Indicate the distance to slaughterhouses where students undergo training, and the species covered. Outline the structure and the frequency of these visits (group size, number of trainers, duration, etc.).

The comprehensive subject aims to teach the theoretical knowledge and skills indispensable for veterinarians to ensure and control adequate safety and quality of food in the whole food chain (primary production, food processing, distribution, and sale). Special emphasis is laid on the paramount concern of protecting human health (veterinary public health), the importance of risk-based self-check programmes, and the general and specific requirements of official controls at all stages of the food chain from the farm to the retail trade including restaurants and catering operations. Types of training in food hygiene include lectures (120 hours), laboratory and desk-based practicals (60 hours) and obligatory extramural practical work (160 hours).

The intramural laboratory and desk-based practicals are performed in groups of 15–16 students at the Department of Food Hygiene. The practicals are aimed to familiarise the students with the main evaluation methods of food safety and quality and to provide them essential hands-on experience in food microbiology, chemical food safety, food spoilage and preservation, technology and technological hygiene of main foodstuffs of animal origin, risk-based self-check programmes and the official control of establishments and different foodstuffs. In the course of the intramural practicals the students perform manual work, where possible and/or the practical aspects are discussed using the problem-solving approach, where appropriate.

A practical course of 80 hours in one or more slaughterhouses is an essential extramural course out of which at least 40 hours must be accomplished at a pig and/or cattle and/or sheep slaughterhouse. It is organised in co-operation with the food chain control authority (National

Food Chain Safety Office). The training is supervised by a state veterinarian and also controlled by members of the Department of Food Hygiene.

The mandatory extramural course also includes practical courses of 80 hours on official hygiene control in processing (meat, milk) facilities and in wholesale and retail establishments, respectively. Each training site involved in the extramural programme has been accredited by the Department of Food Hygiene. Main aspects of this accreditation procedure include the presence of adequate facilities for hands-on practical training in *ante-* and *postmortem* meat inspection and in the official control of approved food processing establishments. Additionally, the extramural training sites should also provide facilities for basic practical skills on the official control of distribution and sale.

In the course of the intramural training, practical aspects of the production technology of foodstuffs of animal origin are taught partly at the Department of Food Hygiene, where a new teaching laboratory has been established for this purpose, and these are also demonstrated on a contractual basis at the training unit of a technical vocational school for food technology (see later in sub-chapter 6.1.7.).

4.1.6 RATIOS

These must be delineated from Tables 4.1, 4.2 and 4.3.

For explanation about ratios, see the section 'Main Indicators' of **Annex I.** The indicator derived from the ratios established is the denominator when the numerator is set to 1.

4.1.6.1 GENERAL INDICATORS OF THE TYPES OF TRAINING

As indicated in Tables 4.1, 4.2 and 4.3, the figures for the numerators and denominators are defined as follows:

Figure	Total number of teaching hours
A	Lectures
B	Seminars
C	Self-directed learning
D	Laboratory and desk-based work
E	Non-clinical animal work
F	Clinical work
G	Other

Please give the following values:

		Denominator
R 6:	$\frac{theoretical\ training\ (A+B+C),\ \sup ervised\ \ practicals}{training\ (D+E+F)} = \frac{3394}{2380} = \frac{1}{0.7}$	0.7
R 7:	$\frac{clinical\ work\ (F)}{laboratory\ and\ desk\ based\ work + non-clinical\ animal\ work\ (D+E)} = \frac{1026}{1354} = \frac{1}{1.32}$	1.32
R 8:	$\frac{self\ \ directed\ learning\ (C)}{teaching\ load\ (A+B+C+D+E+F+G)} = \frac{465}{6112} = \frac{1}{13.14}$	13.14

4.1.6.2 SPECIAL INDICATORS OF TRAINING IN FOOD HYGIENE/PUBLIC HEALTH

		Denominator
R 9:	$\frac{total\ no.\ curriculum-hours\ Food\ Hygiene/\ Public\ Health^{2}}{total\ no.\ hours\ vet.\ curriculum^{1}} = \frac{340}{6112} = \frac{1}{17.97}$	17.97
R 10:	$\frac{total\ no.\ curriculum-hours\ Food\ Hygiene/\ Public\ Health^{2}}{hours\ obligatory\ extramural\ work\ in\ veterinary\ inspection^{3}} = \frac{340}{160} = \frac{1}{0.47}$	0.47

Origin of numerators, denominators

1: Total as derived in Table 4.1
2: Total as derived in Table 4.2, Subject 5
3: Figures to be taken from Table 4.5

4.2 COMMENTS

Please comment on:

- the way in which the veterinary curriculum prepares the graduate for the various parts of the veterinary profession, especially under the specific conditions prevailing in your country/region;
- the way the curriculum is structured and reviewed;
- the major developments in the curriculum, now and in the near future;
- the local conditions or circumstances that might influence the ratios in 4.1.6.

We consider that the curriculum leading to the diploma complies with the minimum requirements listed in Directive 36/2005/EC. The new curriculum prepares students to become all-round veterinarians but, by means of rational selections from the electives, students may take their first steps toward a desired specialisation.

There is no need to change the official organisation (the scope of duties of the Vice Dean for Study Affairs and the Education and Accreditation Committee is clearly laid down) responsible for the elaboration and permanent review of the curriculum. Although they have performed relevant and effective work, more emphasis should be laid on quality assurance and quality control, especially in the field of subject co-ordination.

Introduction of the 11th semester led to a great increase in the volume of practical training. The teaching in herd health and animal welfare assessment has also been strengthened in the core courses.

A substantial increase of hands-on clinical hours has been achieved since 2005. The number of intramural hours in the 4th and 5th years has been raised to a 5 times higher level compared to the previous curriculum reported in 2004. This well-organised clinical training provides the students with the possibility of working with both small and large animals under supervision by the teaching staff on a daily basis, being allocated to the different clinical units at the Faculty clinics.

A further considerable achievement is the introduction of spay training at the Department of Obstetrics and Reproduction, which offers a great opportunity for many students to do diagnostic, therapeutic and surgery work and the number of dogs treated increases year by year.

A postgraduate internship year used to be provided by the Government for a couple of years during the previous evaluation period of the Faculty before 2004, which had several limitations and weaknesses such as availability only for the Hungarian students. Due to financial rea-

sons this internship year was later terminated. Finally a fully practical 11th semester was introduced into the curriculum of both the Hungarian and the English programme in the academic year 2011/2012 which completed the clinical hands-on training with 3 blocks of 6 weeks each. Although the farm animal (herd) medicine should be obligatorily fulfilled as one block, students can set up their programme choosing from different 'companion' animal medicine blocks. Although a 'delayed' 11th semester is available for those students who cannot pass their 10th semester exams in time and for those who spend some time abroad (e.g. Erasmus scholars), the 11th term does not cover the whole year, and thus the 4th- and 5th-year students are scheduled at the clinic for the rest of the year. The major pitfall of this system is that the 4th- and 5th-year students, who perform their clinical shifts during the semesters, are missing from some of the lectures and practical lessons. The obligatory clinical shifts occurring in the exam periods are few (2 shifts/student) but sometimes inconvenient, especially for those students who do not stay and learn in Budapest during the exam term.

The establishment of the Mobile Clinic operated by the LAC in Üllő is one of the biggest achievements of the previous period. The curriculum provides 2 events for the students to take part in this small-group clinical training. The gradual development in terms of both instrumentation and personnel led to the improvement of the service and the widening of diagnostic as well as therapeutic procedures performed by the students under supervision.

4.3 SUGGESTIONS

If the denominators in Table 4.1.6 for your Faculty are not meeting the range as indicated in Annex I, **Supplement A**, what can be done to improve the ratios?

We have modernised the instrumentation of the Mobile Clinic by purchasing portable endoscopic sets; therefore, we will be able to visit horse farms as well. However, without a second well-equipped car there is no chance for a further improvement of our service provided for the students and the owners.

In the long run, our aim is to introduce the 12th, clinical semester into our curriculum so that we can provide an even more comprehensive practical training for the students. Another necessary change in the curriculum will be further co-ordination among the topics of the different core subjects in order to omit unnecessary overlaps in topics, and to teach diseases in an integrated way – within the same semester – when applicable. In order to comply with the EAEVE recommendations for clinical training, the practical training, particularly clinical hands-on work, will be augmented in the new revised veterinary curriculum and that needs to reduce the number of theoretical lectures. The increase in practical training will significantly influence the ratio between practical and theoretical training.

Self-directed learning methods as recommended in the EAEVE definition should also be developed and incorporated into the new revised veterinary curriculum.

The number of electives should be increased in the international curriculum to make it easy for the international students to find those subjects which are close to their field of interest.

The number of the clinical shifts of the 4th- and 5th-year students can and should be decreased by harmonising it with the number of the 11th-term students' shifts. This might be done as the requested amounts of intramural hands-on clinical hours have been significantly increased since the introduction of the 11th semester. The optimal solution would certainly be the extension of the curriculum with the 12th semester, which would need governmental approval and financial support. This change would allow more intra- and extramural (clinical) practices and a better organisation of the practical year (all-year rotations) as well as a further decrease of the obligatory clinical shifts of the 4th- and 5th-year students during the semesters and the exam periods. The all-year rotation of students performing the practical year is also desirable for the clinics.

The ‘spaying programme’ should be accelerated by involving more animals for our students. The goal is to provide every student with the opportunity to spay an animal as a first surgeon till the end of the 5th year. Nevertheless, since the programme is supported by the Faculty, this increase in the number of animals would be a financial issue as well.

The Mobile Clinic needs further development mostly in terms of vehicle availability, instrumentation and personnel. These are the prerequisites of increasing the number of events for students. The 12 to 15 farms being in contract with the Faculty seem to be sufficient.

Chapter 5. TEACHING AND LEARNING: QUALITY AND EVALUATION

5.1 FACTUAL INFORMATION

5.1.1 THE TEACHING PROGRAMME

Describe the measures taken to ensure co-ordination of teaching between different departments, sections, institutes and services.

In general, the teaching programme is co-ordinated by the Education and Accreditation Committee and the Vice Dean for Study Affairs. The Committee for Education and Accreditation (which consists of eight staff members and two students) meets almost every two months and discusses actual problems related to different subjects. Recently a subcommittee (Committee for Harmonisation of Subject Contents) has been set up to systematically compare subjects content-wise. In addition to this, the teachers of the departments do the following in order to co-ordinate their teaching between the related subjects:

- Regularly send to each other content lists of subjects.
- Make available for each other the list of suggested textbooks.
- Exchange handouts, self-written texts, and laboratory manuals of related subjects.
- The lecture notes are reviewed by intra- and/or extramural specialists before they are printed.

Very close interaction and regular co-operation exist between some departments such as internal medicine, surgery and reproduction during the everyday clinical work, which has its impact on clinical teaching and on the exchange of information. Exchange of information among clinicians and pathologists exists not only on personal levels but also during daily morning staff discussions and at occasional clinical-pathological staff meetings.

Close teaching co-ordination exists among the Department of Pharmacology and Toxicology, the Department of Parasitology and Zoology and the Department and Clinic of Internal Medicine as well as between other departments (e.g. the Department and Clinic of Surgery and Ophthalmology and the Department of Pathology).

Describe the pedagogical approach of the institution. In particular, describe the use of newer approaches, such as problem-based learning, interactive computer-assisted learning, etc.

The foundations of life sciences (chemistry, physics, biomathematics, etc.) and the normal structure and function of domestic animal species are studied first in terms of clinical veterinary science in order to equip students with the appropriate skills to comprehend preclinical and clinical subjects. The main goal of instruction is to provide a solid foundation for further veterinary training in the basic sciences. Most of the basic subjects are taught by veterinarians. In addition, special emphasis is put on the basic concepts of life sciences, such as experimental demonstrations of the theories and laws in the course of laboratory instruction, visualisation of phenomena of the invisible world of molecular interactions, historical aspects and demonstrating the fact that the current level of human knowledge results from a long process, quantitative relationships by solving numerical problems, as well as creativity in the laboratory by performing individual work. References to the basic subjects are given in the preclinical and clinical subjects.

Clinical references are given during lectures on, and presentations of, anatomical structures to first- and second-year students. For higher classes, several optional courses as joint projects of the Department of Anatomy and the clinics are taught by a problem-based approach. All students are presented with a hands-on approach by working with horses in the National Riding School in the first two weeks of their (anatomy) studies.

Theoretical topics are dealt with in formal lectures and there are two other ways of presenting physiology. There are compulsory practical labs and a special type of self-directed education. A triple approach has been introduced into the practical labs to live up to animal right expectations: the practical material is mastered first on computer-based, interactive (problem-based) units, then students carry out human self-experiments, followed by animal experiments as the third part of the practical. This method lives up to the 3R principles set out by the EU: refinement, replacement, and reduction of animal experiments while maintaining the value and importance of experiences with hands-on animal experimentation.

More than 4,000 cases (farm animals, zoo animals, pet animals, including birds and reptiles) per year are investigated by macroscopic, microscopic and electron-microscopic examinations at the Department of Pathology, providing an outstanding possibility for students to gain profound knowledge in pathological alterations occurring in different diseases. A large and constantly increasing number of the cases are biopsies (excised tumours, fluid smears, etc.) sent or brought in by field veterinarians, owners, and institutions.

The Central Library and the Department of Biomathematics and Informatics are the leading units in creating an interface with the outside world via innovative information technology. Their subjects aim to provide students with practical computing skills and reviewing the literature, including the use of library resources, electronic catalogues and databases. The students can gain knowledge about Internet searches focusing on veterinary and zoological information, the use of reference software and the preparation for thesis writing. The method of teaching is practice oriented. After showing students databases, web pages, search tools, and the technique of searching in them, a search example follows, and then course participants are given tasks which they have to solve on their own with the aid of the tutor librarian.

The Faculty has introduced new teaching methods and information systems like multimedia teaching, computer- and problem-based learning. Two departments (Physiology & Biochemistry and Anatomy & Histology) have developed internationally acknowledged marketable multimedia materials, CD-ROMs (Veterinary Physiology, Anatomy with Apple, HistoClick, Anatomia canis, MicroClick) in Hungarian, English, German and Spanish. Also, interactive computer-assisted learning is available to the students in dedicated multimedia laboratories of these departments. In many cases (e.g. physiology and biostatistics) a website has been established which includes online help and pointers to other useful reference material. Lecture slides and practical guides of numerous subjects are made available for the students (these can be downloaded from the course home page in different formats).

In paraclinical and clinical subjects lectures are provided using PowerPoint presentations, including a large amount of self-made digitised photos and videos. Some illustrations from other commercial sources (e.g. on CDs, videotapes and sound recordings) are also applied. Thus, students can follow the lectures more easily, and they can better orientate themselves in the huge material of textbooks and lecture notes when preparing for exams.

During lectures on internal medicine, only the most important diseases are taught with special regard to emphasising the most relevant information and refreshing/synthesising the necessary, previously learned knowledge of basic and paraclinical subjects. A problem-oriented approach is used when discussing the diagnostic and differential diagnostic aspects of diseases. Ethical aspects of veterinary practice are also emphasised.

Regular clinical demonstrations on patients are held in the framework of lectures with teacher and student interaction. Online Internet sources (Consultant Database of Cornell University, Winspirs, Medline) are also applied during these demonstrations, especially for differential diagnostic and problem-oriented clinical work-up of the patients, and to teach students how to use these sources during their future clinical work.

A problem-based approach is used during the clinical and pathological demonstrations and during the time that the students spend working individually in the small animal hospital. Strong

interaction between students and teachers is present during this hospital work, especially because students are required to examine and treat their own patients under the guidance of the supervising clinician, and must write a case report at the end of the work.

During the lectures of food hygiene mainly PowerPoint presentations are used, supplemented with video demonstrations where available. In the framework of the practicals the fundamental methods of food safety and quality evaluation are taught to ensure a hands-on experience in numerous important fields (e.g., food microbiology, chemical food safety, food spoilage and preservation, processing technology and examination of milk and meat products, meat inspection, official controls of establishments and foodstuffs). In the future, we aim to increase the proportion of manual work and use the problem-solving approach during the practicals.

Indicate the extent to which course notes are used to supplement or substitute for the use of standard veterinary textbooks.

Course notes, handouts and practical guides are regularly written and distributed (approved by the Committee for Education and Accreditation), and they are highly welcomed by the students. Notes are very useful for students especially in subjects where the recommended voluminous, international textbooks contain much more information than expected from the students at midterms or examinations. However, none of the lecturers seeks to substitute the standard, international veterinary textbooks. Efforts to supply students with notes, handouts and CDs only further the better understanding and easier learning of the subject-matter. Textbooks of library informatics, developed especially for these courses, are available both in Hungarian (also on the Internet) and in English. However, this is only an aid to solving practical tasks by using the databases and the Internet.

Describe (if applicable) any established or contractual arrangements that support undergraduate teaching between the Faculty and outside bodies, e.g. farms, breeding centres, practitioners, state veterinary services, factories/processing plants, outside laboratories, etc. Briefly describe how these arrangements work out in practice in terms of the contact this provides for all students or for selected students.

Teaching basic subjects by itself requires little interaction with extramural firms and institutions. The teaching/research contract of the Department of Anatomy with the National Riding School has several advantages for students. In teaching physiology, substantial control is ensured by the co-operation between the Department of Physiology and the Hungarian Physiological Society (HPS). Since 1993, the Department has been the official organiser of the teaching and computer-based learning (CBL) sessions provided at the annual meeting of the HPS. This department established agreements with many European and overseas veterinary physiology departments in order to exchange teaching materials and methods. As a result, up-to-date CBL programmes became available at nominal fees instead of at commercial prices.

Contract research conducted by the Department of Chemistry and the Department of Parasitology and Zoology for Hungarian pharmaceutical companies ensures additional sources for the departments in maintaining and development of the infrastructure; this co-operation is beneficial, both directly and indirectly, for teaching, as well.

Extramural co-operation and strong teaching harmonisation exist between European veterinary schools where physiopathology is taught. For example, shared handouts in English are prepared with Košice (Slovakia), Brno (Czech Republic) and Ljubljana (Slovenia).

In the area of clinical pathology several contacts exist with companies supplying laboratory equipment. Their representatives offer some elective lectures for students. The two-hour visit

at an outside laboratory of a human hospital also offers a good possibility to increase teaching activities.

Several students prepare their diploma work on microbiology in partner institutions, e.g. the Institute for Veterinary Research, the National Food Chain Safety Office, etc. There is no formal agreement with these bodies, nevertheless the co-operation with them works successfully.

As regards the teaching of genetics, a contractual agreement with the National Food Chain Safety Office and the National Riding School facilitates undergraduate training in horse breeding practices. The outside farm of the Veterinary Faculty in Üllő also provides facilities for practical training in anatomy, physiology, animal husbandry, nutrition, genetics, etc.

Contracts are not always required, but the relationship is formalised via an exchange of letters of intent (European Association for Animal Production, International Society for Animal Hygiene, World Association for Buiatrics).

No outside institutions are involved by contracts in clinical teaching; however, non-academic lecturers are occasionally invited to give lectures on internal medicine and clinical diagnostics, sometimes even from abroad. Several electives are taught by non-academic clinicians. Joint research is conducted together with human medical institutes, especially in the framework of projects financed by national research foundations.

The Department of State Veterinary Medicine and Agricultural Economics has a live contact with the State Secretariat for Food Chain Supervision and Agricultural Administration of the Ministry of Rural Development. The Chief Veterinary Officer delivers lectures in state veterinary medicine every academic year and all the relevant legal proposals are sent to the Department for comment. Another good forum to keep a continuous professional connection between the Faculty and the state veterinary service is the State Veterinary and Forensic Medicine Association, which is a member organisation of the Hungarian National Veterinary Association, where the epidemiological and state veterinary actualities are discussed by the two parties (lecturers, scientists and officials). The head of the member association is the head of the Department of Food Chain Supervision of the Ministry of Rural Development and its secretary is the head of the Department of State Veterinary Medicine and Agricultural Economics of our Faculty.

At the Department of Food Hygiene there are two qualified laboratories, a GLP residue laboratory and a microbiological laboratory accredited by the National Laboratory Accreditation Board. These units, serving the scientific research and generating income from contract research work done for the food and pharmaceutical industry, yield additional sources for the operation and development of the department. The department has a close teaching and research co-operation with the National Food Chain Safety Office where students can also prepare their diploma work. Similarly, there is a useful co-operation with the Hungarian Association of Food Hygienists; attendance at their relevant scientific programmes is free for our students.

The faculty made a contract with the Ministry of Rural Development in order to support extramural practicals of State Veterinary Medicine, Laboratory Diagnostics, and Food Hygiene.

The FVSB has numerous contracts with private clinics, where some veterinarians are hired to carry out practical training of students.

