

University of *Ljubljana*

Veterinary Faculty



# **SELF-EVALUATION REPORT**

University of Ljubljana, Veterinary Faculty

Ljubljana, 2009



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## ❖ PREFACE

The Veterinary Faculty University of Ljubljana is constantly striving to achieve better results in the realization of their anticipated programmes. In 1990, one of the most important events in the development of veterinary education in Slovenia occurred when the independent Veterinary Faculty was formed from the former Veterinary Department of the Biotechnical Faculty.

The next important year was 1992, when the newly adopted law awarded the graduates of the Veterinary Faculty the title 'The Doctor of Veterinary Medicine'.

From 1994, the Veterinary Faculty has successfully cooperated with veterinary universities from Brno, Budapest, Vienna and Košice within the framework of the VetNEST network. The network has been enlarged over the past ten years by including faculties from Wrocław, Zagreb, Sarajevo and Skopje. Student and staff exchange among the above mentioned institutions was performed mainly within the CEEPUS programme.

From 1998, the Faculty has been eligible for participation in the Socrates/Erasmus programme. The bilateral agreements were signed with veterinary establishments for higher education from Vienna, Austria (University of Veterinary Medicine); Brno, Czech Republic (University of Veterinary and Pharmaceutical Sciences Brno); München, Germany (Ludwig-Maximilians University); Zagreb, Croatia (University of Zagreb, Faculty of Veterinary Medicine); Pisa, Italy (University of Pisa, Faculty of Veterinary Medicine); Vila Real, Portugal (University de Trás-os-Montes e Alto Duro); Amsterdam (Vrije Universiteit Amsterdam, Faculty of Earth & Life Sciences).

In the previous decade, special concern was dedicated to renovating buildings and up-grading equipment as well as the modernization of the teaching facilities. In the last few years most attention has been paid to the implementation of the up-dated undergraduate and postgraduate "Bologna" curricula, considering above all the changes that guarantee that the "first-day competences" might be achieved at the time of graduation.

The presented Self-Evaluation Report was prepared after wide discussion at all clinics and institutes by a special working group and was adopted by the Senate of Veterinary Faculty University of Ljubljana, on July 1st, 2009.

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## 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.*

## MISSION

The mission of the Veterinary Faculty, University of Ljubljana is to assure, on the basis of its research and professional activities and experience, the education of veterinary surgeons which will meet the requirements of the veterinary profession in the field of animal health care, animal welfare as well as public health, such as food safety and the prevention of the spread of zoonotic diseases and to assure the excellence of its institutes, clinics and testing laboratories.

## VISION

The Veterinary Faculty, University of Ljubljana is to be an internationally recognised and a leading veterinary institution (regarding teaching, research and professional activity) not only in Slovenia but also in central and south-east Europe.

For this purpose, the VF will strive for European accreditation, respecting ENQA recommendations for the educational process and the ISO 17025 accreditation for the testing laboratories.

The strategic goals of the Veterinary Faculty are compliant with the strategy of the University of Ljubljana.

- ❖ *the main organisational changes*

The Veterinary Faculty, University of Ljubljana was successfully evaluated by the EAEVE visiting team in 1998. In the evaluated study year 1996/1997, 360 students were enrolled, and the total staff number was shown to be 151 (74 teaching staff). The total revenues were EUR 8,815,000 (budget sources EUR 5,447,000 non budget sources EUR 2,497,000).

The total revenues of the Faculty were formed as follows: Ministry of Education and Sport 22%, Ministry of Science and Technology 12%, Ministry of Agriculture, Forestry and Food 35% and operative activity 31%.

In 2007/2008, 449 undergraduate students were enrolled. The teaching, research and professional activities were performed by 382 FTE employees, (104.9 FTE teaching staff).

The total revenues in 2008 were EUR 17,519,814.73 (budget sources and non- budget sources, Business Report 2008).

The total revenues of the Faculty were formed as follows: Ministry of Higher Education 18.5%, Research Agency RS 9%, Ministry of Agriculture, Forestry and Food 58.5% and operative activity 14%.