Describe the general learning objectives underlying the veterinary curriculum and how this is ensured.

As stated in the Rules of Study and Examination by the Faculty Council, the learning objectives of the curriculum aim at giving a solid theoretical and practical knowledge enabling the graduates to successfully practise as veterinary surgeon. To achieve this goal, students must learn ‘day-one’ veterinary skills acquiring approaches to solve a diagnostic problem, including the taking of samples and the interpretation of laboratory test results. Learning ob-

jectives are achieved through theoretical lectures, practical demonstrations and practicals in small groups using laboratories, dissection and necropsy rooms. Practical hands-on training is also provided through intra- and extramural fieldwork. These educational goals of the Faculty are in line with the recommendations made by the EAEVE and partly by the American Veterinary Medical Association (AVMA).

Describe how the Faculty collects the data required to ensure students are equipped with these day-one skills (evidence of learning).

The Faculty collects the following data to ensure students are equipped with the day-one skills and for further development of the curriculum towards fulfilling the EAEVE Day-one competences.

The Civil Senate, an advisory body for the Rector, can make suggestions at any time directly to the Faculty or through the Rector. Suggestions related to the training programme are discussed and approved by the Education and Accreditation Committee, then forwarded to the Faculty Council and the University Senate. The Dean and Vice Deans regularly meet with the leaders of the Hungarian Veterinary Chamber to get information about the activity of the graduated students which is a useful feedback to the Faculty. Decisions on the functioning of the Faculty in the context of its educational mission are also made after consultations with the Hungarian Veterinary Chamber. This approach is very helpful in adjusting the teaching process to the actual needs of the job market.

The Education and Accreditation Committee constructively and carefully analyses the feedback from the online student evaluations, external examiners, evaluation committees and the above-mentioned advisory boards, and initiates measurements based on the recommendations received. In addition, the Deputy Deans for Study Affairs and Clinical Affairs are particularly asked to consider the course evaluations given by the students and the external examiners.

Supervisors of extramural practicals are regularly invited once a year to a discussion where they can share their experiences on the level of training.

The opinion obtained from graduating seniors and alumni about educational preparedness, achievement of day-one skills and satisfaction stemming from their veterinary work is also considered. Within the framework of the SZIU, the FVSB developed a career tracking system a few years ago, where alumni can provide useful feedback.

5.1.2 THE TEACHING ENVIRONMENT

Describe the available staff development facilities, particularly in relation to teaching skills.

In general, there is no organisational unit that is specifically devoted to staff development. However, there are some subject-oriented, well-organised, group-based courses of continuing education for the Faculty members, e.g. in the area of biostatistics offered by the Department of Biomathematics and the Veterinary Science Library, Archives and Museum. A subject on pedagogy is offered to PhD students, several of whom become staff members. Introduction of a new programme focusing on teaching skills is our intention in the foreseeable future.

Another way of staff development is to become a member in a national professional organisation and the regular participation at scientific conferences. Most clinicians are active members of the Hungarian national professional organisations: the Hungarian Small Animal Veterinary Association, the Hungarian Equine Veterinary Association, and the Hungarian Association

for Buiatrics are chaired mostly by staff members of our Faculty. Another clinics-oriented national organisation is the Hungarian Society for Animal Reproduction (HSAR), also providing a good chance for continuing education of our clinicians. Some of them are also members of various international professional organisations, such as the European Society of Domestic Animal Reproduction (ESDAR), The European Veterinary Society for Small Animal Reproduction (EVSSAR), the International Society of Animal Clinical Biochemistry (ISACB), the World Association for Buiatrics (WAB), the World Physiological Society (WPS), the Hungarian Laboratory Animal Science Association (HLASA, full member of the FELASA). Some members of the Faculty's staff have been elected to certain leading positions in these organisations.

Many clinical staff members are strongly motivated to become internationally recognised specialists and members of the relevant European college(s). Some of our clinicians have already managed to become a European diplomate. Several diplomates of our Faculty are in leading positions in these European colleges.

The Annual Research Conferences organised by the Veterinary Board of the Hungarian Academy of Sciences belong to the most important events of staff development. These conferences of more than 40-year tradition are attended by scientists of Hungarian veterinary research institutions, including the major part of our Faculty staff. These meetings are focused on the current research achievements of the Hungarian veterinary community, and thus they influence the subject-matter of the veterinary training.

A non-organised but still important and beneficial fact in the direction of staff development is that staff members frequently attend each other's lectures and/or plenary practices in order to get a sample of their colleagues' teaching style.

Also, regular participation at Hungarian and international continuing education courses and certain phases of research performed in international co-operation keep teachers motivated to improve the quality of their teaching.

Although the staff development is often not formally organised, there are numerous opportunities available to the Faculty members to participate in the continuing education.

Furthermore, the strict and regular evaluation programme of academic staff members, introduced about 20 years ago, also gives a continuous motivation for self-development.

Describe the available systems for reward of teaching excellence (e.g., accelerated promotion, prizes, etc).

Teaching is evaluated by the students officially. Although these students' opinions have no immediate consequence on the career of a staff member, in the long run they do have a serious impact on assessment and related promotions. One benefit is the 'good rumour' about someone, who is respected by the students and is declared to be the 'best lecturer' or the 'best practical teacher' in a certain semester. Sometimes, however, these students' opinions are looked at with a degree of criticism. One has to admit that this is possibly one of the weakest points under this chapter. Neither official ethical appreciation nor financial support is given to those who excel in teaching. However, based on the results of the students' opinions the dean sends a letter to the head of department if the mean point of the evaluation is less than 3.5 for the department, subject or teachers to prepare a plan for improving the quality of teaching.

Describe other measures taken to improve the quality of teaching and of learning opportunities.

In departments of basic sciences, a continuous improvement in teaching quality can be observed, triggered by the rapid development of life sciences. Since 2004, considerable progress has been made in the following aspects of teaching:

- more individual work is required from the students,
- information technology and computer-based teaching has become an everyday practice,
- involvement of undergraduate students in research is increasing in the framework of the Scientific Students' Association: on average 40% of the undergraduate students take part in it,
- independent study using the library's improving services is gaining bigger importance,
- elements of problem-based learning and self-learning have been introduced into many subjects,
- fundamentals of veterinary practice and clinically-oriented subject-matter are being built into basic subjects,
- an increasing number of elective subjects reflecting the students' interests have been launched,
- a lot of students have laptops and can get access to WIFI on the campus,
- many subjects update their theoretical and practical materials on a regular basis,
- many departments communicate their subject matter or part of it via the Internet or Intranet,
- despite insufficient financing by the state, the large and small animal clinics provide excellent preconditions for clinical teaching,
- the equipment of student labs was substantially modernised through purchasing new instruments by the departments,
- the professional excursions in the country offer the teachers opportunity and time to discuss many topics with the students in a sociable atmosphere,
- more and more teaching materials are available for students via the Internet.

The lack of foreseeable annual financial resources hinders the departments in planning the necessary infrastructural developments. Thus, the departments are forced to use a part of their research grants for educational purposes.

Habilitation (Latin *habilis*, 'fit, proper, skilful') is a medium academic qualification level a scholar can achieve by his or her own pursuit in Hungary. PhD and habilitation are qualifications granted by the university, while the highest academic qualification level (Doctor of Sciences, DSc) is granted by the Hungarian Academy of Sciences. The requirements of habilitation are as follow: a teaching and scientific activity of minimum 5 years after receiving a PhD degree, publication of research papers in peer-reviewed journals resulting in a cumulative impact factor of more than 8. The teaching record and ability of the habilitation candidate are also evaluated (i.e. results of students' evaluation, development of teaching materials, writing books, etc.). The candidate must prove his/her preparedness in front of an academic committee of six to eight professors (consisting of Faculty members and invited researchers of the field) by a standard, 45-minute lecture presented in Hungarian (evaluated also by the students), and by a 20-minute scientific presentation (in English) on his/her own field of research, which is followed by an open debate. In a closed hearing after the open session the candidate must outline his/her teaching and research plans and ideas. The panel of peers evaluates the candidate by secret voting according to a scoring system, where at least 66% of the maximum level must be achieved for approval. Habilitation is a prerequisite of senior lecturer appointments (i.e. associate professor, full professor) at the Faculty.

5.1.3 THE EXAMINATION SYSTEM

Describe the examination system of the Faculty, in particular:

- Is there a central examination policy for the Faculty as a whole? If 'yes', by whom is it decided?

The examination system is part of the curriculum, which is decided by the same bodies as the curriculum. The examination system includes comprehensive examinations covering several

semesters, examinations and midterms. Examination procedures are outlined in all three languages of education in an annual Students' Guide which, together with the Faculty Code of Studies and Examinations, serves as a framework within which departments can define their additional requirements. It is also available on the homepage of the Department for Study Affairs.

- Are there special periods (without teaching) during the year for examinations?

Teachers as well as students of the Faculty have to follow the rules specified by the Rules of Study and Examination. There are six-week examination periods without teaching after each semester.

- What form(s) of examination are used (written papers, multiple-choice questions, oral, practical, clinical examination, continuous assessment, etc.)?

Several midterm tests are held in anatomy, biochemistry, physiology, pharmacology, parasitology, infectious diseases and genetics in order to give students a chance to judge their knowledge level.

The semi-final examination is about topics encompassing the whole term's work. At the end of the term the students select an examination date from a wide range of available dates determined by the departments. The chosen date is permitted to be modified once by the student. In the theoretical and practical parts the students are examined by different members of the staff. Failed exams can be retaken twice during the exam period (the same is true for comprehensive exams).

The comprehensive examination covers the content of the whole subject as taught, instructed for more than one semester. For most subjects an oral examination (with a simple-choice 'entry test' at some departments) is held with 30- to 40-minute preparation and 30- to 50-minute examination. A list of comprehensive examination questions is available for students from the beginning of the course or at least two months before the exam. The comprehensive examination is held in front of an exam committee consisting of at least two staff members.

Specificities of clinical exams: the clinical exams consist of a theoretical (oral) and a practical part (on animals), involving one to three examiners at the clinics.

In the case of certain subjects oral exams are preferred to written exams in order to develop the students' ability to verbalise their thoughts, since they have to dictate postmortem reports and explain disease cases, treatments, preventive measures and experiences to farmers, pet owners and colleagues.

There are departments where written examination has been introduced as the single form of knowledge testing. For instance, at the Department of Physiology and Biochemistry, in order to decide whether or not the principles and regulatory mechanisms were well understood, eight midterm tests are held over the course of the two semesters. The system and form of these midterm tests are identical with those of the comprehensive exam. Each exam has three parts, such as: (1) a simple-choice test, (2) analysis of a figure focusing on a regulatory process, and (3) an essay (maximum 2 pages) focusing on the underlying principles of a complex phenomenon.

- Is use made of external examiners?

Some exams including state exams are also held by a committee of external examiners. In case of the second and/or third retake of a failed exam, students may request another examiner. The extramural practical activity is evaluated by the practitioner where the student performed his/her practical work, together with the Faculty's representative.

- How many retakes of an examination are allowed?

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

- Do students have to pass the examination within a certain time?

There is no time limit for passing examinations.

- Do students have to pass an examination before they can start other courses?

The curriculum is based on a prerequisite system. Depending on the subject, students have to pass more or less examinations before they can start other courses. The subjects which are prerequisites are listed in the Rules of Study and Examination.

To remain on the course, students must collect at least 40 credit points during the first two active half-years (active means that the student officially participates in the teaching), and collect at least 120 credit points including the credit points of all the successfully completed obligatory subjects of the first four semesters of the model curriculum within a period of maximum six semesters.

5.1.4 EVALUATION OF TEACHING AND LEARNING

- Describe the method(s) used to assess the quality of teaching and learning in the Faculty.
- Indicate whether the evaluation is a Faculty procedure, or one set up by individual departments, by students or by individuals.
- Indicate the use of external evaluators.
- Describe the role of students in the evaluation of teaching and teachers.
- Describe the follow-up given to the evaluation.

At the national level, the quality of higher education is assessed by the Hungarian Accreditation Committee which is a governmental body. The Faculty was evaluated in 2012 and, based on the self-evaluation report and results of the visit of the Accreditation Team, has received accreditation.

The ISO 9001:2009 quality control system was introduced in 2012, improving the coordinated quality management in education and other fields of the Faculty.

The evaluation of the teaching activities of the academic staff is set up on three levels.

Every year a periodical employee evaluation is conducted (including the entire personnel) by using three types of evaluation sheets (leading instructors, assigned instructors, other employees). On department level, making this evaluation is the task of the head of the department. The department heads are evaluated by the Dean.

An online evaluation procedure organised by the Faculty for each course is conducted by the students at the end of the course. This procedure comprises the evaluation of didactics, lecturers, student preparedness, student workload, students' appreciation of the relevance of what has been learned, and suggestions for course improvements. The results are available for the management of the Faculty and the head of the department who use it in the evaluation procedure.

Student evaluation was started in the early 1980s, when the Veterinary Student Association initiated a survey. This survey only focused on electing the best practical leader and the best lecturer of each year. At that time we had only 5 classes for the five years of Hungarian students. After starting the German and the English programme, this survey was extended to the foreign students. Later on the students wanted to write suggestions to teachers. Finally the Dean decided to launch an online system for Student Evaluation of Teachers (SET). The SET had predefined questions for lecturers, practical leaders, examiners, and also for the relevant department. Students can give points from 1 to 5, where 1 is the worst and 5 is the best. Also, free text can be added with critical comments and suggestions for teachers and departments. The SET was started in 2006. It is open for students for a 6- to 10-week period when students can evaluate teachers of the previous year. The system will be revised and fine-tuned in the autumn period of 2013. The students can also use an online evaluation system, in which they can evaluate the practical places and practical leaders of the 11th practical semester. This evaluation concerns the evaluation of didactics, lecturers, student preparedness, student workload, students' appreciation of the relevance of what has been learned, and suggestions for course improvements. The results are available for the management of the Faculty and the head of the department who use it in the evaluation procedure.

There are several subjects, which are evaluated at the end of the course. These evaluations are managed by the relevant academic staff members.

There is a need and also a demand from the academic staff for a thorough and fair evaluation system and also for rewarding teaching skills. There is a well-elaborated evaluation system for promotion purposes (based mainly on research activity), but fair evaluation is complicated by the fact that at the Faculty the teaching staff is composed of three *de jure* different groups: academic staff, research staff and clinicians. It should be emphasised that the participation in education work is not dependent on, and is not reflected in, the *de jure* status of a staff member. In practical terms, in most departments each staff member has the same duties and has to meet the same expectations in education. In contrast, however, welfare conditions (i.e. the length of holidays), conditions of promotion, expectations in research activities and scientific output are different, hence the members of the three different groups do not have equal chances in developing their careers.

Twenty years ago a scoring system was introduced to regulate the career tracks at the Faculty. Since its implementation the system has undergone the scrutiny of several board evaluations including Hungarian and European accreditation procedures.

According to our Mission Statement, the main tasks of the Faculty are teaching, research and services. Best suited to these goals and to the potentials of available human resources, we have distinguished between academic, research and other career tracks.

An academic career track requires a continuous activity in teaching and research as expressed by points. All aspects of teaching, such as the number of contact hours, the preparation of teaching materials, computer programmes, books, book chapters etc. are periodically checked and scored by points. This is completed by yearly online student evaluations of the quality of teaching and examinations. Scientific output is assessed by the cumulative impact factor of publications during the period examined. Minimum impact factor values are assigned to each academic and research position. Also, promotions require the continuous fulfilment of teaching and research criteria. A further important aspect of the system is its differential approach. For the basic science departments, score numbers in teaching and research are set higher than for the paraclinical or clinical units where services (clinical, public health, food safety, etc.) add to teaching and research. The basic rule, however, remains that academic and research career tracks require continuous activity in teaching and research. As to the clinics and paraclinical departments, the system appreciates practical work by shifting accents to the locally important elements.

All academic and research positions at our Faculty are bound to a documented and approved knowledge of working English (and possibly German). Foreign-language proficiency is absolutely necessary in our international academic environment and maintains the success of our English- and German-language veterinary programmes now having more than 800 international students from all over the world.

In the past years, the system proved to be sufficiently demanding and stimulating but sufficiently flexible to enable each staff member to develop their personal career along individual preferences and capabilities. Education-oriented persons can find their place in the same way as their more practice- or research-minded colleagues. The higher number of points in one field can compensate, to a defined extent, for less points in others.

Although our evaluation system is a clear guide for those who embark on an academic career, it has been realised that some staff members are less inclined to multilateral activity. For good teachers, devoted scientists, excellent practitioners, who can meet criteria only in their primary field of interest, the system defines some non-academic career track. These jobs are also needed for the smooth operation of the Faculty but are not convertible into academic or research positions.

Each year, the Education and Accreditation Committee, together with the Vice Dean for Study Affairs, assesses the curriculum and its courses and prepares proposals on changes of the curriculum and course plans, including exam forms, content and teaching for the Faculty Council.

The evaluation of teaching feedback from recent graduates is also considered. The Career Tracking System of the University follows up on the employment and career progress of University graduates through online questionnaires directed at recent graduates within a year after graduating and subsequent follow-up surveys in each third year. Data on the employment of recent graduates have been collected since 2010, and the first two reports on the results were published in 2011. Unfortunately, so far the response rate has been very low; however, the responders have given valuable remarks and suggestions for improving the curriculum. The new management encourages increasing participation of alumni with taking more active and abiding interest in developing the teaching and progress of the Faculty so as to contribute towards enhancing the social utility of the Alma Mater.

5.1.5 STUDENT WELFARE

Describe any measures taken to protect students from zoonoses (e.g. rabies) and physical hazards.

All newly admitted students have to pass an obligatory medical examination. Students are covered by the same legislation as all university employees. The Faculty has adopted a policy of instructing students during the first classes of each subject on the rules and safety regulations obligatory in a laboratory and at the clinics. Class teachers are required to familiarise students with the equipment for practical exercises, the principles of its use and any potential health risks. Students are also instructed on preventive measures and the ways of proceeding in cases of health or life risk. Students of the 4th and 5th year must have health insurance and liability insurance, too.

The Faculty does not organise mass prophylactic vaccination campaigns against zoonoses for students and academic staff since the epidemiological situation does not make this necessary. Upon request, an individual can be vaccinated against diseases, e.g. rabies. The prevention functions under the general rules of the healthcare system and health insurance.

Students working in a clinical environment or at any agricultural enterprise are briefed on basic techniques of animal handling and restraint, are required to wear disposable latex gloves, apron or special protective clothes, and are taught all the basic principles of safety in a veterinary clinic (such as to never put back the needle cover on to the syringe needle after doing a blood collection or a parenteral treatment, how to dispose of biological waste, etc.). When going to a farm, students are required to wear safety boots (with metal protection at the tip of the foot), to wear rectal palpation gloves when performing rectal examination, and to wear latex disposable gloves for the handling and restraint of large animals. Every time students enter the necropsy room, teachers and authorised personnel must explain to them what basic rules are to be followed there. These are also described in a leaflet on the entrance door of the room. Access to the necropsy room is allowed only if the following rules are observed: students must be authorised to enter the necropsy room by a teacher or authorised personnel; students must wear suitable, disposable overalls, gloves and footwear, students must not leave bags or anything else outside suitable lockers; long hair must be put up; necklaces, bracelets or anything else must not come out of the overall and gloves; hands must be washed every time a job is finished and before leaving the room; at the end of the job, tables must be cleaned, equipment washed and dried and put back; personnel must be informed of any accident. In the necropsy room it is also not allowed to smoke, drink, and eat. Disinfection is compulsory in all classes and at all clinics where infection can occur. In laboratories using chemicals, eye washing access is provided.

Describe the facilities (not related to the teaching programme) which the establishment provides for students.

A new student centre was opened with cafeteria and wireless Internet access in 2011, offering comfortable areas for eating, relaxing or studying. There are sports facilities such as a gymnasium, fitness centre and sauna on the campus. The University Sports Services also offer the students a variety of sports facilities from early morning until late evening. Lots of Hungarian and foreign students are members of different sports (e.g. basketball, football, water polo) teams representing the Faculty in local and national competitions.

A large attic space at the Department of Anatomy and the 'Armand Kemény' Multimedia Laboratory at the Department of Physiology and Biochemistry, as well as the Central Library, are excellent environments with free access for our students daily from 8 a.m. to 6 p.m., and also at the weekends if requested. In these places not only multimedia teaching materials, programmes and anatomical specimens can be studied, but computer facilities are available for other purposes, too. Several students (also from higher classes) use these pleasant sites for either getting prepared for their next task or simply to relax. There are rooms for students to sleep in while on the night shift at the SAC and the LAC.

There are 96 rooms each with 3 beds for the Hungarian and foreign students in the 'József Marek' Training Centre and Student Hostel, where 30–40 ERASMUS students are accommodated yearly. On each floor of the hostel there is one kitchen, 5 washing machines and one study-room for 16 students. There is a computer room for the students with 13 computers and wireless Internet access in the building. The students can join in several cultural (e.g. dancing, photo, singing or bible group) and sports programmes organised by the local student committee. There are two well-equipped fitness rooms, one for men, the other for women. Behind the building there is a sports court for playing handball, football and tennis. The students have an opportunity for outdoor cooking and grilling in the garden.

There is a Students' Centre open on weekdays at the campus, where a cafeteria can be found and students can use the internet or have some relaxation. A students' club provides entertainment and social programmes at the weekends.

Describe the guidance offered by the Faculty (or its parent institution) for students with problems (social problems, study problems) as well as for future career development or job selection.

The Faculty is greatly aware of the most common problems that students may experience, and does its best to help them early with their problems. There is a close co-operation between the Faculty and the Veterinary Student Association. The personnel of the Department for Study Affairs help students solve numerous, commonly occurring problems, e.g. the provision of information to new students, the protection of students' legal rights, the registration of completed studies, the recognition of studies completed elsewhere, retakes of examinations, and communications on academic affairs. Personal support is continuously offered to those in need. The students are informed whom to contact if further actions are needed. Teachers at the Faculty are approachable through e-mails and personally during their reception hours reported on the website of the department. Also, all departments offer consultation possibilities if requested by the students. Each class has a mentor, generally a young assistant, who can help the students solve their problems or report it to the Faculty management.

In general, students are fairly well aware of the wide range of career opportunities. A variety of veterinary careers is presented to the students early, at the beginning of their studies, and is discussed throughout.

For handicapped students, there is great flexibility in the method of taking an exam. Some students (with financial problems) get the chance to assist in cleaning work and so collect vouchers for books.

Students of the 4th and 5th years must have both health insurance and liability insurance.

An official link among Hungarian-, English- and German-speaking students is the Faculty Council and the Student Council.

5.2 COMMENTS

Please give general comments about the quality of the teaching programme under the above headings.

The system of teaching at the Faculty has its roots in the traditional German 'lectures + practical' type of approach. Due to the Anglo-Saxon influence our system is loosening up and over the past two decades substantial changes have occurred, but still the old type dominates with its advantages and drawbacks. In short, the advantage is a systematic build-up of knowledge and a continuous monitoring of progress by frequent examinations, while the disadvantage is the lack of taking advantage of the large potential of students' creativity and students' own contribution to their training. The great amount of lexical requirements can cause some students to lose interest in further studies and in the problem-solving way of thinking.

In the spring of 2013, the Vice Dean for Study Affairs collected data about the harmonisation of the subject-matters of training among the departments. The evaluation of this survey is currently in progress and the results will be discussed by the Education and Accreditation Committee.

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

departments to analyse them and to share the best ones among the teaching staff of the Faculty. However, there are several feedbacks from students that problem-based learning has been introduced primarily in the practices of the clinical subjects. The management has made a decision to reward teaching excellence based on the online system for Student Evaluation of Teachers. Depending on the availability of financial resources, new laboratories and smaller teaching rooms are planned to open in order to have enough places for small-group seminars. The individual self-learning student work and computerised examinations require the building of new computer rooms.

The continuous decrease of state support in higher education should also be mentioned as a negative factor that prevents optimal development.

5.3 SUGGESTIONS

Further harmonisation of the subject-matters between the departments, parallel with reducing the number of lectures and increasing the tutorial and seminar work, is needed to improve the quality of teaching. A course should be organised for teachers to promote the use of problem-based learning approaches. The Faculty has to take further steps towards the implementation of a 12th training semester. All efforts should be concentrated to achieve this goal which will surely be a remedy for the problems affecting practical training. It is very important that teaching excellence should be adequately rewarded. Besides the research activities of teachers, another evaluation system is also needed in which teaching efforts are better appreciated. To receive better feedback from the students, completing the online evaluation form should be obligatory for all students at the end of each semester. The teaching staff ought to give information to the students about the measures taken to improve the education by considering the students' suggestions.

Chapter 6. FACILITIES AND EQUIPMENT

6.1 FACTUAL INFORMATION

6.1.1 PREMISES IN GENERAL

Please give a general description of the site(s) and buildings occupied by the Faculty and include a map.

The Faculty and its activities are based on two sites:

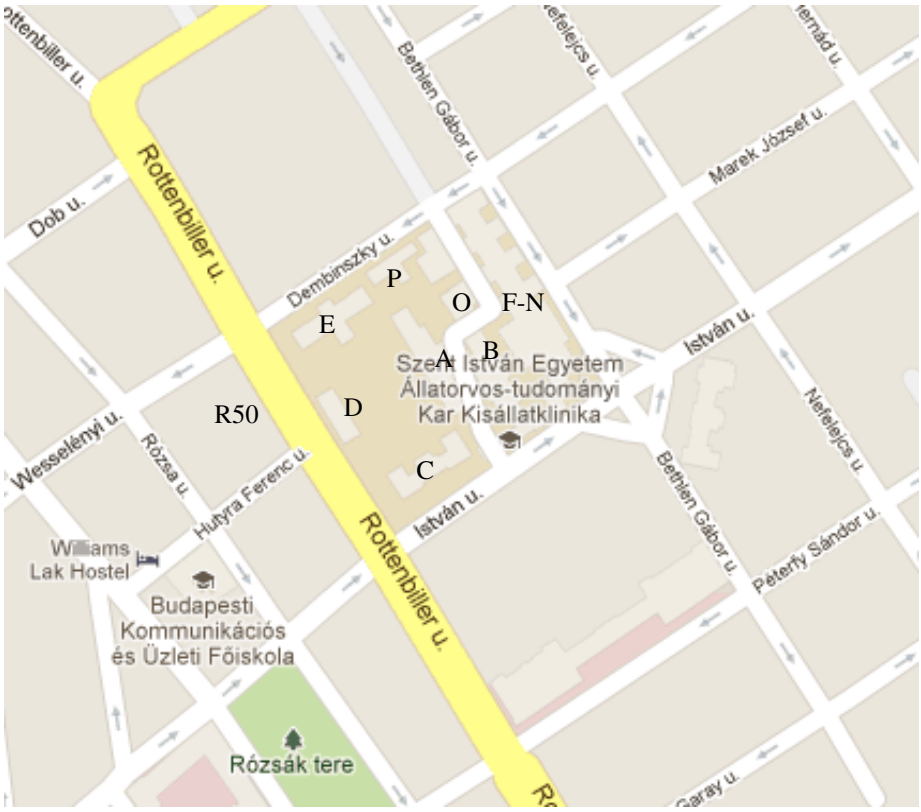
- the main campus in the centre of Budapest (István street);
- the LAC and the Commercial Farm at Üllő.

The central administration of SZIU is located in Gödöllő, the seat of the University, about 30 kilometres away from the Faculty.

The buildings at the Budapest campus are almost all grouped on one site that occupies a city 'block'. They range in age of construction from the last decades of the 19th century (e.g. buildings 'A' to 'E') to the early 1970s (e.g. buildings 'F' to 'N') (see Figure 6.1 and Table 6.1). Several of the buildings are a protected part of the national heritage. Some buildings have been renovated, either fully or in part. However, there is no state funding for such capital expenditure.

The Faculty also has buildings for the Department of Microbiology and Infectious Diseases, and a 'József Marek' Training Centre and Student Hostel, a short distance away from the main campus.

The location of the main campus in Budapest



General presentation of the main campus of the Faculty in the centre of Budapest

No.	Building Code	Destination/ Activities	Level	Subjects/Services
1	A	Education/ Administrative	Ground floor 1st floor	Small Animal Clinic Department and Clinic of Internal Medicine Department of Parasitology and Zoology
2	B	Education/ Administrative	Ground floor	Department and Clinic of Surgery and Ophthalmology
3	C	Education/ Administrative	Ground floor and 1st floor Ground floor 1st floor 2nd floor	Department of Chemistry Department of Physiology and Biochemistry
4	D	Education/ Administrative	Ground floor and 1st floor	Library
5	E	Education/ Administrative	Ground floor and 1st floor Ground floor and 1st floor	Department of Anatomy and Histology Department of Pathology
6	F	Service	Ground floor	Restaurant/Dining Room
7	G	Presentations/ Celebrations	Ground floor	Central Hall
8	H	Administrative	1st floor 2nd floor 3rd floor	Dean's office/Vice Deans' offices
9	I–J	Education/ Administrative	2nd floor 3rd floor	Department of Animal Hygiene, Herd Health and Veterinary Ethology Department of Animal Breeding, Genetics and Laboratory Animal Science
10	K–L	Education/ Administrative	1st floor 2nd floor 3rd floor	Department and Clinic of Reproduction Department of Food Hygiene Department of Biomathematics and Informatics Department of State Veterinary Medicine and Agricultural Economics
11	M–N	Education/ Administrative	1st floor 2nd floor 3rd floor	Department of Foreign Languages Department of Food Hygiene Department of Biomathematics and Informatics, Lecture Hall
12	O	Education	Ground floor	Department and Clinic of Internal Medicine
13	P	Service	Ground floor	Cafeteria
14	R–S	Education /Administrative	Ground floor and 1st floor	Department of Pharmacology and Toxicology
15	R50	Education/ Administrative	Ground floor and 1st floor	Institute for Biology Department of Animal Nutrition

At the Budapest campus, the Faculty has 9 lecture halls with a capacity of between 85 and 130 students (i.e. the full yearly intake for the Hungarian or international course), plus 4 lecture halls that can seat 24–68 students. The lecture halls of larger capacity are in Buildings A (1), B (1), C (2), E (2), L (1) O (1) and P (1) (see Figure 6.2), while the four smaller halls are in Units B (1), M (1) and R50 (2). At the Budapest campus, the Faculty has 22 rooms that can be used for supervised group work. Most of the rooms for group and practical work have places for 14–30

students. The number of laboratories for practical work by students is 7, and they have places for 10–30 students. (The detailed facts are presented in section 6.1.4).

The map of the main campus

The site of the Faculty at Üllő consists of a Commercial Farm and the LAC (see Figure 6.3), the large animal necropsy facility, and a privately-run slaughterhouse. At Üllő there is a lecture hall with 100 places. The LAC has one examination area and one surgical unit for 50 students each, and one examination room for 30 students, where supervised group work can be performed as well.

Like the adjacent LAC, the pathology facility was opened in 2001. There is a necropsy hall of about 300 m², served by a rail hoist and supplied with chilling facilities.

On the first floor of this building 6 rooms (apartments) can house up to 12 guests or students.

The Commercial Farm has an area of around 1,100 hectares and an assortment of buildings that includes accommodation for cattle, horses, pigs and sheep, as well as housing for farm staff, a cheese-making unit, a carriage farm, offices and various barns. The Faculty keeps beef cattle there, but there is no dairy herd. The Commercial Farm – besides its commercial activities – provides farm animals for the LAC for educational purposes (e.g. cows for rectal examinations).

The facilities used for training in the food hygiene disciplines have been mentioned in Section 4.5.

The map of the campus site at Üllő

6.1.2 PREMISES USED FOR CLINICS AND HOSPITALISATION

The information to be entered in Table 6.1 is the number of animals that can be accommodated, not the number of animals used. Certain premises may be used to accommodate different species of animals. If so, the same premises should be entered only once.

The small (companion) animal activity of the three clinical departments (Department of Internal Medicine, Department of Surgery and Ophthalmology, and Department of Obstetrics and Reproduction) had been conducted in a separate building system until 2006 under circumstances detailed by the latest Self Evaluation Report in 2004. In 2006 the new SAC was opened after completely renovating and refurbishing the ground floor of Building 'A' which used to be the former LAC before 2001. Since then the main small animal clinical and 'hands-on' teaching activity of all clinical departments has been concentrated in this 1,400-m^2 building. Although the three main units (Medicine, Surgery and Obstetrics) have formed a common, integrated clinical structure, they are controlled by the relevant departments in close cooperation. The SAC provides both teaching and clinical services, leading to a substantial improvement in the clinical training when compared to the previous system. The SAC contains a common waiting room with a reception area, 7 consulting and 3 treatment rooms, a doctors' and a students' room, rest rooms for on duty, the premises of the Unit of Obstetrics (Diagnostic and Operating Block), Unit of Surgery (Radiology, Orthopaedic and Soft Tissue Operating Blocks), Unit of Internal Medicine (Intensive Care Unit and Diagnostic Imaging Section for ultrasonography, electrocardiography and endoscopy), and the Hospital Area serving all clinical disciplines (four wards and an in-house quarantine ward). As the surface area within the new clinic is limited, the functions listed below have been directed to other buildings of the campus:

- The *infectious unit* for dogs and cats with isolation wards has been implemented in Building 'M' in the place of the former small animal hospital of obstetrics. This unit is fitted with separate equipments and isolation facilities (e.g. protective clothing) in order to prevent the spread of contamination during infectious patient care.

- The surgical ambulatory block (reconstructed in 1997) in Building 'B' houses some special *consultation services* not closely related to hospital and central diagnostic services, like ophthalmology and dermatology.

- The former unit of the ambulatory section of the internal medicine clinic (in Building 'B') is functioning now only for *exotic companion animals*. A hospital for birds, small mammals and reptiles is also planned here for patients requiring long-term treatments.

- Building 'O' houses the *Diagnostic Laboratory* including the *Pathophysiology Laboratory for Students* (which also needs reconstruction in the future).

- Operation theatres of the former small animal hospital of obstetrics (in Building 'M') serve for *practical teaching*, and teaching rooms for practical work with groups of students and for clinical demonstrations are being constructed in the same unit. A new *lecture room* on the site of the former large animal hospital of obstetrics (also in Building 'M') has been built. The former operation theatres of surgery in Building 'B' now serve for *surgical practical teaching*.

The LAC in Üllő, approximately 30 km far from the main campus, was opened in 2001 after moving all large animal clinical activities from the István street campus. The hospital area has a central part, served by two parallel access corridors, with six wings (three on each side) for animal housing, one of which is used for isolation fitted with own separate equipment and isolation facilities (e.g. protective clothing) in order to prevent the spread of contamination during infectious patient care. Large animal pathology is housed in a separate building nearby. On the ground floor, there are two operating theatres and two recovery rooms (narcotic boxes) for abdominal, orthopaedic, and other soft tissue surgery on horses. Septic and aseptic interventions can be performed in two different theatres. However, these two rooms are not fully separated. There are various examination and teaching rooms for internal medicine patients as well as for reproduction, the latter also used for bovine surgery. There is a separate area for radiology and computed tomography, and a well-equipped clinicopathology laboratory for diagnostic and teaching purposes. Animals are housed in several separate stables with convenient boxes. Some of the stables have direct access to paddocks, where animals can be kept unconfined or exercised. We have four stables (orthopaedic, colic, obstetrics, and educational) and every stable contains 16 boxes. There are four normal paddocks and one paddock for lameness examination on soft ground.

Table 6.1. **Places available for hospitalisation and animals to be accommodated**

	Species	**No. of places**
Regular hospitalisation	cattle	16
	horses	45
	small ruminants	8
	pigs	20
	dogs	43
	cats	15
	exotics	8
Isolation facilities	farm animals and horses	5
	small animals	18

6.1.3 PREMISES FOR ANIMALS

Give a description of the facilities for rearing and maintaining normal animals for teaching purposes.

The Faculty keeps 4–6 beagle dogs for teaching purposes in Building 'P' on the main campus. These dogs are housed in three indoor kennels and a yard for them. Four cats are also housed in a ward of the SAC for teaching purposes.

A voluntary-based blood donor programme including dogs and cats has been running for three years. The programme is sponsored by a food-producing company.

The 'spay training programme' usually involves about 100 dogs a year, provided by animal shelters and welfare associations being in a contractual contact with the Faculty. These patients are housed at the SAC hospital for about a week.

An adequate number of animals is provided to the LAC for teaching purposes by the neighbouring commercial farm.

If the Faculty has no farm of its own, please explain in the SER the practical arrangements made for teaching such subjects as animal husbandry, herd health, and the techniques of handling production animals.

The farm of the FVSB is not used for teaching animal husbandry, nutrition and herd health, only to provide animals for teaching. The summer practical after the 2nd year, the mobile clinic service, the herd health visits in the 4th and 5th years and the 6-week-long farm animal practice provide learning opportunities for the students.

6.1.4 PREMISES USED FOR THEORETICAL, PRACTICAL AND SUPERVISED TEACHING

The same room should not be entered under two or more headings, even if it is used, for example, for both practical and supervised work.

Table 6.2. **Premises for clinical work and student training**

PREMISES		NUMBER
Small animals	**Consulting rooms**	10
	Surgical suites	3 *(plus 2 units for endoscopy/ultrasonography)*
Equine and food animals	**Examination areas**	2
	Surgical suites	2
Exotic	**Consulting rooms**	2
	Surgical units	1

Table 6.3. **Premises for lecturing**

Number of places per lecture hall									
Hall	**no. 1**	**no. 2**	**no. 3**	**no. 4**	**no. 5**	**no. 6**	**no. 7**	**no. 8**	**no. 9**
Places	113	85	124	100	97	100	80	100	130
Hall	**no. 10***	**no.11**	**no. 12**	**no. 13**	**no. 14**				
Places	100	38	32	24	68				
Total number of places in lecture halls: 1123									

*at the Üllő site

Table 6.4. **Premises for group work** (number of rooms that can be used for supervised group work)

Room	**no. 1**	**no. 2**	**no. 3**	**no. 4**	**no. 5**	**no. 6**	**no. 7**	**no. 8**
Places	30	20	14	15	16	18	18	16
Room	**no. 9**	**no. 10**	**no. 11**	**no. 12**	**no. 13**	**no. 14**	**no. 15**	**no. 16**
Places	30	20	20	20	30	35	12	15
Room	no. 17	no. 18	no. 19	no. 20	no. 21	no. 22		
Places	15	15	15	15	14	30		
Total number of places in rooms for group work: 433								

Table 6.5. **Premises for practical work** (number of laboratories for practical work by students)

Laboratory	**no. 1**	**no. 2**	**no. 3**	**no. 4**	**no. 5**	**no. 6**	**no. 7**	**no. 8**
Places	15	15	15	10	10	10	30	14
Total number of places in laboratories: 119								

Please give a brief description of health and safety measures in place in the premises for practical work and in the laboratories to which undergraduate students have access.

The laboratories and clinical premises belong to departments which are responsible for keeping the health and safety of all teaching units. Every department has a delegated staff member who is responsible for implementing health and safety measures. These persons are regularly educated and controlled by the Faculty's Health and Safety Manager. A written fire safety and rescue plan as well as protective equipment (e.g. fire extinguishers) are available according to the official regulations.

Students are by law officially informed about the most important hazards, risks and health and safety instructions and measures during the first practicals of different disciplines by the responsible teaching staff. This education is a prerequisite of participating in the practicals. Students must wear officially prescribed protective clothing (lab coat, footwear, masks etc.) during the practical work. The laboratories have modern safety equipment and cleansing facilities. In the clinics, students also have access to locker rooms and shower facilities. The campus is provided with a 24-hour safety guard service.

6.1.5 DIAGNOSTIC LABORATORIES AND CLINICAL SUPPORT SERVICES

- **Diagnostic laboratories**
  Briefly describe the facilities available for clinical diagnostic work.

The SAC has an Emergency Laboratory within the main building, supervised by the Department of Internal Medicine and equipped with a VETTEST 8008 biochemistry analyzer (France), a Laser Cyte IDEXX haematologic automatic instrument with its computer and ink-jet printer, and a CoagVet haemostasis automatic device.

The Clinicopathology Diagnostic Laboratory in Building 'O' (also on the main campus) includes two rooms for routine laboratory analyses of blood, urine, cytology samples, ruminal fluid, and faeces. The most important instruments of the laboratory are an Eppendorf 421 clinical chemistry automatic analyzer (Germany), a Dr. Lange 400 semiautomatic photometer (Germany),

a Labsystem FX 901 semiautomatic photometer (Finland), a Lysa 300 Plus biochemistry analyzer (Hycell Diagnostics, France), a Twincell and Abacus haematology semi- and automatic analyzer (Hungary), a Nicon Coolpix 995 digital camera (Japan), a SONY DXC 930 Video camera (Japan), a SONY PVM 1453 Mp Video-monitor (Japan), a Panasonic video machine (Germany), a Nikon Eclipse 400 trinocular microscope (Japan), an Olympus student microscope (Japan), IMAN (Image analyzer computer software) (Hungary), an ADVIA® 120 Haematology System (Bayer, Siemens, USA), an Rx Daytona fluid-phase automatic biochemical analyzer (RANDOX, USA), a Rotofix 32A centrifuge and cytospin (Hettich, USA), a coagulometer (Minivolt Instruments Srl, Italy), a video studio monitor: SONY PVM 1453 Mp, VBS, RGB, Y/C connecting device to microscope, a Panasonic video recorder, and a Boeco C 28 table centrifuge.