Since 1998 the following organisational changes have been made to improve teaching and learning conditions and research possibilities:



- **Centre for Information Technology and the Library** were reorganised as a single organisational unit in the year 2000.
- *To assure better conditions for clinical training and research on different animal species, mainly commercial animals, the **Centre for sustainable re-cultivation VREMŠČICA** was established in 2000. On more than 380 hectares there are 440 sheep, 22 rams, 10 pigs of indigenous Slovene breeds, 30 donkeys, some goats and game. Today it serves as a place for practical training, research activities and bio production of sheep's milk and cheese.*
- **The Centre for animal genomics** was established in 2004. The basic activity of the centre is research using genetically modified animal models. The Centre collaborates with a wide range of research institutions in Slovenia and abroad.
- The main organisational change was made following the requirements of the new Veterinary Practice Act (OG. RS 33/01), by establishing the **National Veterinary Institute (NVI)** in 2001 as an internal unit of the Veterinary Faculty. The NVI performs some activities of the state veterinary service - it is in charge of laboratory diagnostics to control animal diseases and the hygiene of food of animal origin and the suitability of feed stuff. The NVI performs the duties of approved laboratories and national reference laboratories, it is in charge of the health protection of bees and fish, and it performs risk assessments for special situations and is involved in other activities that are defined by the veterinary regulations. The faculty staff is involved in the professional work of the NVI; therefore they know the problems arising in the actual veterinary practice that can be transferred to the students during lectures or in their practical work. Also, students of the Veterinary Faculty gain some expertise in laboratory work by working in the laboratories of the NVI under supervision.

❖ *new regulations relating to teaching*

After the independence of the Republic of Slovenia in 1991, the first regulations regarding higher education were adopted in 1993 as the Higher Education Act (OG RS 67/93) It was supplemented and updated several times in the following years (1995, 1998, 1999, 2001, 2003, 2004). The new version, adopted in 2004 (OG RS 100/04), gave consideration to the Bologna process requirements. In this way the legal basis for the implementation of three cycle study programmes, student and staff mobility, quality assurance of the higher education and other Bologna process recommendations, was established. In the same year, the Criteria for the Allocation of ECTS Credits to Study Programmes were published in the Official Gazette of the Republic of Slovenia Nr. 124/2004. The Criteria came into force on 20th November 2004 and are used for study programmes that are prepared in accordance with the Act Amending the Higher Education Act (OG RS. 63/04).

The Higher Education Act was further modified and amended in 2006 and 2008 (Act Amending the Higher Education Act – OG RS 64/08) to fulfil the requirements of European legislation. These amendments mainly comprise the national framework of quality assurance and accreditation of teaching programmes.

During 2006 and 2008 the demands of Directive 2004/854/EC and 2005/36/EC of the European Parliament and of the Council on competences and recognition of professional qualifications and later amendments to this Directive were also adopted and implemented into national legislation.

❖ *new buildings or major items of equipment*

The management of the Veterinary Faculty strived for success by modernising not only the premises but also the relevant equipment for professional work as well as for education and research activities.

On becoming an independent member of the University of Ljubljana, The Veterinary Faculty paid a lot of attention to the improvement of the teaching facilities. In 1996 the adaptation of the Clinic for Surgery and Small Animals took place, followed by the renovation of the Clinic for Ruminants and the

Institute for the Health Care of Pigs. Inspired by the experience and the recommendations of our first EAEVE external evaluation, some major renovation of other clinics and non-clinic departments followed shortly after a visit by a team of experts:

- 1999 Institute for Anatomy, Histology and Embryology, dissection room, Institute for Physiology Pharmacology and Toxicology, Institute for Microbiology and Parasitology, Laboratory for Molecular Bacteriology ;
- 2000 Centre for Information Technology and Library (previous adaptation 1996), Institute for Hygiene and Pathology of Animal Nutrition, Institute for Health Care of Pigs, Institute for Health Care of Poultry;
- 2001 Institute for Pathology, Forensic and Administrative Veterinary Medicine, Laboratory for TSE, Institute for Food Hygiene and Bromathology;
- 2004 New Diagnostic building for NVI; Centre for Animal Genomics; Institute for Anatomy, Histology and Embryology, Laboratory for Molecular Biology and Molecular Genetics; Institute for Environmental and Animal Hygiene with Animal Behaviour, Centre for Animal genomics, Centre for sustainable re-cultivation, Vremščica, Lecture Hall;
- 2006 Clinic for Reproduction;
- 2007 Institute for Poultry, necropsy room, Clinic for Reproduction and Horses;
- 2008 Library;

However, the biggest investment in recent years was the erection of the new diagnostic building mainly used for the NVI. This building has been in use since 2004, and it contains the laboratories with sub -pressure for the diagnostics of the most dangerous bacterial (such as mycobacterium, anthrax) and viral diseases (aviar influence, classical swine fever, blue tongue). In the building there are also two new spatial facilities for students – student laboratory for chemistry and student laboratory for microbiology that enables student individual bench work or to work in small groups.