The Laboratory for Andrology and Assisted Reproduction (also registered and accredited as Small Ruminant Artificial Insemination and Embryo Transfer Mobile Station) has an immunofluorescence adapter for Olympus phase contrast microscope with video camera, a Computer Assisted Semen Analyzer (MTG, Germany), Real-Time PCR, an Inverted Nikon microscope with camera, an Awareness stat-fax 2100 plate reader, a high speed centrifuge, an Olympus endoscope + video camera and a Motic stereo microscope + camera, two transportable stereo microscopes for field work (Wild, Germany), two CO_2 incubators (Juan, France), a PLANER programmable cell freezer (Great Britain), a BIOCOOL alcohol-based cell freezer (Germany), and a Sartorius analytical balance (Germany).

The Endocrine Laboratory belonging to the Department of Obstetrics and Reproduction performs different hormone assay measurements used in clinical reproductive endocrinology (RIA and ELISA) and has an ELISA reader (Zenith) with three functions, Axsym ELISA equipment, and it is also able to adapt and validate different hormone assays (leptin, IGF-1, melatonin, insulin, progesterone, testosterone, corticosteroids).

The Diagnostic Laboratory of the LAC has an Abacus junior vet haematological automatic analyzer (Diatron, Hungary), an Olympus AU640 Biochemical semiautomatic photometer (Olympus), a LAB-Analyse biochemical semiautomatic analyzer (Orvostechnika Kft, Hungary), an ABL 505 blood-gas analyzer (Radiometer, Copenhagen), a Diaclot C2 coagulometer (Dialab, Austria), a computer-aided sperm analyzing system (Minitübe GmbH, Germany), two PCR units, a real-time PCR unit, two centrifuges, a gel documentation system, two electrophoresis units, a teaching microscope supplement for Olympus BX41 microscope, a digital camera, and incubators.

- **Central clinical support services**
  Indicate the nature of these services and how they are organised (e.g. diagnostic imaging, anaesthesia, etc.)

The main clinical support services are operated by the units of Internal Medicine, Surgery and Obstetrics at the SAC:

- Clinical support services and facilities belonging to the Internal Medicine Unit:

The Ambulatory Division within the main building of the SAC (in existence since 2006, being separated from the former Ambulatory Division of dogs and cats) has a Panther 2002 ultrasound instrument (Brüel & Kjaer, Denmark) for emergency abdominal ultrasonography, echocardiography equipment (including M-mode, 2D, spectral Doppler and colour Doppler echocardiography, equipped with electrical phased-array transducers of 3.5–7.0 MHz). This ultrasound instrument also serves for teaching purposes during practical lessons in groups for undergraduate as well as postgraduate students. Other available equipment include a Maravet Infusomat infusion pump, a Vacuson 18 sucking device for the suction of body fluids, a HeartScreen 60G ECG instrument, and a FirstSave G3 defibrillator for cardiac resuscitation.

The Internal Medicine Diagnostic Imaging Unit within the main building of the SAC has the following instruments serving for diagnostic purposes: a six-channel electrocardiography in-

strument (Schiller, Switzerland), an endovision endoscopic system (Storz, Germany) for respiratory, gastrointestinal and laparoscopic endoscopy, an ESAOTE Megas M-mode and a two-dimensional and colour Doppler ultrasound instrument equipped with electrical phased-array cardiac and abdominal convex transducers of 3.5 to 12.0 MHz. Other available instruments include a Biopty Bard Biopsy device for ultrasound-guided biopsies, a Karl Storz video endoscopic system for small animal endoscopy, a Matrix inhalation anaesthetic instrument, a three-channel electrocardiographic instrument (Schiller, Switzerland), a Parks-Doppler blood pressure measuring instrument, a Kruuse PS250-digital scale, and an HDO S+B Medvet blood pressure measuring instrument.

The Internal Medicine Hospital Division including the Intensive Care Unit (ICU) within the main building of the SAC has an ABL 555 blood gas analyzer (Radiometer, Copenhagen) and a haematocrit centrifuge which are operated by the laboratory. There are four Braun perfusors for continuous rate infusion therapy, an infusion pump with syringe (IVAC 711), a microwave oven for warming of food, two refrigerators, a heating device for warming up infusions, and an Innocare Vet 12 patient monitor.

The instrumentation of the Division of Exotic Animals in Building 'B' (exists since 2006, being separated from the former Ambulatory Division of dogs and cats) includes an X-ray (dentistry) instrument (type TUR) for small exotic animals, a three-channel ECG instrument (type RF Bioset 300), an EE Erbotom electrocautery, a KaVo set for dentistry with Schulz-type compressor, a portable ultrasound machine (type SIM 7000 CFM), a VETTEST 8008 biochemical analyzer (France) for the determination of blood biochemical parameters, an inhalation anaesthetic system (Fluotec Ohmeda evaporator + Hoek Loos redactor), an Eicksonic Woodpecker ultrasonic depurator, a UDS-J Woodpecker depurator, a Storz cystourethroscope 30°, a Storz Endoscopic generator (Flash generator 600), a SurgiVet V3402 pulse oximeter, a Mach examination and operation Lamp, a Kruse/Eickmeyer bipolar electrocautery and a Braun syringe pump for continuous rate infusion therapy.

- Clinical support services and facilities belonging to the Surgery Unit:

Radiology uses two X-ray machines (Diamond Rad 68, Diamond 150 TH Eureka) with a Super HF 650 X-ray generator, a Developer machine (35 Compact Protec) and a GE CT/e computed tomograph.

The Anaesthesia team serving the surgical units possesses 7 pulse oximeters (Ohmeda Biox 3740, Datex Ohmeda 3800 Trutrak+), 4 capnographs (Surgivet V9400, Innomed IM-CAP100), 4 Surgivel Advisor combined anaesthesia monitors (capnography, pulse oximetry, blood pressure measurement, ECG, temperature measurement), 2 blood pressure measuring devices (Parks 811-B), an ECG device (Schiller CM-8/C), 5 anaesthetic machines (Anestar N7, Dräger Tiberius 19) and 20 Isoflurane or Sevoflurane vaporisers (Penlon PPV, Dräger 19.3, Isotec 3, VIP3000 MatrX), a respirator (Surgivet SAV 2500), and 8 syringe pumps (Alaris Asena, Braun Compact, Graseby 3100, Terumo STC).

The Operating Unit for Orthopaedics and Neurosurgery possesses 2 complete AO operating sets, an endoscopy tower with Sony Trinitron monitor, Martin Halogen light source, a Dr. Fritz Veterinary Video Camera unit, a Fiegert motorised shaver type S-3300, 2 Erbotom electrocautery devices, 2 Aesculap Surgical Suction devices, and 3 autoclaves. The operating room also has a camera-monitor system to display procedures 'real time'.

The Operating Unit for Soft Tissue Surgery and Ophthalmology works 8 basic instrumentation sets, a thoracic set, a vascular set, an ENT set, with 2 Erbotom electrocautery devices, 2 Medap Surgical Suction devices, an endoscopic tower with an AG Neovo monitor, a Storz telecam DX II unit, a Led light source, a Storz Laparoflator 26024, a Storz Unimat plus suction-lavage device, an SurgRX Enseal bipolar electronic tissue sealing device, and 2 autoclaves. The operating room also has a camera-monitor system to display procedures 'real time'.

Ophthalmology has been equipped with an Alcon legacy 20 000 Phacoemulsification device, a Zeiss operating microscope, a Zeiss Biomicroscope, a fundus camera (Genesis, Japan), a direct ophthalmoscope (Beta200, Heine), an applanation tonometer (Tonopen, Medronic) and an impression tonometer (Schiötz, Eickemeyer), and an ophthalmology ultrasonography device (12 MHz, Ophthalmic Probe).

The Hospital Area of Surgery has a Redax thoracic drainage system and 3 syringe pumps.

- Clinical support services and facilities belonging to the Obstetrics Unit:

The Obstetrics Diagnostic and Operation Unit possesses different equipment in order to improve the quality of sampling and sample storage: two renewed anaesthetic machines, a second-hand small autoclave, 2 pulse oximeters, a capnograph, a Doppler blood pressure measurement device, warming stages, 2 open incubators, a 3D-ALOKA ultrasound device, a special freezer (–85 °C, Thermo Scientific), 3 microscopes, a video-endoscope, an infusion pump, and a liquid nitrogen storage tank.

The most important instruments of the LAC are as follow: Anaesthetic machine, 2 sets (LAVC-2000, Arizona, USA); Mindray Beneview T5 anaesthetic monitor (China); HP anaesthetic gas monitor/anaesthetic gas module (HP M1205A, USA); Isoflurane vaporiser; Injection pump (B-Braun, 2 pieces); Infusion pump (Eikemeyer); Laparoscopic set (Olympus); Arthroscopic set (Olympus); AO set (Synthes, Switzerland); Video-endoscope set with 3 endoscopes of different sizes (Olympus); Holter ECG device with connection to PC (ArguSys FD, Innomed Medical Ltd., Hungary); Ultrasound instrument, BK Medical flexfocus 700 (Denmark) for abdominal ultrasonography, echocardiography including M-mode, two-dimensional, spectral and Colour Doppler facilities, equipped with 3.0, 5.0 and 7.0 MHz electronic phased-array sector transducers; Portable ultrasound machines (Aloka and Pie Medical) with 5.0 to 7.0 MHz transducers; Digital X-ray instrument (Philips) with Eleva processing programme; a Tomoscan AV computed tomograph (Philips); a Mustang 2000 treadmill instrument for horses (Graber AG, Switzerland); a direct ophthalmoscope (Heine); an indirect ophthalmoscope (Heine); a slit-lamp biomicroscope (Kowa); an EMS extracorporeal shockwave machine (EMS Medical GmbH, Germany); an Nd-Yag laser device (Lasermatic Combolaser, Helsinki, Finland), and a trailer for bovine animals (Frankenhorst-Fahrzug GmbH, Germany).

6.1.6 SLAUGHTERHOUSE FACILITIES

Describe briefly the slaughterhouse facility to which the Faculty has access, including distances from the Faculty and level of activity.

The Facility does not have an own slaughterhouse facility. The two-week practical training in meat inspection during the 11th semester takes places at accredited extramural training sites around the country under the supervision of official meat inspectors (at least one week in slaughterhouses for pigs and/or cattle and/or sheep, 'red meat', and maximum one week in slaughterhouses of poultry or lagomorphs or game). The extramural practical work of the students is controlled by the teaching staff of the Department of Food Hygiene. Students must write a report (logbook) on this practice, their work is evaluated by the supervising official veterinarian, and finally there is a written exam at the Department of Food Hygiene.

6.1.7 FOODSTUFF PROCESSING UNIT

Describe briefly any access that the Faculty has to foodstuff processing units.

Practical aspects of the production technology of foodstuffs of animal origin are taught at 'laboratory scale' in the recently established food-technological teaching laboratory of the De-

partment of Food Hygiene and at 'pilot scale' in the training unit of the 'Miklós Bercsényi' Technical School for Food Technology (Budapest) in a contractual framework (see earlier in subchapter 4.1.5).

6.1.8 WASTE MANAGEMENT

Briefly describe the systems and equipment used for disposing of waste material; cadavers, carcasses, biological waste of different types, excreta, etc.

Hazardous waste (needles, sharps, biologically contaminated materials, pharmaceuticals, chemicals, etc.) is collected separately in conformity with the current official regulations and delivered to the Faculty waste collection spot, from where a professional company being in a contractual relationship with the Faculty takes it over and transports it away.

Carcasses and other biological material produced by the Faculty are collected and transported for disposal by a national company specialised for processing animal waste throughout Hungary.

6.1.9 FUTURE CHANGES

Outline any proposed changes in the premises that will have a substantial effect on the Faculty, and indicate the stage which these have reached.

Since our Faculty gained the distinguished Research Faculty Award in 2013 with a 4-year financial support, new resources have become available to develop the facilities serving the scientific activity. The departments are encouraged to submit annual applications to modernise their equipment, which will be judged according to their scientific achievements.

6.2 COMMENTS

- Comment on the adequacy of the buildings in general for undergraduate teaching.
- Comment on the adequacy of the equipment in general for undergraduate teaching.
- Comment on the maintenance of buildings and equipment.

Generally, the building facilities and instrumentation of our departments correspond to the international standards.

Concerning the buildings there is a casual lack of large auditoriums as well as that of smaller rooms for group work, due to the increased intake of veterinary students. The Faculty management is aware of these challenges and is trying to solve the problems.

One of the major developments implemented since the previous SER in 2004 has been the establishment of the new SAC in 2006 which led to a huge improvement in the diagnostic and clinical facilities compared to the ancient separated clinical structure and old instrumentation. Nevertheless, the clinical activity has still been using some of the previous premises such as the former surgery consultation rooms and waiting room in Building 'B'.

Besides the constant efforts of departments to apply for different grants to improve the research and clinical environment, the Faculty management decided to further improve the departments' facilities in 2012, providing a facility support programme aimed at enhancing the teaching-related equipment through applications.

The maintenance of the buildings and equipment is sufficient. The regular maintenance of the expensive instrumentation is not fully solved because of the lack of service contracts. The replacement of the old C-arm would also be very important. The accreditation of our diagnostic laboratory is planned to increase the number of tests performed.

There are some difficulties regarding the management of the Mobile Clinic. High-value medical instrumentation might suffer damage during farm work and since the repair and/or replacement of those is not easy, insurance would be a preventive measure to avoid getting in trouble. However, insurance embodies a constant cost. Additionally, there is a strong need for another vehicle serving the Mobile Clinic.

The status of the LAC has been deteriorating since its opening in 2001, but in spite of the regular minor renovations, some aspects of the building's structural facilities (e.g. wooden stables) are not appropriately manageable.

6.3 SUGGESTIONS

If you are unhappy with any situation, please list any improvements you would make in order of preference.

It is a constant need and future challenge to keep the historic buildings of the main campus in an acceptable condition. This requires considerable financial sources from the budget of the Faculty.

The clinical units used for ophthalmological and dermatological consultation in Building 'B' (see above) are in very poor condition and need urgent renovation, just as the Exotic Unit also located in Building 'B'. The same is valid, however, for the rooms of Building 'M' used for clinical teaching in groups (practical lessons on clinical diagnostics, propaedeutics, and internal medicine).

The Radiology Unit managed to replace the old CT with a much newer one in 2012, but there is a need for introducing a digital radiography system in the near future. A small animal MRI embodies a further direction to improve diagnostic imaging.

The LAC has a realistic chance to become the 'central' veterinary institution of Middle Europe in terms of facilities and location, therefore additional instrumental developments such as purchasing an MRI machine, a scintigraphy device and a modern CT are needed.

Chapter 7. ANIMALS AND TEACHING MATERIAL OF ANIMAL ORIGIN

7.1 FACTUAL INFORMATION

7.1.1 ANATOMY

Indicate the materials that are used in practical anatomical training, and how these are obtained and stored.

For purposes of anatomy teaching, canine cadavers are collected from the clinics of the campus and the surrounding private clinics. The cadavers are stored in a refrigerator room and carried to the preparatory room and the dissection hall on a path separated from communal ones. For transportation, 240-litre plastic containers are used. The cadavers are carried on stainless steel rolling preparatory tables within the dissection hall. The animal by-products are transported away from the refrigerator room twice a week.

Table 7.1. **Material used in practical anatomical training**

	Dog		Ruminant		Equine		Other	
	2012	2011	2012	2011	2012	2011	2012	2011
Live animals[1)]	14	15			31	33		
Cadavers[1)]	493	487						
Specimen[1)]	17	18	7	7	8	8	9 (swine)	9 (swine)
Other[2)]							280 (hen, rat, rabbit cadavers)	280 (hen, rat, rabbit cadavers)
e.g. ultrasound								
computer-assisted teaching	Anatomia Canis CD, AwA Anatomy with Apple self-developed courseware on different species							

[1)] give figures, [2)] indicate

7.1.2 PATHOLOGY

Table 7.2. **Number of necropsies over the past 3 years**

	Species	Number of necropsies			Average
		2012	2011	2010	
Food-producing animals	cattle	61	22	37	1017
	small ruminants	72	23	49	
	pigs	728	1020	1038	
Equine		101	86	71	86
Poultry		1351	1192	1113	3353
Rabbits		2313	2121	1969	
Companion animals/exotic	dogs	250	260	290	582
	cats	78	161	98	
	exotic pets	140	196	274	

Indicate the nature and extent of any additional sources of material for the teaching of necropsies and pathological anatomy, including slaughterhouse material.

The cadavers used for teaching and practicing necropsies arrive from different sources:

- from the SAC (main campus) or the LAC (Üllő Campus), except when the owner indicates that he/she wishes his/her pet to be incinerated without autopsy;
- from practitioners or veterinary clinics working in Budapest and in the neighbouring area;
- from commercial farms;
- from owners directly contacting the institution;
- from zoos, pet shops and aquaria (mostly exotic pets).

The Department of Pathology receives about 1500 cases per year for necropsy from different private clinics, pet owners, dog shelters, farmers, animal breeders, etc. The diagnostic service is not free of charge, the clients pay for the necropsies and the following consultations. Besides the necropsies, about 3000 tissue and organ samples, needle aspirates, cytological samples etc. arrive for histopathological examination and evaluation, which work is also part of the diagnostic service provided by the department. In close collaboration with the Department of Microbiology and Infectious Diseases, about 2000–3000 samples received are forwarded for bacteriological, virological and serological investigations. The personnel of the Department of Pathology is ready for telephone consultation during the working hours (from Monday to Friday, 7:00–16:00); specific requests by owners or field veterinarians for consultations can also be granted following prior agreement.

7.1.3 ANIMAL PRODUCTION

Indicate the availability of food-producing animals for the practical teaching of students a) on the site of the institution;

The Faculty has a Commercial Farm at Üllő right next to the LAC, where cattle, pigs, sheep and horses are kept. This farm has an area of around 1,100 hectares and an assortment of buildings that includes accommodation for cattle, horses, pigs and sheep, as well as housing for the farm staff of about 30 employees, a carriage farm, offices and various barns. The Faculty keeps beef cattle (130 cows) there, though there is no dairy herd. The Commercial Farm – besides its commercial activities – provides farm animals for the LAC (Üllő) for educational purposes (e.g. cows for rectal examinations).

b) on other sites to which the institution has access.

Intramurally, practical training on livestock production systems, in particular intensive types, and herd management is provided in the form of a day-long farm visit for fourth- and fifth-year students, organised by the Department of Animal Hygiene, Herd Health and Ethology. This is done with the participation of 1–3 students in the framework of the Department's consultation visits to these farms, aimed at developing the students' problem-solving ability on herd level. Each student has to participate in at least one visit, the report on which counts towards the exam (for detailed description see also Section 7.1.8.2).

In addition to the coursework, students have 3 weeks of summer extramural work (covering animal production and nutrition). This is carried out on farms. Students have written guidelines for the work that should be undertaken, and must prepare a report for evaluation.

7.1.4 FOOD HYGIENE/PUBLIC HEALTH

Indicate the availability of farm animals and products of animal origin for the practical teaching of students in veterinary public health, food hygiene, inspection and technology.

The practical teaching of students in veterinary public health, food hygiene, inspection and technology is performed in the course of the intramural training in groups of 15–16 students at the Department of Food Hygiene.

During the practical work, each group has to examine raw milk, milk products, stuffed meat products, eggs, and typical products of canned food. Practical aspects of the production technology of foodstuffs of animal origin are taught in the recently established food-technology teaching laboratory of the Department. During these practicals, students should become familiar with the technology of pasteurisation and the production of sour milk products, cheese and butter, as well as the processing of cured, smoked and heat-treated meat products. Then the microbiological quality of the self-manufactured products will be examined. Processing technology is presented to students at pilot scale in the training unit of a technical school for food technology (see also in subchapter 6.1.7).

Practical training in meat inspection is performed at accredited extramural training sites throughout the country. The sites must provide adequate facilities for the two-week meat inspection training, including at least one week at a slaughterhouse for pigs and/or cattle and/or sheep ('red meat'), under the supervision of an official veterinarian (for details see subchapter 6.1.6).

7.1.5 CONSULTATIONS AND PATIENT FLOW SERVICES

7.1.5.1 CONSULTATION

- State the number of weeks, in the course of the year, during which the clinics are open.
- State the number of consultation days each week.
- State the consultation hours.

The clinics are open all the year round 24 hours a day. The SAC as well as the LAC offers services 52 weeks a year. All weekdays except for weekends and bank holidays are available for consultation. Consultation (appointment) hours are held mainly from 09:00 to 16:30 on weekdays. The SAC is ready to receive elective patients besides the emergency cases from 16:30 to 22:00 on weekdays and from 9:00 to 20:00 at weekends and on bank holidays. The rest of the time is dedicated only to emergency cases. The LAC operates an emergency service from 16:30 to 9:00 on weekdays and all day at weekends and on bank holidays.

The whole calendar year is covered with the schedule of either the 4th- and 5th-year students and/or with the 11th practical semester; thus, there are students being allocated to consultations as well as involved within the on-duty service at all times in both clinics.

7.1.5.2 PATIENT FLOW

The number of animals to be stated are for all disciplines combined (medicine, surgery, reproduction, etc.). In Table 7.3 only animals coming into the Faculty should be included. Animals studied in practical teaching outside the Faculty should be entered in the section entitled 'Ambulatory Clinic' (Table 7.4).

The term ‘consultation’ refers to those patients which come in and go out during daily consultation hours. ‘Hospitalisation’ refers to those patients which are retained in the clinic as ‘inpatients’ following presentation.

Table 7.3. **Number of cases a) received for consultation and b) hospitalised in the Faculty clinics in the past three years**

Species		Number of cases						Average
		2012		2011		2010		
		a	b	a	b	a	b	
Food-producing	Bovine		169		160		162	191
	Ovine, caprine		12		12		16	
	Porcine		11		14		9	
	Other farm		5		2		2	
Rabbits		367		415		413		398
Equine			676		601		640	639
Companion animals/exotics	Canine	6456	958	6364	970	6884	875	11710
	Feline	1886	260	1705	278	1929	315	
	Exotic	1793		2093		2365		

7.1.6 VEHICLES FOR ANIMAL TRANSPORT

State the number and nature of the Faculty vehicles that can be used to bring sick animals to the clinics.

Although a mobile clinic service is operated for sick animals by the LAC, there is currently no own transport facility belonging to the Faculty to carry patients to the clinics, therefore the owner has to bring sick animal by his/her own vehicle or taxi, which is the everyday routine and works well in the practice. Nevertheless, a 24-hour animal ambulance service transporting sick animals operates in the Budapest region which is available for clients whenever necessary.

7.1.7 ON-CALL EMERGENCY SERVICE

Outline what emergency service is available (full-time, 24-h service, ON-CALL or 8–22 h duty) and discriminate for species.

There is a full-time (24 hours a day, 7 days a week and 52 weeks a year) emergency service both at the SAC and the LAC. At the SAC, there is one veterinarian per clinical discipline (internal medicine, surgery and obstetrics) from 8:00 to 22:00 on weekdays and from 8:00 to 20:00 at weekends and on bank holidays. During consultation time, these colleagues can also use the entire diagnostic and therapeutic capacity of the clinic. During the out-of-hours period (after 16:30), the on-duty colleagues are able to use some main diagnostic devices (e.g. emergency laboratory, X-ray, ultrasonography, etc.). During night duty from 22:00 to 8:00 on weekdays and from 20:00 to 8:00 at weekends and on bank holidays, there is only one veterinarian as a chief of the emergency service along with one technician and the scheduled students for life-threatening emergencies. During these night emergency shifts, there is an on-call service available for those clinical activities, which are not performed by the current veterinarian (e.g. a back-up surgeon in case an internist is on duty and vice versa). As it has been indicated earlier, the student schedule covers the entire clinical activity including the emergency service, too.

At the LAC, the full capacity of the clinic is ready to receive emergency cases from 8:00 to 17:00. During the out-of-hours period from 17:00 to 8:00, one veterinarian is available for treating emergency cases along with one assistant and two to four students in-house, and besides, an on-call emergency team (primarily for colic) of two surgeons, and an anaesthetist are backups. This is supplemented by a veterinarian of the obstetric team being on-call as well. There is a mobile clinic with two veterinarians serving bovine patients regularly on 15 nearby dairy farms.

7.1.8 ON-FARM TEACHING AND OUTSIDE PATIENT CARE

7.1.8.1 AMBULATORY (MOBILE) CLINIC

The Ambulatory (Mobile) Clinic is defined as a unit which provides on-call outside services to farms and other institutions and is generally operated on a commercial basis.

- State the number of hours of operation per week. Is emergency service provided 24 h/day, 365 days per year? What is the degree of student participation (include duties)?
- State the number, the type and the seating capacity of the vehicles used to transport students working in the ambulatory (mobile) clinic.
- State the approximate number of sick animals (specify cattle, swine, equine, poultry or small ruminants, others) seen by the ambulatory clinic per year during the past three years (Table 7.4).
- State the average number of visits in a year made by the ambulatory clinic to farms and other institutions.

The Mobile Clinic practice was established in February 2006. Its goal was to provide an on-farm practicing and learning possibility for the 5th-year students in the 9th and 10th semesters. At the beginning two nearby farms were involved (with 350 and 250 heads of cows, respectively), which could be reached within 15 minutes by car from the LAC, but today already 15 neighbouring farms are involved in the service. Veterinarians employed by these farms have also been partners in the clinical teaching. The Mobile Clinic has two main programmes. On the one hand, there is a scheduled system, which means that every (English- and Hungarian-language) student should take part at least once in a semester (twice during the curriculum). This practical training is carried out on every Monday, Wednesday and Friday with 5 to 7 students per event. On the other hand, the two veterinarians of the Mobile Clinic provide an on-call service for the neighbouring 15 farms.

The Mobile Clinic possesses a minibus with a maximum capacity of 9 persons. The vehicle has been fitted with an endoscopic set for laparoscopic surgery of left displaced abomasum, an operating table for bovine surgery on a trailer, a mobile acid-base measuring device and two portable ultrasound devices.

The routine activity of the Mobile Clinic covers:

- clinical teaching based on different clinical conditions from the herd – every time when clinically ill animals are present;
- regular reproductive examinations (pregnancy examination, managing infertility, pathologic conditions) – 20 to 40 animals every time;
- handling and management of calf diseases – every time;
- taking part in eradication programmes (blood sampling for different tests, tuberculin testing, every other kind of sampling) – seasonally, usually in the autumn semester;
- managing surgical disorders of farm animals (Caesarean section, laparoscopic management of left displaced abomasum, umbilical surgery) – 1 to 3 surgical cases every week (around 5 hours operation/week);
- taking part in claw-trimming activities – occasionally;
- milk hygiene examinations with on-farm machines – occasionally.

Table 7.4a: **Number of cases seen by the Ambulatory (Mobile) Clinic in the past three years**

and

Table 7.4b: **Number of patients seen on outside teaching in the past three years**

Species	Number of patients			Average
	2010	2011	2012	
Food-producing animals: cattle and small ruminants	2849	2708	2836	2798

- partly on call

Intervention	2010	2011	2012
Endoscopic surgery of left displaced abomasum	50	65	80
Caesarean section	7	5	4
Anti-suckling surgery on adult cattle	15	5	3
Teat surgery (due to trauma)	4	3	4
Umbilical surgery	4	7	9
Total	80	85	100

- partly on-farm service and outside teaching

Intervention	2010	2011	2012
Reproductive examination of the bovine genital tract by palpation	301	324	303
Reproductive ultrasonography	503	480	551
Blood sampling for eradication programmes	1560	1480	1515
Early postpartum uterine treatments	101	120	119
Calf health interventions	221	145	183
Individual examination of sick cattle and treatment according to farm management	83	74	65
Total	2769	2623	2736

7.1.8.2 OTHER ON-FARM SERVICES AND OUTSIDE TEACHING

If there is no on-duty Ambulatory (Mobile) Clinic, a Faculty may have defined contracts with farms or other institutions to allow for outside teaching and patient care. Similarly, a Faculty may provide herd health services.

Please indicate if and to what extent this applies to your Faculty. If applicable, please provide no. of patients seen on outside teaching.

Herd health service

A field service based on the needs of large-scale bovine farms has been performed as follows.

Since the 2003/2004 study year, participation in the bovine herd health practical work has become mandatory for all students during the eighth and ninth semesters. This is about a 10-hour practical work in the form of farm visits organised at different dairy or beef farms three times a week and guided by one member of the teaching staff of the Department of Animal Hygiene, Herd Health and Veterinary Ethology.

Three or four students are taken to a dairy or beef farm by a Faculty-owned station wagon. Focusing on the main health and production problems of the herd visited, the most important issues are identified as follows:

- To be in contact with the staff of the farm
- Farm visits and clinical examination of diseased animals
- Data collection, evaluation, and interpretation (milk production, reproduction data)
- Taking biological (milk, blood, urine, hair, rumen fluid, liver biopsy etc.) samples for on-site examination of the samples by using quick stable tests or for laboratory examinations
- Body condition scoring (scoring and drawing conclusions on energy balance and protein metabolism)
- Evaluation of the faeces (consistency, colour, smell etc., drawing conclusions on feeding)
- Evaluation of the quality of forages and TMR, ration formulation
- Evaluation of chewing activity and rumen filling (drawing conclusions on feeding)
- In specific cases, performance of the metabolic profile test in order to reveal subclinical metabolic disorders caused by malnutrition
- Focusing on mastitis and somatic cell count of the milk, as well as the mastitis control programme
- Focusing on calf diseases (diarrhoea, gastrointestinal and respiratory diseases of viral aetiology)
- Focusing on diseases of the bovine digit
- In specific cases, rectal examination by palpation (pregnancy, ovaries, checking of uterine involution)
- Evaluation of housing, environmental conditions and animal welfare

Each student has to make at least one visit, the report on which counts towards the exam.

7.1.9 OTHER INFORMATION

Indicate any notable additional outside sources of material for clinical training purposes, such as animal charities, animals awaiting slaughter, etc. Indicate how the level of clinical service that is offered by the Faculty (in small companion animals, equines and production animals) compares with outside practices in terms of facilities, hours of service, equipment, expertise, responsiveness, etc.

Provide an indication in percentage terms of the proportion of cases that are primary (i.e. first-opinion) and referrals (provide a breakdown by species, if helpful). If the Faculty has a particular aim or policy as regards this mix, describe it.

Indicate what areas of clinical specialisation are covered, and the extent of the coverage (for example, a veterinarian with a particular specialisation may see patients in the clinic for one day a week, 3 afternoons, etc.).

Indicate the relationship the Faculty has with outside practitioners (in small companion animals, equines and production animals) in terms of matters such as referral work, providing diagnostic or advisory services for private practitioners, practitioners participating in teaching, holiday or 'seeing practice' work for students, feedback on the level of clinical training. Describe (if applicable) any other relationships with outside organisations that are routinely used to provide students with training (in particular practical training) in other clinical subjects (e.g. pathology work, interaction with state veterinary work).

Provide an outline of the administrative system(s) used for the patients, e.g. in terms of how case records are kept, how data are retrieved, whether systems are centralised, etc.

In the SAC, approximately 80% of patients are referred from not just around Budapest, but from the whole country and, in addition, we have patients from the neighbouring countries (mostly from Romania, Slovakia and Austria) as well. Referring practitioners can turn to the clinic via the reception or can reach the specialists directly by telephone or e-mail to make appointments and/or discuss cases. All the clinical disciplines have renewed bilingual websites with current information and availability.

The SAC has far the best clinical facilities and experienced specialists compared to the practices in Hungary, thus the clinic has been widely accepted as the top professional institution for all small animal clinical disciplines. The SAC has also contractual relationship with animal shelters and animal protection associations, which regularly send patients (mostly dogs) for diagnostic and/or therapeutic reasons. Some of these shelters provide patients for the 'spay practical training' managed by the obstetrics unit. These patients also undergo routine diagnostic procedures performed by students.

There are several consultations consistent with the professional profile of the most important clinical disciplines (internal medicine: ultrasonography, endoscopy, cardiology, gastroenterology, hepatology, dermatology, endocrinology, oncology, respiratology, urology, otology, gerontology, dietary management, exotic animal medicine; surgery: radiology, orthopaedics, neurology, soft tissue surgery, ophthalmology; obstetrics and reproduction: andrology). The orders of the different consultations have been advertised on the web and the appointments can be set up by telephone or via e-mail. Nevertheless, primary cases (from the street) can also be received and accepted in case of *'ad hoc'* availability of a discipline slot.

According to the policy of the SAC, the work of the referring veterinary surgeons (RVSs) has been warmly appreciated, thus staff members managing referred patients are obliged to keep in touch with the colleague reporting about the stage of the clinical process via telephone, and send the findings and the final report to the RVS via e-mail. Since the national postgraduate clinical education takes place at the Faculty, and in the framework of this programme (Certificate of Small Animal Clinical Studies = CertSACS) the candidates spend their practice at the SAC, there is a direct contact with these colleagues to discuss cases during developing their clinical knowledge.

There are several clinical experts (Certificate of Small Animal Clinical Studies) and some European board certified diplomates (ECVCP, ECVS, ECAR) working in the SAC (for details see Table 12.1.1.1). Recently one of our colleagues affiliated to the Department of Internal Medicine has been doing her specialisation training to become a diplomate of the European College of Veterinary Internal Medicine – Companion Animals and she has already passed the general examination. Another co-worker has just started her alternate residency training for dermatology (ECVD), in the framework of a part-time residency programme in Zurich.

Since all disciplines have specialists with adequate experience and knowledge, external veterinarians not being staff members do not see patients at the SAC. Nevertheless, several external practitioners in high-level private clinics (some of them former teachers of the Faculty) have been involved in the 4th-year summer practice (3 weeks out of 4) as well as in the 11th practical semester as extramural contractual instructors.

Computerised patient records are stored with a version of commercial veterinary software (Doki for Vets) adapted and developed separately for the SAC. This programme provides proper client and patient registration, clinical filing, collection of diagnostic findings (e.g. blood work, ultrasonography, results of histopathology, etc.) and therapeutic data as well as (X-ray) picture display. Students are allowed to use the software under supervision and also collect data for case reports and diploma thesis.

The LAC plays a central role both professionally and in terms of geographical location in Hungary and also in Central Europe, especially in the diagnosis and treatment of horses with

colic. There is a relatively low number of equine specialists in the country who are able to provide hospital circumstances for large animal patients, thus the vast majority of cases are referred to the LAC. There is an even closer personal connection with the RVSs. Informing these colleagues is also essential in order to stabilise the number of animals used in teaching. The veterinarians employed by the co-operating farms being involved in the Mobile Clinic service help a lot by contributing to the scheduled practicals as well as using the on-call service.

At the Department of Animal Hygiene, Herd Health and Veterinary Ethology, outside practitioners (well-known experts in their field, e.g. lecturers on diseases of the bovine digit, herd health management of poultry farms, or practical evaluation of animal welfare in pig farms) are involved in the teaching of subjects, which are as follow.

Mandatory subjects:

- Animal Hygiene (Preventive Medicine) and Herd Health
- Applied Veterinary Ethology

Elective subjects:

- Cattle Herd Health
- Pig Herd Health
- Poultry Herd Health

The practical part of teaching the elective subjects takes place on farms and in slaughterhouses, and the local practitioners are involved in the education.

7.1.10 RATIOS

See the section *'Main Indicators'* in **Annex Ia** for the figures needed for calculating ratios. Give the figures for numerators and denominators. The ratios should then be expressed by taking the numerator as 1.

- No. of food-producing animals seen at the Faculty: 191/year
- No. of individual food-animal consultations outside the Faculty: 2798/year
- No. of herd health visits: 90/year
- No. of equine cases: 639/year
- No. of rabbit cases: 398/year
- No. of companion animals seen at the Faculty: 11,710/year
- Poultry (flocks)/rabbit (production units) seen: 61/year
- No. of necropsies of food-producing animals + equines: 1103/year
- No. of necropsies of poultry/rabbits: 3353/year
- No. of necropsies of companion animals: 582/year

Table 7.5. **Animals available for clinical training (in the clinics of the Faculty or seen through the Ambulatory Clinic) as ratio to the number of students in last full year of clinical training**

		Denominator
R 11	$\frac{no.\ of\ students\ graduating\ annually^{a}}{no.\ of\ food-producing\ animals\ seen\ at\ the\ Faculty^{1}} = \frac{108}{191} = \frac{1}{1.768}$	1.768
R 12	$\frac{no.\ of\ students\ graduating\ annually^{a}}{no.\ of\ individual\ food-animal\ consultations\ outside\ the\ Faculty^{2,3}} = \frac{108}{2798} = \frac{1}{25.9}$	25.9
R 13	$\frac{no.\ of\ students\ graduating\ annually^{a}}{no.\ of\ herd\ health\ visits^{3,4}} = \frac{108}{90} = \frac{1}{0.83}$	0.83
R 14	$\frac{no.\ of\ students\ graduating\ annually^{a}}{no.\ of\ equine\ cases^{1}} = \frac{108}{639} = \frac{1}{5.916}$	5.916
R 15	$\frac{no.\ of\ students\ graduating\ annually^{a}}{no.\ of\ poultry\ /\ rabbit\ cases^{1}} = \frac{108}{398} = \frac{1}{3.685}$	3.685
R 16	$\frac{no.\ of\ students\ graduating\ annually^{a}}{no.\ of\ companion\ animals\ seen\ at\ the\ Faculty^{1}} = \frac{108}{11710} = \frac{1}{108.425}$	108.425
R 17	$\frac{no.\ of\ students\ graduating\ annually^{a}}{poultry\ (flocks)\ /\ rabbits\ (production\ units)\ seen^{2,3}} = \frac{108}{61} = \frac{1}{0.56}$	0.56

[a)]see Annex Ia, 2.2.b; [1)]Table 7.3, average; [2)]Table 7.4, average;
[3)]where applicable use or add information provided in Chapter 7.1.8.2;
[4)]see 7.1.8.1

Table 7.6. **Animals available for necropsy**

		Denominator
R 18	$\frac{no.\ of\ students\ graduating\ annually^{a}}{no.\ of\ necropsies\ food\ producing\ animals + equines} = \frac{108}{1103} = \frac{1}{10.21}$	10.21
R 19	$\frac{no.\ of\ students\ graduating\ annually^{a}}{no.\ poultry/\ rabbits^{1}} = \frac{108}{3353} = \frac{1}{31.05}$	31.05
R 20	$\frac{no.\ of\ students\ graduating\ annually^{a}}{necropsies\ companion\ animals^{1}} = \frac{108}{582} = \frac{1}{5.39}$	5.39

[a)]see Annex Ia, 2.2.b; [1)]Table 7.2, average; [2)]Table 7.4, average;
[3)]where applicable use or add information provided in Chapter 7.1.8.2;
[4)]see 7.1.8.1

7.1.11 OTHER SPECIES

Indicate how the Faculty deals with fish and other food producing species.

The fish pathology lectures are presented in the 8th semester in 30 hours. The course starts with the aspects of fish culture, fish diseases in the world and the importance of fish hygiene. The anatomy and physiology of cultured fishes are also discussed, like the characteristics of the water environment and the effect of fish culture technology on the health of fish.

The second part deals with infectious (viral, bacterial, alga- and mould-induced) and parasitic (protozoan, metazoan) diseases. An important part of the curriculum is the prevention and treatment of fish diseases and the current regulations in the EU (notifiable diseases).

At the Department of Pathology the diagnosis of fish diseases is a part of the daily activity. In the framework of contracts with supermarkets, the control of live fish and crayfish (lobster) also belongs to the tasks of the unit. With diagnoses of, and guidance for, treatments of aquatic zoo animals we help the Zoo and the Tropicarium to keep healthy fishes and aquatic invertebrates in their famous collections.

The subject 'Honey Bee Diseases' is taught by the Department of Parasitology and Zoology in the 7th semester. The first two lectures deal with taxonomy, biology, keeping and management of honey bees. The programme of the following 10 lectures involves the most important viral, bacterial, fungal and parasitic diseases, the pests and the poisonings of honey bee colonies. Finally the treatment and control possibilities of honey bee diseases as well as the current regulations in the EU and Hungary are discussed.

Investigations on certain bee pathogens are regularly carried out at the Department of Microbiology and Infectious Diseases. Around 200–300 PCR investigations to detect and identify pathogenic viruses and parasites (*Nosema* species) are carried out every year. In close cooperation with the Hungarian Beekeepers' Association, regular consultations and about 30–40 lectures are held for beekeepers in different regions of the country.

7.2 COMMENTS

Feel free to comment on all data provided in this Chapter.

Comment on major developments in the clinical services, now and in the near future.

Comment on local conditions or circumstances that might influence the ratios in Tables 7.5 and 7.6.

Although the three clinical departments have kept an official separation in terms of administration and staff, the professional work and the co-operation of the SAC units and subunits have been developing since 2006 and these days the clinic is a well-organised institution with close professional connection between the disciplines. Since most of the clinical activities (except for some consultations and the laboratory) have been concentrated within this relatively small building (only 1,400 m^2), this fact makes the patient flow more dynamic and easier to organise. This 'compact' feature of the SAC provides a friendly atmosphere both for the students and the staff, where everybody on board is easy to contact and discuss with.