Major equipment, acquired in the last ten years:

1998 HPLC (Watters),  
1999 Protein Analyser, Lipid Analyser (Buchi)  
1999 Confocal Microscope ( Leica)  
2000 2 Ultrasound SSD-500 (Aloka)  
2002 HPLC (Watters)  
2002 Light Cyclor PCR (Roche)  
2003 ABI Prism 7000 PCR (Applied Biosystems),  
2003 TLC Scanner 3 (Camag)  
2004 HPLC MS Quatro Micro (Waters)  
2004 HPLC (Waters, )  
2004 Microscope (Nikon)  
2004 Micromanipulator (Naraschige), Microscope(Nikon )  
2005 Fexible Endoscope (Minitub)  
2006 Olfactometer Odormat (Aromatrix)

2007 Bactoscan FC 50H, Milkoscan FT 6200 (FOSS Electric, Denmark);  
2007 System for Image Analysis (Nikon),  
2007 GC-System 689 (Hewlet Packard)  
2007. Computer Assisted Sperm Analyser (HTM-IVOS Version 10) (Hamilton Thorne )  
2008 Mass Spectrometer ICPMS (Varian)  
2008 Autostainer (Dako)  
2009 Anaesthetic Machine (Mini-kom V1) (Komesaroff)  
2009 Capnograph (Surgivet)  
2009 FCR Capsula for Rtg (Fuji)

❖ *main changes to the study programme*

The current uniform five-year programme of veterinary medicine was introduced in 1985, fulfilling the requirements of the directives 78/1026/EEC and 78/ 1027/EEC. Following the Higher Education Act (OG RS 67/93) the graduates would be awarded the title 'Doctor of Veterinary Medicine' (DVM), replacing the former title 'Graduate veterinarian'.

A new, uniform six-year master-degree programme of Veterinary Medicine (first + second Bologna cycles) was adopted by the Senate of the Veterinary Faculty in May 2007, by the Senate of The University of Ljubljana in November 2007 and by the national accreditation body, the Council of Higher Education RS, in December 2007 and introduced for the first time in the study year 2008/2009.

The uniform six-year master programme was prepared respecting the Higher Education Act (OG RS 100/2004) directive 2005/36/EC and the Bologna process recommendations. Therefore during the preparation of the programme a lot of attention was paid to increasing the proportion of practical training and to the implementation of quality assurance mechanisms at all levels and for all processes connected with the education process.

❖ *important decisions made by the management of the Faculty, or by the authorities responsible for it*