There is a substantial (almost 9:1) difference between the number of consultations and hospitalisations of companion animals. This is due to the fact that owners are reluctant to leave their pet in the hospital for short and not too complicated diagnostic and/or therapeutic procedures, even if they are informed about the importance of their pets' admittance for teaching purposes. In these cases the owners are scheduled for re-checks more frequently. The simpler surgeries are usually managed as 'one-day' procedures, while the more complicated or risky patients are kept for observation and postoperative treatment for a reasonable time. Rabbits and (other) exotic pets are exclusively managed as ambulatory patients.

In 2009 the SAC experienced a substantial decrease in the number of consultations and surgeries (possibly due to financial issues and the resulting reduction in practitioners' willingness to refer patients to the SAC), but since then we have reached 85–90% of the previous case number by now. This change in patient numbers was the reason for making contracts with animal shelters and welfare associations to stabilise the number of cases available for teaching purposes.

There are morning rounds in all three clinical units of the SAC with the participation of staff members and the scheduled students discussing patients of the previous day, the present status of hospitalised animals and the current day's programme and plan.

In the framework of the 'spay practical training programme' there is a working co-operation among the Department of Obstetrics and Reproduction, the Department of Internal Medicine and animal welfare organisations. Students are directly involved in performing ovario-hysterectomies and other forms of obstetric/gynaecological procedures (on approximately 100 dogs or cats per year). In addition, the everyday clinical work-up of the patients with some basic diagnostic procedures is also managed by students.

There is a discrepancy between the number of equine cases (between 600 and 700 a year) and the size of staff, leading to high pressure on the teaching personnel at the LAC. As a result of this, it is hard to set up the on-duty timetable, too. Animals from herds free of several infectious diseases are generally not brought to the LAC. Without reinforcement of the staff, it seems unlikely that the staff of the LAC would be able to cope with properly handling an increasing caseload much beyond the current level. Personnel development is greatly needed.

All the LAC patients are hospitalised, thus there are no animals managed as ambulatory patients. There is a robust difference between the number of equine and food-producing patients managed in the hospital, since farmers can rarely afford to carry their animals and pay for the relatively costly procedures. This discrepancy has been solved by the Mobile Clinic, where the predominance of ruminants is characteristic.

7.3 SUGGESTIONS

If the denominators in Tables 7.5 and 7.6 for your Faculty are not meeting the range as indicated in Annex I, **Supplement A**, what can be done to improve these ratios?

The current number of European board certified diplomates at the Faculty should be increased via both encouraging young staff members to apply for alternate residency or even regular residency for 3 years and coming back afterwards, and launch a clinical residency programme at the Faculty. The main difficulty is to find financial support as well as a proper timeframe for our talented young clinicians to join these European College education systems. Since there are some diplomates in different clinical fields, the Faculty may initiate its own residency programme(s) or, like at the Department of Obstetrics, join other residency programmes as co-supervisor (ECAR).

The students' schedule in SAC practical hands-on training must become more efficient, allocating the 6th-year students mostly to appointments of special consultations, and equalising smaller groups of 4th- and 5th-year students for a longer period of time (1 to 2 weeks). There is a future plan to introduce the 12th semester, which would complete our education with a full year of practical teaching.

The rooms located outside the main building of the SAC need urgent renovation, i.e. Building 'B' housing dermatology and ophthalmology consultations as well as the rooms of the Division of Exotic Animals, and the teaching rooms in Building 'M'.

The number of healthy dogs and cats kept for teaching purposes could be increased, and the housing of dogs should be further improved. An appropriate new building for dogs and cats with a proper yard for dogs, corresponding to the relevant European and state regulations, is to be built in the near future somewhere in the park of the Faculty.

Chapter 8. LIBRARY AND LEARNING RESOURCES

8.1 FACTUAL INFORMATION

8.1.1 LIBRARY AND OTHER INFORMATION TECHNOLOGY SERVICES

Give a general description of the library/libraries of the Faculty/university that are available to students. Indicate how the library/libraries are managed (e.g. library committee).

For each major library of the Faculty, please provide the following information, either in narrative or tabular form.

Main library:

- is this specific to the veterinary training establishment?
- is this common to two or more establishments?
- Full-time equivalents of part time employees
- Number of full-time employees
- Number of journals received each year as hard copies
- Numbers of full access electronic journals
- Availabilities for online literature search
- Availability of textbooks
- Number of student reading places
- Library opening hours: weekdays weekends
  - during term-time ....
  - during vacations ....
- Indicate how the facilities are used by students

The SZIU has an integrated library network which consists of seven Faculty libraries. The central library, named 'Domokos Kosáry' Library and Archives, is located in Gödöllő and responsible for the management of joint ventures and organising library services at university level. To harmonise the co-operation, a collegium of the heads of libraries was established which is a good forum for discussing professional matters.

The library of the FVSB is named Veterinary Science Library, Archives and Museum, and at the same time is the only veterinary library in Hungary with nationwide responsibilities. It is also open to the public. However, its visitors are predominantly students, academic and research staff of the Faculty, though relations with the private and state veterinary sector and research institutions are also strong.

The library has been an active member of the National Document Provision System ever since its start and its holdings also appear in the Hungarian union catalogues MOKKA-ODR and the National Periodical Database. In Hungary, libraries have formed a national consortium for subscribing databases which are inevitably useful for several academic institutions. This venture is called Electronic Information Service (EISZ). Within this consortium the university and the Faculty have access to CAB Abstracts, Food Science and Technology Abstracts, Zoological Record, Web of Science, Science Direct, Scopus, Springer Link, GreenFILE, EconLit, and Lecture Notes in Computer Science, and a package of Ebsco Databases including Academic Search Complete, ERIC, etc.

Most of the collection of the library (nearly 90,000 documents) is searchable in the Open Public Access Catalogue (OPAC) of the library, and all publications of Hungarian veterinarians have been processed in the Hungarian Veterinary Bibliography since 1986.

The library operates a homepage in Hungarian and English which ensures easy access to all the services and provides up-to-date information on all services, resources, events, new books, etc. It also disseminates information through channels like Facebook, Twitter and mailing lists. The newsletter of the library has been published since 1997 three or four times a year. It is freely available (in Hungarian) on the library homepage, and is also included in the journal of the Hungarian Veterinary Chamber (entitled *Kamarai Állatorvos*).

The library has a live connection with the academic staff of the Faculty who are involved in making developmental plans for the library by means of *ad hoc* consultations, and in selecting material for acquisition on a regular basis. Besides its newsletter, the library makes its annual reports, regulations and strategy publicly available. Most of these have to be scrutinised and accepted by the Faculty Council. The library operates under direct supervision by the Dean to whom it reports at least twice a year, and whom the library consults in making its annual/project plans.

The Central Library in numbers

FTE of part-time employees	0.5			
Number of full-time employees	12			
Number of hardcopy journals	148			
Number of full access electronic journals	directly subscribed: 11 titles e-only, many both in print and in electronic version, and several thousands (Science Direct, Ebsco, Springer packages) via a national consortium			
Availabilities for online literature search	15 computers many relevant databases			
Availability of textbooks	Hungarian textbooks are stored in many copies; German- and English-language textbooks are purchased in some copies; If possible, textbooks are made available in electronic format (Elsevier e-book package)			
Number of seats	126 (including 15 computer places)			
Library opening hours: • during term-time • during exam period • during vacations	Monday–Wednesday 8:30–18:00 8:30–20:00 8:30–16:00	Thursday 8:30–20 8:30–20 8:30–16	Friday 9–17 9–17 9–13	Weekend – – –
Indicate how the facilities are used by students (data from 2012) - *visitors*: --- reading rooms in --- library homepage - *searches* --- databases --- OPAC - *participants* in trainings	 18,128 15,289 persons paid 49,250 visits 24,766 (in 6,922 sessions) 67,380 134 + 250			

Subsidiary libraries of the Faculty

- Please describe the subsidiary (e.g. departmental) libraries of the Faculty, and arrangements for student access.
- Indicate whether the main library holds a list of individual books of the subsidiary libraries.
- Describe any other information services and how are they are supported and how student access is regulated.

There are departmental libraries at almost every department. Some of these regularly receive the most recent books, some are more of a historic character.

The Veterinary Science Library is responsible for ordering, purchasing and processing materials for departmental libraries, thus every new volume is included in the open public access catalogue (OPAC) of the library (http://catalogue.univet.hu). It has an up-to-date list of all holdings of subsidiary libraries and regularly checks the material (stock-taking) at the departments.

Except for a few manuals used on a daily basis at laboratories, etc., books are available for borrowing or interlending from the departments as well. Students (or other libraries) requiring materials from the departments may do so via the Central Library which co-operates with the departments in managing the interlibrary or student lending, and returns them to the department after use. Normally the books are sent over to the Central Library in one day.

8.2 COMMENTS

- Please comment on the adequacy of the books and accessible journals, of the opening hours and of the provision of reading spaces and support personnel.

Keeping in harmony with international trends, the veterinary science library is also becoming a learning environment for students, and an increase in the use of electronic library services can be observed.

The library has a complete collection of Hungarian and a good selection of foreign veterinary literature. Its acquisition policy reflects the demand expressed by the academic staff and the students. Textbooks and suggested materials are acquired if possible in several copies according to the needs of students. If English-language textbooks are available in e-format, the book or licence is purchased/subscribed by the library. A selection of Elsevier e-books and the 'Animal and Veterinary Science' collection by CABI are available for the users. Regarding the electronic format of several Elsevier textbooks, an unlimited access in time as well as in the number of concurrent users is available.

The Faculty subscribes to the core journals of veterinary science and an ever increasing part of these journals are available electronically both upon individual subscription, and as a member of national consortia including Science Direct, Ebsco – Academic Search Complete, and Springer Link journals. Thus, besides the almost 150 print titles, the library offers access to thousands of veterinary and related journals as well.

The opening hours of the library have been extended until 8 p.m. in the exam period (December–January, May–June) upon the request of foreign students since 2010. In addition to the 110 reading spaces in the reading room, the library offers a room for group learning. There are 15 computers for the students' use. There is no shortage of computers since most of the students bring their own laptops or tablets to the reading room. Electricity supply and wireless connection to the internet throughout the whole building (and in other places, like the students' centre) are available. As a matter of course, access from home is also provided for through safe VPN connec-

tion, which makes available all electronic resources (subject-matter on the intranet, e-books, e-journals, databases).

The Hungarian Academy of Sciences has established a national database called Hungarian National Scientific Bibliography which serves as the basis of applications for funds or promotions. The Library also offers assistance for lecturers and researchers in uploading their bibliographies and related citations to this database and makes scientometric analyses using this database. The Faculty's repository, called HuVetA (Hungarian Veterinary Archive, http://www.huveta.hu) is also a good means of promoting the scientific output of the Faculty covering theses, PhD dissertations, historic materials, etc. in full text.

Of the 12.5 staff members 9 are graduates in library and information science, and 1 in history and archival studies. Some of them have diplomas in biology, English or other minors. Those in the readers' service are all able to aid students in database searching, thesis writing or solving practical IT or information problems in Hungarian, English and some in German, too. There are always two librarians in charge of readers' service, thus borrowing, searching, and personal help and tuition in using resources are always provided on a high level.

- Please comment on the Faculty's provision of IT facilities and the approach to self-learning, and on the further developments in this area.

Veterinary training requires a lot of individual effort from students to be prepared properly for the lectures and practicals continually. In order to facilitate the students' study work majority of presentations, lecture notes, study aids or special packages elaborated for practical work in laboratories, etc. are provided by departments on the Intranet.

Beside these routine learning tasks, students have to write and present studies, practice reports, literary reviews, case studies, etc. almost every term from the second year on. Thus they have ample opportunities to develop their competencies in literature searching and use, and scientific writing of different genres and length. Courses requiring such efforts are planned especially to develop these skills, and the Library is involved at certain points offering their aid and guidance. In the first days of the first semester there is an introduction to the use and services of the Library for every student. Similarly, in the second year there is a 45-minute lecture on the techniques of searching and the modern information sources available as well as on the ethics and formal issues related to citations. The library also offers optional courses (Library Informatics, Fundamentals of Scientific Writing) and extra-curricular short courses to prepare students for writing their first scientific work. By the end of their studies, students will be able to prepare their thesis.

So far as IT facilities are concerned, beside the 15 computers for use by students it is also possible to print in black and white and colour, and scan in the library. Using online materials for learning has become an everyday practice, and many students prefer to bring their own laptops or tablets to study from. The technical standards of the computers are regularly checked in the Library. While in 2004 there was a shortage of computers, in 2010 the students complained only about the speed of computers. Recently the use of own laptops/tablets has become very common, and there is practically no need for more hardware.

Wireless connection is offered in the Library, as well as in other parts of the campus (the students' centre, certain areas of the park, etc.).

The Department of Physiology and Biochemistry has been running a computer laboratory named 'Armand Kemény Multimedia Laboratory' offering networked multimedia learning material for the self-learning of physiology for 8–24 students since 1992.

There is also a computer room with 16 computers in the Rottenbiller Street building which may also be used by students. Besides, there is a computer room and internet connection in each room of the 'József Marek' Training Centre and Student Hostel.

VPN connection is provided by the library for staff and students by means of which all resources on the intranet, all electronic library resources and study materials can be accessed from home.

SZIU provides an e-learning portal (http://elearning.szie.hu) which can be used by any lecturer for developing online courses. Moodle is easy to use; however, there are still relatively few courses from the Faculty offered through this medium, since most of the subjects require extensive demonstration and practical experiences.

In the Museum part of the Faculty Library permanent collections and temporary exhibitions are housed, which can be visited by both the students and the public. In the nice rooms of the Museum the instruments of the veterinary profession and their development, documents of the history of our school, and animal sculptures of high artistic value are displayed.

Some of our departments have collections of preparations, equipment, etc. which may be used also by the students. The Museum of the Department of Anatomy and Histology is probably the most popular collection, offering good conditions for learning. A collection of various preparations at the Department of Pathology demonstrates diseases students could not see 'live'. Parasitological specimens, horses' hooves, and horse teeth series are also collected.

8.3 SUGGESTIONS

Complete renovation and enlargement of the library building have been included in the development plans of the Faculty for a long time. Were these be realised, the reading space would be enlarged, several new services would be introduced, e.g. a variety of study facilities, e.g. microscopes with histology slide collections, a computer room, several rooms for group work, a small conference room), and secure supervision of the building would be developed so that opening hours could be extended.

For lifelong learning, information literacy is one of the fundamental competencies which should be improved by both the students and the academic staff.

Since the learning and working environment of the Faculty is getting more computer oriented, the Library should make efforts to make study materials and professional literature more available through electronic devices (e.g. webpage, WiFi).

Chapter 9. STUDENT ADMISSION AND ENROLMENT

9.1 UNDERGRADUATE COURSES

9.1.1 UNDERGRADUATE STUDENT NUMBERS

Table 9.1 asks for numbers of undergraduate students in the veterinary training institution. This means students enrolled for undergraduate training and paying the corresponding tuition fees (if applicable), except for those students who do not participate in the teaching offered.
Some veterinary curricula require students to successfully complete all courses presented in an academic year before they can start the subjects in the following year. In other establishments students have to complete all the subjects in the curriculum before graduating, but can do so in a more flexible way. In the latter instance, it may be difficult – perhaps impossible – to place some of the students in a specific year of the programme.

If this is so, Table 9.1 may: Be omitted, or be an approximate figure, or be calculated by reference to the course of year that corresponds to the largest number of subjects taken.

In any case, please indicate the minimum number of years (MNY) allowed to successfully complete the curriculum.

MNY: 5.5 years

Table 9.1. **Undergraduate student composition in the year prior to visitation (2012)**

	Total number of undergraduate students	1286
	Total number of male students	313
	Total number of female students	973
	Foreign students	748
	– from EU countries	576
	– from non-EU countries	172

9.1.2 STUDENT ADMISSION

- State the minimum admission requirements.
- Indicate whether there is a limit to the number of students admitted each year.
- Describe how the number of government-funded student places is determined.

The principles of admission are laid down in the National Higher Education Act (Act CCIV of 2011). Accordingly, all Hungarian citizens have the right to apply for a seat at any undergraduate course (or courses, but in this case the order of preference should be given) of the higher educational institutions if they have the certificate of final examination from their secondary school. During the last five years the number of government-funded students was 100 as a frame-number. Since all students who achieved the minimum score or higher have to be admitted, the actual number of students admitted varied between approximately 90 and 100.

Foreign applicants are also admitted to training in German or English language. The selection is made on the basis of performance in a special entrance examination in biology and chemistry or by evaluation of the secondary school records on these subjects. The number of foreign students admitted yearly is limited to a maximum of 120 in the German-language programme which is limited to the first four semesters of the curriculum. There is also an admission cap of

120 in the English-language course of veterinary medicine which on the other hand covers the entire curriculum. At present a total of 748 students attend these courses. A one-year pre-application preparatory course is organised by College International for candidates who need additional instruction in science and English to prepare them to take the entrance examination with success. The number of foreign students admitted to English and German courses is limited by the teaching capacity of the Faculty.

- Outline any selection process (or criteria) used in addition to the minimum admission requirements.

Selection of the applicants is based partially on the scores gained in the secondary school. The performance in the secondary school is assessed on a scale of 500 scores. The applicants are ranked accordingly. The minimum score required for admission is determined by considering the number of state-funded seats permitted by the Ministry of Human Resources. Due to the entrance requirements and the quantitative feature of the grading system the admission is absolutely competitive.

- Describe whether students applying for and/or starting veterinary training have an equal or very variable knowledge base in scientific disciplines from their previous studies.

The number of applicants is four to five times higher than that of students admitted, which reflects the social reputation of the profession. The minimum entrance score varies between 415 and 420 (out of 500), so the secondary school applicants admitted are generally well trained. In spite of this the admitted students' knowledge in scientific disciplines and humanities is slightly different, but on the whole it is at an acceptable level. The relative diversity in knowledge originates from the difference in quality among the secondary schools.

- Describe any circumstances under which extra students may be admitted to the undergraduate veterinary course.

Hungarian applicants who collect scores not more than 10% lower than the minimum score may ask for admission provided they agree to cover the expenses of instruction (private-funded students). The number of seats for such students is determined by the Office of Education, which is max. fifteen; however, the number of tuition fee paying applicants is limited by the high expense (approximately 1.15 million HUF/half-year).

Based on the decision of the Faculty Council ten seats are offered yearly for Hungarian students pursuing study in a related profession, provided the applicants have completed at least two semesters with excellent results (the details are publicly given in the Rules of Study and Examination).

Foreign students having a bachelor degree of a related field can also be admitted as transfer students.

- Outline any changes foreseen in the number of students admitted annually. If applicable, describe how the Faculty plans to adjust to these changes.

Table 9.2 asks for the numbers of undergraduate students admitted to the Faculty over the last five years. Apart from the 'standard' intake, the Faculty may also be taking in students as transfers from other courses, privately funded students, etc. Please indicate any supplementary intake of this kind in the last column of the table.

Table 9.2. **Intake of veterinary students in the past five years**

Year	number applying for admission	number admitted	
		'standard' intake	other entry mode* (describe)
2012	880	295	61
2011	847	313	44
2010	899	320	35
2009	726	299	48
2008	905	331	69
Average	851	312	51

*Transfer students represent the admission of students by other entry mode.

9.1.3 STUDENT FLOW

Table 9.3 establishes to what extent students make progress in their studies. To this end, we look at the students who were admitted initially and which year they have reached after the MNY (see page 63) has elapsed.

Table 9.3. **Student flow and total number of undergraduate veterinary students (2012)**

Base year: 2006	Number of students present after admitted to year 1*	Number of additionally admitted students
1st year	179	–
2nd year	161	1
3rd year	135	–
4th year	133	–
5th year	126	–
6th year[1)]	95	–
>6th year	45	–

[1)]mark year matching MNY

*In the education in English the 11-semester-long curriculum was introduced in 2007, one year later than in the Hungarian curriculum, therefore 50 English students out of the 92 who started their studies in 2006 and had not completed it within 5 years are included in the numbers of the 6th year.

Table 9.4. **Number of students graduating annually over the past five years**

Year	Number graduating
2012	108
2011	95
2010	93
2009	148
2008	94
Average	108

Table 9.5. **Average duration of studies (distribution of students in years, 2012)**

Duration of attendance	number
years 0[1)]	78
years 1	23
years 2	6
years 3	1
years 4	
years 5	
years > 5	

[1)] Year matching MNY allotted to the veterinary curriculum

- Describe the requirements (in terms of completing subjects and examinations) for progression to a subsequent year of the course.

In the credit system there is no specific requirement (i.e. completion of the previous semester) for the students to continue their study in a subsequent half-year (which is not equal to the semester). However, finishing the study of certain subject(s), i.e. passing the exam of that subject(s), is a pre-requisite to register for subsequent subjects. Of course, deviation from the model curriculum may result in an extension of study time.

- Describe the academic circumstances under which the Faculty would oblige students to leave the course.

The Rules of Study and Examination and the Rules of the Credit System enacted by the Faculty clearly describe the requirement necessary for a student to keep his/her legal standing at the institution. Briefly (mentioning only the most essential measures), the student must leave the course if she/he

- does not collect 60 credit points in the first four semesters of the model curriculum, which must include the credit points of the obligatory subjects, during a maximum of six half-years,
- does not pass the exam of a subject using a maximum of six occasions,
- does not fulfil all the requirements (successful examination on all obligatory and optional subjects, preparation and successful defence of diploma work with an average mark of 2.5 for all these items, altogether these total the 330 credit points) necessary to sit for final (state) exam by the end of 13 active half-years.

The system described above concerns the Hungarian students.

Considering the special circumstances of the foreign students, the Rules of Study and Examination and the Rules of the Credit System which were introduced in the 2002/2003 academic year for students in the English-language programme have certain minor differences. These are as follows:

- The preliminary study requirements to register for a defined subject have certain flexibility in order to avoid the situation in which international students must stay in Hungary to repeat only one or a few subjects. However, 'walls' are built into the system at the end of the 4th semester by which time all previous curricular requirements must be met to enter the subsequent semester. In this way missing exams can be taken during a so-called inactive year. This allows the student to go home, have a job or spend his/her time in any other useful way instead of staying in Hungary and having only a few hours of obligations in a week.

9.2 COMMENTS

- Comment on standard of the students starting the course.

As a consequence of the rigorous and fully objective selecting system of admission the best applicants are admitted. So the level of knowledge of newly admitted students is generally adequate to pursue studies at the Faculty.

Though the selecting system of admission is really objective and excludes personal influences, it provides no opportunity to get any information about the motivation and aptitude of applicants for the profession.

- Comment on the ability of the Faculty to satisfactorily decide the number of students it can accept.
- Comment on the factors that determine the number of students admitted.

As outlined above, the Faculty on its own has practically no influence on the number of students admitted to the Hungarian class. The female/male ratio is increasing, in the last three years about 70% of the first-year students have been females. This does not cause any special problem in teaching, however it may have an impact on the labour market. The number of international students admitted is decided by the Faculty.

- Comment on the adequacy of the facilities and teaching programme to train the existing number of students.

Although the facilities are adequate, the number of students admitted to the German- and English-language training, however, is limited to be in harmony with the capacity of teaching facilities and staff. At present, we have reached the upper limit of our productive capacity and no further increase in the number of students can be made.

- Comment on the progress made by students in their studies, and the Faculty's ability to ensure that satisfactory progress is maintained.

Due to the credit system and for other reasons, it is not easy to follow up precisely the progress of individual students in the course of training; however, a rough estimation can be made. Thus, comparing the number (98) of Hungarian students admitted in 2007 with the number of students (55) who accomplished their study and graduated in 2013, it can be stated that eventually 56% of admitted students have graduated. Though this calculation neglects the inevitable overlapping, the obtained figure is rather informative and shows a fairly good completion rate.

- Comment on the percentage of students that will eventually graduate.

The percentage of students who graduate in due time (5.5 years) is around 60.0%, and the average duration of studies is generally longer than is desirable (Tables 9.3.3 and 9.3.3/1). These unfavourable facts can be at least partly explained by the weakness of the credit system. Another factor is that the students are not aware of the difference in the type of teaching

and learning at a secondary school and at the university, in spite of the pedagogic efforts made by the teaching staff to convince the students about this difference. Length of the study is frequently increased by the increased international mobility programmes of the students.

9.3 SUGGESTIONS

If you are not satisfied with the situation, please state in order of importance any suggestions that you may have concerning this Chapter if you feel unhappy about:

- The number of students admitted;
- The drop-out percentage and reasons , if known
- The average duration of studies;
- Other aspects.

It would be desirable to form an institutional body comprised of three to five young teachers who would provide frequent consultation and tutorial aid to the students with the aim of reducing the drop-out percentage and the average duration of studies.

Chapter 10. ACADEMIC AND SUPPORT STAFF

10.1 FACTUAL INFORMATION

Definitions:
For definitions, also see the section 'Main indicators' in **Annex I**.

Budgeted and non-budgeted posts: A distinction is drawn between:
- posts that are allocated to the Faculty and financed by the university or ministry responsible for the Faculty. These posts can be regarded as more or less permanent. They are termed 'budgeted posts';
- posts that depend upon finance in addition to the allocation of budgeted posts from public money. These posts can fluctuate in number. They are termed 'non-budgeted posts'.

Full-time equivalents (FTE): Posts can be occupied full-time or part-time. The number given should correspond to a total of full-time equivalents (FTE). For instance, 10 full-time posts plus two part-time posts at 50% plus 1 part-time post at 80% should be given as a total of 11.8 FTE.

VS versus NVS academic personnel: A distinction has to be made between teaching staff holding the degree of veterinary surgeon (VS) and non veterinary surgeon (NVS) teaching staff.

Teaching staff: It is understood fact that 'teaching' staff will also do research.

Research staff: This category includes academic personnel whose main task is to do research work, even though they may from time to time participate in undergraduate teaching.

Support staff: This includes all posts, regardless of the work undertaken; secretaries, administrators, technicians, animal caretakers, cleaners, etc.

Interns, residents, doctoral (Ph.D.) students are not included in the staff numbers unless they perform regular, paid teaching activities for at least 20% of their workload.

If you find that the distinctions made between different groups of staff do not fit your situation, make the best distribution you can of your personnel between the headings we use. Add an explanatory note if you wish.

Recruitment and promotion of the academic staff

Academic staff members are categorised into one of two groups: teaching or research. Those who do not fit into either of the two are mentioned under 'Others'. There is substantial overlapping in the activity of the teaching and the research staff, both are expected to do some teaching and research. However, there are some differences between them in terms of the number of holidays, which is difficult to justify.

Categorisation of the academic staff

Teaching staff	Research staff	Others
Full Professor	Scientific Advisor	Clinical Chief Veterinarian
Associate Professor	Senior Research Fellow	Clinical Veterinarian
Senior Lecturer (=Assistant Professor)	Junior Research Fellow	Department Engineer
Junior Lecturer (=Assistant)	Research Assistant	Biologist, Veterinarian

Since our Faculty is the only veterinary establishment in the country, and due to the fact that the Hungarian language is essential, the veterinary staff members are mainly our own graduates. The school is quite small and students are personally known by the academic staff, so the best graduates can be invited to join the Faculty; however, vacant positions must always be advertised in local veterinary journals and in the official journal of the Ministry of Human Resources. According to the Faculty rules, quality requirements have to be met by the applicants for nomination. Academic staff members are re-evaluated every five years. Detailed data are given below. Regarding the impact factor (IF) requirements, departments are divided into two categories, with higher IF scores expected in basic sciences than in clinical ones.

Minimum requirements for nomination and for holding a position at the Faculty

Full Professor	Teaching a compulsory subject of the programme
	Proficiency in English
	DSc or equivalent*
	Cumulated IF ≥ 13 (≥ 7 in clinical departments)
	Periodic examination (5 years): cumulated IF ≥ 6 (≥ 4.5 in clinical departments)
Associate Professor	Participation in teaching a compulsory subject of the programme, independent teaching of an elective subject
	Habilitation degree
	PhD or equivalent
	Cumulated IF ≥ 8 (≥ 4.5 in clinical departments)
	Periodic examination (5 years): cumulated IF ≥ 4 (≥ 3 in clinical departments)
	Proficiency in English
Senior Lecturer	Participation in teaching a subject of the programme
	Proficiency in English
	Cumulated IF ≥ 2, 3 or 4 (≥ 1, 2 or 3 in clinical departments) in the successive cycles
Junior Lecturer	Proficiency in English

* DSc = Doctor of Science, the highest scientific degree, recently a precondition of full professorship. After the submission and public defence of the DSc Thesis, the degree is awarded by the Hungarian Academy of Sciences as a recognition of long-term scientific activity.

Table 10.1. **Personnel in the establishment provided for veterinary training**

		Budgeted posts (FTE)		Non-budgeted posts (FTE)		Total (FTE)	
1. Academic staff		VS	NVS	VS	NVS	VS	NVS
	Teaching staff (total FTE)	52	17			52	17
	Research staff (total FTE)	77	46			77	46
	Others (please specify) (FTE)*	3.2				3.2	
	Total FTE	137	63			137	63
	Total FTE (VS + NVS)	195.2				195.2	
	FTE providing last year teaching**	133.7				133.7	
2. Support staff							
a)	responsible for the care and treatment of animals	45				45	
b)	responsible for the preparation of practical and clinical teaching	25				25	
c)	responsible for administration, general services, maintenance, etc.	189				189	
d)	engaged in research work						
e)	others (please specify)						
	Total support staff	259				259	
3. Total staff		454.2				454.2	

* Others: Contracted veterinarians taking part in the 11th semester (0.1 FTE)
** FTE providing last year teaching = Total FTE of Teaching Staff + Total FTE of Research Staff times 0.5 + FTE of Others;

In Table 10.2 supply information on the allocation of personnel to the various departments. The technical term 'Departments' refers to the component academic units of the Veterinary Faculty and may have another name (e.g. 'Institute'). The titles of the academic staff grades in the table may differ from country to country, and should be modified to suit your particular situation.

Table 10.2. **Allocation of academic (veterinary surgeon and non veterinary surgeon) teaching staff – expressed as FTE – and support staff to the various departments**

Department name	**Academic teaching staff**										**Support staff** (see Table 10.1)		
	Full Professor		Associate Professor		Assistant Professor		Assistant		Other[1)]		Technical	Animal carers	Adminis-trative
	VS[2)]	NVS[3)]	VS	NVS	VS	NVS	VS	NVS	VS	NVS	(b + d + e)	(a)	(c)
Anatomy and Histology	1	1	2	1	1	1			1		6		1
Animal Breeding, Nutrition and Laboratory Animal Science	1			2	1				5	6	6	2	3
Animal Hygiene, Herd Health and Veterinary Ethol-ogy			1		1				4	1	4		1
Biomathematics and Informatics		1		1						4	1		1
Botany		2		2				1		6	1		2
Chemistry		1		2		1				4			1
Food Hygiene	1								1	6	2		1
Foreign Languages										5			
Internal Medicine	1		3		2		1		14	1	11	11	6
Department and Clinic for Farm Animals	1		1						4		4	1	2
Equine Department and Clinic			1		1		3		10		8	8	4
Microbiology and Infectious Diseases	2		2		2				3	2	6		1
Obstetrics and Reproduction	2		1						5		5	4	1
Parasitology and Zoology	1		1			1			2	1	3		1
Pathology and Forensic Veteri-nary Medicine	1		3		1				2	1	4		2
Pharmacology and Toxicology	1		2		1				2	2	6		1
Physical Education										2	2		2
Physiology and Biochemistry	2		2						4	5	7		2
State Veterinary Medicine and Agricultural Eco-nomics			1		1				3				1
Surgery and Oph-thalmology			1		2				7		2	10	2

[1)]please specify; [2)]veterinary surgeon; [3)]non veterinary surgeon

Ratios: From the above data please delineate the following ratios

Table 10.3. Ratios students/staff

		Denominator
R 1:	$\frac{no.\ total\ academic\ FTE\ in\ veterinary\ training^{3}}{no.\ undergraduate\ veterinary\ students^{2}} = \frac{195.2}{1286} = \frac{1}{6.58}$	6.58
R 2:	$\frac{no.\ of\ total\ FTE\ at\ Faculty^{3}}{no.\ of\ undergraduate\ students\ at\ Faculty} = \frac{454.2}{1286} = \frac{1}{2.83}$	2.83
R 3:	$\frac{no.\ total\ VS\ FTE\ in\ veterinary\ training^{3}}{no.\ undergraduate\ veterinary\ students^{2}} = \frac{137}{1286} = \frac{1}{9.38}$	9.38
R 4:	$\frac{no.\ total\ VS\ FTE\ in\ veterinary\ training^{3}}{no.\ students\ graduating\ annually} = \frac{137}{108^{*}} = \frac{1}{0.79}$	0.79
R 5:	$\frac{no.\ total\ FTE\ academic\ staff\ in\ veterinary\ training^{3}}{no.\ total\ FTE\ \sup port\ staff\ in\ veterinary\ training^{3}} = \frac{195.2}{259} = \frac{1}{1.32}$	1.32

1) applies only to those faculties, which offer additional courses to the veterinary curriculum,
2) Table 9.1 3) Table 10.1 * year prior to visitation

- Outline how the allocation of staff to the Faculty is determined.
- Outline how the allocation of staff to the departments (or other units) within the Faculty is determined.
- Indicate whether there are difficulties in recruiting or retaining staff.
- Describe (if appropriate) any relevant trends or changes in staff levels or the ability to fill vacancies over the past decade.
- Indicate whether it is easy to employ additional staff from service income (e.g. from revenues of clinical or diagnostic work).
- Describe the regulations governing outside work, including consultation and private practice, by staff working at the establishment.
- Describe the possibilities and financial provisions for the academic staff to:

a) attend scientific meetings;

b) go on a sabbatical leave.

The basic salary of academic persons working in higher education was last increased in 2006, and now it is inadequate compared to other sectors. Due to this and the high workload, as well as to the overall financial restrictions at universities, the industry and the private sector have become more attractive for young veterinary graduates. In the past decade there was a significant migration toward these sectors where salaries may be twice as high as that provided by academic institutions, and an additional bonus package (company car, free phone, free travel opportunities, etc.) is also provided. Looking for more favourable research conditions, postdoctoral research fellows typically leave for foreign (mainly overseas) laboratories or universities.

As a consequence, in some disciplines (e.g. food hygiene, pathology, surgery) the Faculty has already been faced with the problem of making replacements among the teaching staff. In order to retain the remaining academic staff members, private practice, consultation and outside work is allowed, although they may represent a conflict of interest. Although theoretically possible, it is very difficult to employ additional staff from service income (clinical revenues) or grants

because these revenues are very much needed to replace outdated instruments, for research consumables or for funding participation in scientific meetings.

The allocation of budgeted posts in the establishment (Table 10.2) has been developed over the past decades to its current level. There are always requests for additional personnel but these can be fulfilled only if the need is justified by a substantially increased workload and if somewhere else a reduction is made which is an extremely sensitive issue.

Because of the difficult financial situation, the Faculty cannot afford to pay a sabbatical leave or support attendance at scientific meetings from its budget. In exceptional and justified cases (such as giving an oral presentation at a prestigious international meeting where the presence of someone from the school is of the utmost importance and can be co-financed by the participant) some support is awarded. To provide funds for PhD students and young postdoctoral fellows, an additional subsidy is given each year from the central budget for those who have research grants.

10.2 COMMENTS

- Comment on the numbers of personnel in the various categories.
- Comment on the salary levels, especially those of academic staff in relation to the level of income in the private sector.
- Comment on the ease or difficulty of recruiting and retaining personnel.
- Comment on the percentage of veterinarians in the academic staff.

In several higher education establishments the official declarations from politicians about the development of a 'science-based society' together with the former per capita state funding system resulted in a substantial increase in student intake which was not followed by an appropriate increase in teaching staff. As a consequence, in some disciplines like law and economics not only there is already an overproduction of graduates but the quality of teaching is also impaired. In veterinary education the former ('numerus clausus') system was maintained which prevented a significant increase in student enrolment; therefore, our Faculty was not seriously affected by the mass production of academics who may not find jobs in the future. However, government officials strongly believe that a higher student/teacher ratio means that the establishment is more efficient.

In general, the total number of personnel in the various categories just meets the needs of the student population. Although it would be advantageous, for the time being there is no realistic chance to get funds for increasing the academic staff. As discussed earlier, it is more and more difficult to retain or recruit academic personnel because there is a substantial difference between the salary level of academics in public service as compared to the income offered in the private sector.

10.3 SUGGESTIONS

- Veterinary education has to be recognised as a teacher-intensive and expensive course that must not follow the current trend of increased student/teacher ratio. For this reason, the official understanding that veterinary training has to include a great deal of hands-on practicals in laboratories, section rooms, and animal facilities, is extremely important. In order to guarantee the high quality of veterinary training, the best graduates should be recruited by the establishment which is possible only if the salary level in the public sector is increased.
- Since the duties of the teaching and research staff are very similar, it is not reasonable to maintain these two separate categories, and it can be suggested that they form one single category with the same rights and liabilities.

- One possible way to improve our clinical training would be to invite outside clinicians to our Faculty. The involvement of private veterinary clinicians in our training programme might also contribute to a better co-operation between the Faculty and the veterinary community.

Chapter 11. CONTINUING EDUCATION

11.1 FACTUAL INFORMATION

Please describe the role of the Faculty in providing continuing education.

Continuing Education (CE) in Hungary is offered by several educational and non-educational bodies such as the FVSB, the Hungarian Veterinary Chamber (HVC), as well as vaccine and pharmaceuticals manufacturing companies. The FVSB organises, and participates in, these educational forms, and by its nature is the most important body of continuing education.

Act CXXVII of 2012 on the Hungarian Veterinary Chamber and veterinary services makes continuing education compulsory for every practicing veterinarian. Requirements are further specified by the Hungarian Veterinary Chamber in its 'regulations concerning further training' which is updated regularly (latest update: 10.10.2012, valid from 01.01.2013). According to this, practicing veterinarians must gain at least 300 points over a three-year period. Points are assigned to continuing education and postgraduate training courses (as well as conferences, publishing and other activities) by the committee of the HVC responsible for further training. According to the Act, an independent veterinary practice can only be initiated after 5 years of practical work and only if the veterinarian possesses one of the following:

- PhD degree
- Veterinary expert's diploma
- Expert of the HVC
- European College member

The widespread CE activity of the FVSB covers all aspects of continuing education. This teaching system is conducted with the professional support of, and in close co-operation with, the Hungarian Veterinary Chamber, the State Veterinary Service and, in the case of the PhD training, the Hungarian Accreditation Committee. The FVSB is responsible for PhD training and the continuing education leading to the veterinary expert's diploma. The HVC is entitled to issue a qualification 'Expert of the HVC', but the Faculty staff members are also invited to be members of the HVC examination committees.

The Centre of Research and Postgraduate Training (CRPT) of the FVSB, headed by one of the vice deans, is responsible for the operation, organisation and co-ordination of the continuing education system. The vice dean supervises and synchronises the activities of the independent Council for Veterinary Doctoral (PhD) School.

Besides the usually four-semester-long veterinary expert training, the CRPT organises educational events as short-term (usually one-day-long) courses (Table 11.1.1) that cover current and often specialised knowledge focusing on the practical aspects within a given area.

Course organisers, lecturers, and tutors are recruited mainly from the Faculty members, but staff members of other organisations, like the different Directorates (Animal Health and Animal Welfare, Veterinary Medicinal Products, Veterinary Diagnostics) of the National Food Chain Safety Office, the Institute for Veterinary Medical Research, Centre for Agricultural Research of the Hungarian Academy of Sciences, the HVC, the State Veterinary Service, and for certain topics highly recognised practitioners are also invited and involved.

Table 11.1.1. **Courses organised by the establishment itself in the most recent year: 2012/2013**

Title of the course		**No. of participants**	**No. of lecture hours**
Állatterápia	Animal Therapy	14	32
Állatvédelmi nap	Animal Protection Day	34	8
Bakteriális zoonózisok	Bacterial Zoonoses	27	8
Citológia	Cytology	10	16
Csontsebészet II.1	Bone Surgery II/1	25	16
Csontsebészet II.2	Bone Surgery II/2	25	16
Fizikális vizsgálatok	Physical Examinations	26	6
Halak betegségei	Fish Diseases	42	12
Hatékony kommunikáció	Efficient Communication	12	8
Hematológia	Haematology	9	8
Idült hasmenés	Chronic Diarrhoea	14	4
Képalkotó eljárások	Imaging Techniques	19	12
Klinikai farmakológia	Clinical Pharmacology	47	16
Onkológia	Oncology	10	8
Praxismenedzsment	Practice Management	8	8
Rizikópáciensek altatása	Anaesthesiology of High-risk Patients	34	8
Röntgenológia	Radiology	19	16
Sikeres értékesítő állatorvos	Successful Sales Veterinarian	18	8
Sikeres értékesítő asszisztens I.	Successful Sales Assistant I	17	8
Sikeres értékesítő asszisztens II	Successful Sales Assistant II	12	8
Total: 20		**367**	**226**

11.2 COMMENTS

- Comment on the quality of the continuing education programmes in which the Faculty is involved.
- Comment on the degree of participation of veterinarians in the continuing education programmes in which the Faculty is involved.