- **Tempus project (JEP 1413-99)** with the Veterinary Faculty of Helsinki and the University of Veterinary Medicine, Vienna (1999-2002). The objective of the project was the comparison and harmonisation of veterinary educational programmes among different veterinary faculties, the estimation of student workload and redistribution of credits. Through this project, ECTS were for the first time allocated to the courses of our five-year curriculum.
- Participation in the Vet 2020 project (1999-2002), coordinated by the EAEVE, enabled us to analyse the present situation in Slovenia, and together with 20 participating countries forecast the trends for the development of the veterinary profession through 2020, not only in Europe, but also in Slovenia. The study collected a number of important data, regarding the prediction of the labour market demand, development of traditional professional activities, the identification of new professional areas, strengths and weaknesses of the veterinary education and profession, which turned out to be very useful on many occasions, such as discussions with different stakeholders, negotiation with the veterinary chamber, deliberations about the changes to the curriculum etc.
- We believe that the founding of the **National Veterinary Institute in 2001** as a part of the Veterinary Faculty and the accreditation of some testing procedures according to the standard EN ISO/IEC 17025, general requirements for the competence of testing and calibration laboratories in 2002, had a great impact on the quality of the teaching process. Some teachers that are in practice involved in the activities of the NVI are also teaching, e.g. the person in charge of the national reference laboratory of the NVI for rabies is teaching students about rabies. Students can hear about the disease, the causative agent, the situation in Slovenia, the diagnosis from the person that is really involved in directing the activities about this disease in Slovenia. This is the case in many subjects that are taught at the faculty. The implemented quality system according to the standard EN ISO/IEC 17025, which defines the activities of management and laboratories, gave the personnel of the Veterinary Faculty the sense of the standardization of activities and working procedures. The purpose of performing controls, looking for improvements, recognizing and analyzing nonconformities, assuring the resources and training of personnel that are important for testing activities – all these are also important for teaching activities. During practical work in the laboratories of the NVI, students need to follow the procedures written according to the requirements of the standard EN ISO/IEC 17025.
- After the first external evaluation by the EAEVE experts, the management as well as the employees became fully aware of the importance of quality assurance, not only in the testing/diagnostic laboratories but also in the teaching process. Therefore, the VF accepted the invitation to participate in TEEP 2002, co-ordinated by the ENQA, and was evaluated by experts appointed by ENQA, together with veterinary faculties from Budapest, Glasgow and Barcelona. Through this project, the Veterinary Faculty, University of Ljubljana actively participated in the development of suitable procedures for QA that would be fit for the purpose and in accordance with the international standards for quality assurance in higher education. Participation in these activities stimulated us to define/select the indicators to be followed by regular yearly self-evaluations at the university level as well as at the national level.
- We believe that our decision, made in 2004/2005, **to extend the study period from five to six years**, with the aim of increasing and intensifying practical training, particularly the clinical one, will turn out to be beneficial to our graduates, especially regarding their first day competences.

- The decision to **organise a formal co-operation with farms and private veterinary practices** all over the country (2006) by establishing a network of contract bound extramural teaching units. The Veterinary Faculty has 14 contractual arrangements with private veterinary clinics, three contracts with farmers, one with a slaughterhouse for large animals, one with a stud farm, one with a dairy cattle farm, one with an animal shelter and with the Ljubljana Zoo.

Veterinary surgeons working at these institutions can apply for the habilitation and acquire a corresponding title of assistant. They are supposed to participate in an annual evaluation of the performance of the teaching process and improve their competences by attending lifelong learning programmes (LLL programmes) offered by the faculty.

❖ *major problems encountered by the Faculty, whether resolved or not*

- Financing of the teaching process is not adequate. State support is not sufficient; therefore additional funds must be raised by operational work.
- Shortage of resources for the purchase of new, advanced diagnostic equipment suitable for the implementation of modern laboratory and clinical teaching.
- Efforts directed to operative activity are beneficial for gaining practical skills; however, it can interfere with pedagogic and research outputs.
- Activity to raise funds in operative work.
- Cooperation with industry (pharmaceutical, animal, food and feed production industry) is already established on some fields, however, the effort to increase it should be intensified.
- At the moment there is no specialisation programme. In cooperation with the Veterinary Chamber and the VARS, the implementation of specialisation programmes in postgraduate study is in progress.
- Access to the teaching units is limited because of distant locations and strict safety regulations in large commercial animal and food production units.

**1 OBJECTIVES****1.1 FACTUAL INFORMATION**

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

Since 2007, the list of overall objectives of the faculty has been a part of the application for the new six-year study programme. It is publicly available in the Information Package of the Veterinary Faculty, published on the faculty web page <http://www.vf.uni-lj.si>

- ❖ *Who determines the official list of objectives of the Faculty?*

The list was prepared by the working group, responsible for the preparation of the six-year curriculum on the basis of the requirements of the directives 78/1027/EEC, 78/1026/EEC, 2005/36/EC and the national legislation (Higher education Act OG RS 100/04, Veterinary Practice Act OG RS 33/01; Veterinary Compliance Criteria Act OG RS 93/05, Animal Feed Act OG RS 127/06, Animal Protection Act OG RS 43/07) The programme was adopted by the Veterinary Faculty Senate, the Senate of the University of Ljubljana and by the national accreditation body, the Council of Higher Education RS.