The quality of CE at the FVSB is ensured and monitored by an ISO 9001:2009 based quality assurance system. Detailed information about the various education possibilities is available for all interested persons (CRPT homepage, advertisements, and direct contact). Seminars are professionally evaluated by both the head of the CRPT and by the representatives of the HVC as an external quality controller. HVC evaluates the seminars by points, taking into account both the

professional level and the number of hours. One of the basic requirements for having a practice licence is collecting 300 points over a period of three years. The feedback from the participants is an important chance for the quality control of CE courses and their further development. Student feedback is an essential part of evaluating the courses, the teaching and organisation environment and the lecturers. Feedback questionnaires are completed at the end of each course (or semester), and the next course is redesigned based on their results. An essential part of the questionnaire is suggestion from students about further topics that may be of interest. The continuing education courses and programmes offered continuously receive positive evaluations.

CE is mandatory for Hungarian practitioners and is a prerequisite for having a licence to practice. Thus, all practitioners sign up for our postgraduate courses. Due to a more thorough analysis of demands and better advertisement, more accessible courses took actually place (from 58% in 2011 to 71% in 2012). Since most of these are one-day courses, all participants finish the course once they have been enrolled.

11.3 SUGGESTIONS

Quality assurance has to be continuously improved together with the quality of teaching, based on student feedbacks. The number of practical training hours should be increased where such form of training is applicable. For the stronger involvement of practitioners in postgraduate education, distance learning possibilities have to be better utilised. The administrative staff of the CRPT is already overworked; the number of CRPT organisers has to be increased by one or preferably two new colleagues. Courses are currently offered in Hungarian; the introduction of English courses has to be a goal.

Chapter 12. POSTGRADUATE EDUCATION

This heading covers all further training leading to a diploma – special postgraduate studies, Ph.D. courses, research training programmes, and national or European College specialised qualifications. Please provide details of all postgraduate training opportunities in tabular form under 'Factual Information'.

12.1 FACTUAL INFORMATION

Veterinary expert training and diploma: nationwide postgraduate specialisation of veterinary practitioners, state veterinary officers and laboratory veterinarians. The Hungarian Accreditation Committee accredits this course-based education system and the diploma obtained at the end on a national level. The diploma is on the HVC list of requirements of independent practice and is recognised by the HVC. The number of courses is evaluated by the Chamber and suggestions are introduced to the curriculum. Participants are admitted after at least three years of relevant activity in their practice. These courses last for four semesters with two-week-long intensive teaching periods completed by practical training and exams at the end of each semester.

Courses available (advertised and held regularly depending on demand):

- Related to clinical training and years of starting the course:
  - Small Animal Science and Medicine (1996, 2000, 2003, 2007, 2011, 2014)
  - Equine Science and Medicine (2005, 2014)
  - Porcine Production and Medicine (2004, 2014)
  - Ruminant Production and Medicine (2013)
  - Poultry Production and Medicine (2006)
- Related directly to veterinary clinical sciences and years of starting the course:
  - Food Hygiene and Veterinary Public Health (1999, 2006, 2013)
  - State Veterinary Medicine and Infectious Diseases (1999, 2002, 2005, 2008, 2014)
  - Veterinary Microbiology (1997, 2004)
- Courses also offered for non-veterinarians:
  - Experimental Toxicology (1998, 2000, 2004, 2010)
  - Hippologist and Organiser (2007, 2009, 2011, 2013)

Although the veterinary expert training system is unusual for other countries, it is an efficient way of specialisation for veterinarians as they receive the highest level of theoretical and practical knowledge that is constantly updated by the FVSB, working together with the HVC and the veterinary authorities. Acceptable suggestions in the feedback from students (see Chapter 11) are built in the curriculum of the subsequent course.

The Centre of Research and Postgraduate Training (CRPT) of the Faculty constantly monitors the activities of the Veterinary Committee for Continuous Education in Europe (VetCEE) in the development of a system whereby practising (non-academic) veterinarians could gain recognition for postgraduate attainment in their chosen field, providing the basis for the mutual recognition of programmes with appropriate standards across Europe and perhaps finally leading to a 'VetCEE-accredited' status of such trainings. When renewing the FVSB course accreditations these developments will be taken into consideration.

12.1.1 CLINICAL SPECIALTY TRAINING (INTERNS AND RESIDENTS)

- Indicate whether students involved in this training receive a grant or a salary.
- Indicate any programmes that are certified by the European Board of Veterinary Specialisations.

Currently there is no formal and independent resident training at the FVSB, although the Faculty is making preparations for the introduction of such activities. The number of European College members at the FVSB is increasing: as of 2013 there are 16 active Diplomates in different European Colleges (Table 12.1.1.1).

Table 12.1.1. **Number of diplomates and residents in different European Colleges at the FVSB as of 17 July 2013**

Current number of diplomates	
European College of Bovine Health Management (ECBHM)	4
European College of Animal Reproduction (ECAR)	3
European College of Veterinary Surgeons (ECVS)	2
European College of Zoological Medicine (ECZM)	2
European College of Small Ruminant Health Management (ECSRHM)	1
European Veterinary Parasitology College (EVPC)	1
European College of Veterinary and Comparative Nutrition (ECVCN)	1
European College of Veterinary Clinical Pathology (ECVCP)	1
European College of Porcine Health Management (ECPHM)	1
Current number of residents at various trainings	
European College of Veterinary Surgeons (ECVS)	1
European College of Equine Internal Medicine (ECEIM)	1
European College of Veterinary Dermatology (ECVD)	1
European College of Veterinary Internal Medicine (ECVIM)	1

As part of the establishment of independent residency programmes, a co-operation in the practical training of residents of animal reproduction was initiated and an agreement signed between the FVSB and the University of Vienna (12 November 2012) under the supervision of Prof. Sándor Cseh (ECAR Diplomate), Head of the Department and Clinic of Obstetrics at the FVSB. Students from Vienna (3) and Budapest (5) take part in this exchange programme.

Interns and residents working at the Faculty's departments are expected to attend seminars listed in Table 11.1. The personalised schedule for each student is constructed by the head of the appropriate department. Specific clinical education is given within the framework of everyday clinical activities.

Interns and residents who are employees of the Faculty receive a salary; others usually are supported financially by their employers.

12.1.2 RESEARCH EDUCATION PROGRAMMES

PhD students of the FVSB receive a uniform training organised and supervised by the Council for Veterinary Doctoral (PhD) School. The PhD programme has a core duration of 3 years and consists of the following activities:

- Participation in PhD courses (see Annex)
- Research

- Teaching
- Writing scientific articles and completing the PhD thesis

During the training students have several opportunities to extend their knowledge and experience by short-term fellowships in foreign countries.

Table 12.2a. **Postgraduate research training programmes and number of enrolled students as of May 2013**

Type of degree	**Duration of training**	**Number enrolled**	
		Full time	**Part time**
PhD, Veterinary sciences	36 months	27	13
The percentage of PhD students holding a veterinary degree: 60% (24 of 40)			
Other doctoral level	Not applicable		

Table 12.2b. **Number of PhD students from 2004 to 2012**

PhD students	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**SUM**
ENROLLED	10	17	14	12	21	20	24	12	11	141
cancelled	1	1	1	0	4	4	5	0	0	16
students	0	0	1	0	2	16	19	12	11	71
candidates	9	16	12	12	15	0	0	0	0	64
ongoing	4	7	8	12	12	0	0	0	0	53
successful	5	8	4	0	2	0	0	0	0	19
unsuccessful	0	1	0	0	1	0	0	0	0	2

Please indicate when and where and whether the students require a grant or salary.

- 8–10 students per year have been awarded state grants for 36 months
- The number of graduates who enter such a program: about 9 heads (±2)

12.2 COMMENTS

Comment on the number of postgraduate diplomas/titles awarded annually.

Comment on the percentage of veterinarians participating in postgraduate research training programmes.

Despite the fact that the requirements of the national specialisation system (veterinary expert training) of veterinary practitioners, state veterinary officers, and laboratory veterinarians do not meet the requirements of the European Specialist qualification (i.e. the qualification system organised and supervised by various European colleges with discipline-based competence), it is certainly an effective and efficient method to increase and update the knowledge of the practitioners nationwide. It also can help those who are seeking a European Specialist diploma.

Up to now, about one-fifth of Hungarian veterinarians have received a diploma in some kind of veterinary expert training courses through our continuing education system. The CE programme is of great help for those practitioners who rely on Hungarian-language training. The new

generation acquires more and more advanced English skills, and this helps them update their professional knowledge more efficiently.

12.3 SUGGESTIONS

The quality of teaching must be continuously improved. It is desirable to maintain the number of veterinary expert training courses offered, and the number of students participating in them should be increased to cover the majority of veterinarians in Hungary. The compulsory and elective courses of the PhD programme have to be re-evaluated on a regular basis in order to comply with the developments in veterinary science. The postgraduate training including PhD, internship or residency should be extended to the international level, focusing in particular on the Carpathian basin. The educational strategy has to be developed in a way that gives the FVSB the chance to become an education centre for ECAR followed by ECBHM, ECVS and ECZM.

Chapter 13. RESEARCH

The details requested under this heading relate only to research experience offered to students during their undergraduate training, for example through project work.

13.1 FACTUAL INFORMATION

Indicate the involvement of undergraduate students in research, including the time spent, percentage of students involved and outcome required.

Involving and introducing veterinary students in scientific research is a traditional part of our teaching strategy. During the undergraduate years every veterinary student actively participates in research through their veterinary thesis project, which includes an experimental research part, either a laboratory experiment, a clinical study or an analytical activity. The education is concluded with a thesis, and students must work independently under the supervision of a recognised scientist on a scientific project. The thesis is presented at a public defence in front of internal and external examiners. The grade obtained is part of the final grade of the diploma. The main thesis supervisor must be a Faculty member of the FVSB.

A nationwide operating body, the so-called 'Council of National Scientific Students' Associations' organises and supports the participation of undergraduate students in research. All universities and faculties have their own Scientific Students' Associations, as does our Faculty. Despite the limited financial resources the scientific environment and atmosphere are stimulating for the undergraduate students, and 20–40% of them join several research teams. Students spend approximately 5–15 hours/week with research activities for one to three years.

Every year, in November, a conference of the Scientific Students' Associations is organised at the campus, when 30–40 scientific presentations are delivered by students. Besides the 10-minute presentations, students have to prepare a 15- to 30-page paper (comparable to a manuscript for an international peer-reviewed journal) that is evaluated prior the conference by the FVSB Students' Association Committee (comprising professors from different departments of the FVSB). The performance of the students is evaluated by this committee as well as by a group of fellow students. The best students attend the Conference of the National Scientific Students' Associations (that include students of every higher education institute of Hungary) held every second year. The students earning prizes at the Faculty-level conferences are regularly highly ranked on the national level, as well (in 2013: 7 first, 3 second and 7 third prizes, together with 4 special awards). A substantial part of the thesis is incorporated into the publications of the departmental research team citing the student(s) as co-authors of the papers.

13.2 COMMENTS

Comment on the opportunities for students to participate in active research work.

Research teams in and out of the Faculty announce topics available for student research. This activity is managed by the local organization of the Scientific Students' Association.

As mentioned before all students must complete a 5-10 month research period by the end of their undergraduate studies and must also prepare a diploma dissertation. This is a mandatory requirement in order to receive an DVM degree and is independent of participation in Scientific Students' Association activities. (It should be mentioned, however, that students participating in the yearly conference of the Scientific Students' Association can, without revision, submit their papers as diploma dissertation.)

13.3 SUGGESTIONS

Will students be given more opportunity to participate in research activities? If so, how will this be done?

The impressive number of students participating at Scientific Students' Association conferences should be maintained in the future. In order to achieve that, operating funds for student research must be increased. The FVSB has been awarded with the title 'Research Faculty' for 2013–2016, and a significant budget was allocated for maintaining and increasing the research output. Part of this budget is used for student research.

ANNEX 1. Courses for PhD Students

PhD	Subject		No. of lecture hours
A1	A biostatisztika alapjai és a kapcsolódó feladatok megoldása számítógép segítségével	Basics of biostatistics and computer-aided solving of related problems	**32**
A1	Alkalmazásorientált biostatisztika Excelben	Application-oriented biostatistics in Excel	**16**
A1	Kísérletek tervezésének és kiértékelésének statisztikai módszerei	Statistical methods of experimental design and data analysis	**24**
A1	Természettudományos kutatások tervezése	Design of research in life sciences	**24**
A1	Laborállat-tudomány és állatvédelem	Laboratory animal science and animal welfare	**80**
A1	Tudományos publikáció készítése.	Writing scientific papers	**28**
A1	Grafika és prezentáció	Graphics and presentation	**24**
A1	Könyvtári informatika távoktatás	Library informatics, distance learning	**16**
A2	Epidemiológiai vizsgálatok tervezése és kiértékelése	Design and evaluation of epidemiological investigations	**24**
A2	Pályázat- és innováció-menedzsment	Tender and innovation management	**30**
A2	Bevezetés a pedagógiába: kommunikatív didaktikai alapvetés	Introduction to pedagogy: basics of communicative didactics	**12**
A2	Kutatási etika	Research ethics	**10**
A2	Regressziós modellek, regresszió-számítás a kutatásban	Regression models, regression analysis in research	**24**
A31	Modellek a populációbiológiában	Mathematical models in population biology	**30**
A31	Biogeográfia I-II.	Biogeography I–II	**60**
A31	Többváltozós statisztikai módszerek	Multivariable statistical methods	**42**
A31	Számítógépes statisztika gyakorlat	Computer practical in statistics	**56**
A31	Klinikai genetika	Clinical genetics	**21**
A31	Redox állapot és oxidatív stress a sejtek életében	Redox state and oxidative stress in cellular life	**6**
A31	Bioinformatics	Bioinformatics	**20**
A31	The molecular physiology of the cells	The molecular physiology of the cells	**15**
A31	Molekuláris módszerek az állatorvosi diagnosztikában	Molecular methods in veterinary diagnostics	**20**
A31	Számítógépes modellezés	Computer-aided modelling	**45**
A31	Bayesi statisztikai módszerek	Bayesian statistical methods	**42**
A31	Elektrokardiográfia a kisállat-orvoslásban	Electrocardiography in small animal medicine	**14**
A31	Baktériumok okozta betegségek molekuláris patogenézise	Molecular pathogenesis of bacterial diseases	**14**

A31	Ökotoxikológia ökológiai rendszerekben.	Ecotoxicology in ecological systems	**30+15**
A31	A baromfitakarmányozás alapjai	Basics of poultry nutrition	**10**
A31	Az állatorvosi kardiológia alapjai	Basics of veterinary cardiology	**15**
A31	Culture of eukaryotic cells	Culture of eukaryotic cells	**40**
A31	Összehasonlító virológia	Comparative virology	**10**
A31	Andrológia és asszisztált reprodukciós eljárások	Andrology and methods of assisted reproduction	**32**
A31	Szarvasmarha állomány-egészségtan	Bovine herd health	**24**
A31	Társ- és egzotikusállatok klinikai farmakológiája	Clinical pharmacology of companion and exotic animals	**18+1**
A31	Sertéstelepi menedzsment a gyakorlatban - l. modul	Pig farm management in practice: Module I	**10**
A31	Sertéstelepi menedzsment a gyakorlatban - II. modul	Pig farm management in practice: Module II	**10**
A31	Sertéstelepi menedzsment a gyakorlatban - III. modul	Pig farm management in practice: Module III	**10**
A31	Mikrobiológiai biotechnológia	Microbial biotechnology	**16**
A31	Szaporodásbiológiai ultrahang-echográfia	Ultrasonography in reproduction	**12**
A31	Állatorvosi neonatológia	Veterinary neonatology	**12**
A31	Az állatok biomechanikájának alapjai és a mozgáselemzés gyakorlati problémái	Basics of animal biomechanics and practical problems in motion analysis	**20**
A31	Doppler-ultrahang módszerek alkalmazása a kisállat-gyógyászatban	Applications of Doppler ultrasonography in small animal medicine	**16**
A31	Immunhisztokémiai módszerek az állatorvosi szövettanban	Methods of immunohistochemistry in veterinary histology	**20**
A31	Az Excel táblázatkezelő használata felsőfokon	Advanced operation of Excel spreadsheet application	**24**
A31	Toxicitási vizsgálatok irányelvei és a vizsgálatok tervezése	Guidelines and experimental design in toxicity studies	20
A31	Vegyi anyagok engedélyezése, kockázatbecslés	Licensing of chemicals and risk assessment	8
R	Állatorvosi röntgenológiai alapismeretek (alaptanfolyam)	Fundamentals of veterinary radiology (basic training course)	**32**
R	Rizikópáciensek altatása, az altatási szövődmények megelőzése és kivédése kisállatokban	Anaesthesiology of high-risk patients, prevention and avoidance of anaesthetic complications in small animals	**8**
R	Parazitozoonózisok	Parasitic zoonoses	**7**
R	Állatorvosi röntgenológiai alapismeretek (szinten tartó)	Fundamentals of veterinary radiology (level-maintaining course)	**16**
R	Méhegészségügy időszerű kérdései	Actual problems in honey bee health	**8**
R	Neurotoxicologia	Neurotoxicology	**17**
R	Ultrahang-diagnosztikai módszerek alkalmazása a kisállat-gyógyászatban.	Applications of ultrasound diagnostics in small animal medicine	**18**
R	A szarvasmarha-egészségügyi menedzsment gazdasági kérdései	Economic aspects of bovine health management	**16**

R	A Word használata felsőfokon	Advanced operation of Word	**24**
R	Kedvtelésből tartott állatok bántalmazásának jogi és szakmai megítélése	Legal and professional opinion on the abuse of pet animals	**8**
R	Állatkísérletek jogi és állatvédelmi megítélése	Legal and animal welfare judgement of animal experiments	**8**

ANNEX 2. Denominators of FVSB and EAEVE denominators

RATIO	FORMULA	FVSB	EAEVE
R1	$\frac{\text{no. total academic FTE in veterinary training}}{\text{no. undergraduate veterinary students}}$	**6.58**	**8.796**
R2	$\frac{\text{no. of total FTE at Faculty}}{\text{no. of undergraduate students at Faculty}}$	**2.83**	**9.619**
R3	$\frac{\text{no. total VS FTE in veterinary training}}{\text{no. undergraduate veterinary students}}$	**9.38**	**11.324**
R4	$\frac{\text{no. total VS FTE in veterinary training}}{\text{no. students graduating annually}}$	**0.79**	**2.151**
R5	$\frac{\text{no. total FTE academic staff in veterinary training}}{\text{no. total FTE sup port staff in veterinary training}}$	**1.32**	**0.49–1.933**
R6	$\frac{\text{theoretical training}}{\text{supervised practical training}}$	**0.7**	**0.562**
R7	$\frac{\text{clinical work}}{\text{laboratory and desk based work} + \text{non} - \text{clinical animal work}}$	**1.32**	**1.913**
R8	$\frac{\text{self directed learning}}{\text{teaching load}}$	**13.14**	**2.93–89.091**
R9	$\frac{\text{total no. curriculum} - \text{hours Food Hygiene / Public Health}}{\text{total no. hours vet. curriculum}}$	**17.97**	**0.870–90.029**
R10	$\frac{\text{total no. curriculum} - \text{hours Food Hygiene / Public Health}}{\text{hours obligatory extramural work in veterinary inspection}}$	**0.47**	**0.069–0.924**
R11	$\frac{\text{no. of students graduating annually}}{\text{no. of food} - \text{producing animals seen at the Faculty}}$	**1.768**	**0.993**
R12	$\frac{\text{no. of students graduating annually}}{\text{no. of individual food} - \text{animal consultations outside the Faculty}}$	**25.9**	**7.786**
R13	$\frac{\text{no. of students graduating annually}}{\text{no. of herd health visits}}$	**0.83**	**0.333**
R14	$\frac{\text{no. of students graduating annually}}{\text{no. of equine cases}}$	**5.916**	**2.611**
R15	$\frac{\text{no. of students graduating annually}}{\text{no. of poultry / rabbit cases}}$	**3.685**	**0.506**
R16	$\frac{\text{no. of students graduating annually}}{\text{no. of companion animals seen at Faculty}}$	**108.425**	**43.697**
R17	$\frac{\text{no. of students graduating annually}}{\text{poultry (flocks) / rabbits (production units) seen}}$	**0.56**	**0.042**
R18	$\frac{\text{no. of students graduating annually}}{\text{no. necropsies food producing animals} + \text{equines}}$	**10.21**	**1.018**
R19	$\frac{\text{no. of students graduating annually}}{\text{no. poultry / rabbits}}$	**31.05**	**0.591**
R20	$\frac{\text{no. of students graduating annually}}{\text{necropsies companion animals}}$	**5.39**	**1.516**