- ❖ *By what procedure is this list revised?*

The national legislation (Higher Education Act) anticipates re-accreditation of the study programmes at least every seven years. The re-accreditation can be given only after the satisfactory institutional and programme external evaluation reports are presented. Regular annual self-evaluation of each faculty is required as well.

In the Regulations, issued by the Council of Higher Education, the national accreditation body, minor and major changes of the programme are outlined as well as the procedure for their implementation. Minor changes (change of teacher, change of title of the course) can be adopted by the senate of the university, while major changes should be preceded with, in the same way as requested for the first accreditation of the curriculum.

- ❖ *Do you have a permanent system for assessing the achievement of the Faculty's general objectives? If so, please describe it.*

The Faculty has to report annually to the University of Ljubljana as well as to the Veterinary Administration of the RS. Assessing the Faculty's general objectives is obtained through the annual self-evaluation on the basis of several (56) indicators present in the institution's working plan and annual work reports. At the level of the University of Ljubljana, self evaluation reports of the faculties are analysed and discussed by the University Quality Assurance Committee. The final University Annual Quality report is prepared and proposed to the Senate for adoption. The University Annual Quality Report is published on the university web page <http://www.uni-lj.si> . It is also forwarded to the national accreditation body, the Council of Higher Education and its analysis is included in its annual quality report (<http://www.svs.gov.si> ).

Beside business and QA self-evaluation reports, management and testing proficiency is annually assessed by the Slovenian Accreditation according to ISO 17025 standards.

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

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## 1.2 COMMENTS

### ❖ *In your view, to what extent are the objectives achieved?*

We believe the Veterinary Faculty is meeting the requirements stated in the Directive 2005/36/EC, and is working hard to introduce improvements in all fields of the education process, particularly regarding clinical teaching. Our main attention is paid to assure favourable conditions for clinical training by organizing a network of private/outpatient units, offering veterinary students appropriate working/training conditions.

The extension of the study programme from five to six years enables the suitable extension of students practical work.

The NVI incorporated as an organisational unit of the faculty, offers opportunities to make good use of research equipment, knowledge, funds, samples as well as human resources.

### ❖ *What, in your view, are the main strengths and weaknesses of the Faculty?*

#### **Strengths**

- Relative small number of students;
- Teaching clinical subjects in small groups (2-5 students);
- Increasing proportion of self-dependant student work;
- Small institution, forced to link together teaching, research and professional activities;
- Good professional relations among staff and students;
- A lot of interest for enrolment as a opportunity for the selection of students that apply;
- Good cooperation with the Veterinary Chamber and the VARS;
- National and international scientific collaboration with well equipped faculties and research institutes in the close vicinity (Medical Faculty, Biotechnical Faculty, Faculty of Electro-engineering, Institute of Agriculture, Jožef Stefan Institute, National Institute of Chemistry, VetNEST network, collaborations in the framework of the SOCRATES/ERASMUS programme.
- Professional cooperation in the region (VetNEST)

#### **Weaknesses**

- Budgetary financing of the teaching of veterinary medicine is underestimated and does not allow for the implementation of modern teaching and training methods. Additional financial sources (contracts with industry, work for the market, LLL teaching programmes for veterinary surgeons and for other stakeholders-farmers, beekeepers ...) are necessary to be obtained to overcome this problem;
- Organisation of the Veterinary Faculty should be permanently optimised;
- A lot of effort is necessary to organize practical training;
- Difficult access to large animals in urbane surroundings;
- The critical mass of researchers and support staff working on the same topic is often not reached;

- Outdated research equipment is difficult to be replaced;
- Low salaries in comparison with private practice, industry or other European countries;
- Limited participation of students in research;
- Shortage of training abroad. A higher number of the employees should take part in longer training in different institutions abroad.

### 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.*

- Building of new premises for basic and clinical training outside the city centre;
- Enlargement of research activity in cooperation with industry;
- Acquisition of additional resources from European funds;
- Additional contracts with industry (pharmaceutical industry, clinical trials);
- More postgraduate LLL programmes should be put on the market;
- Permanent optimisation of the organisation of the VF should be in place;
- Financing is not adequate. New sources such as research projects, European sources for research and development and additional sources on the market (postgraduate programmes, LLL programmes), should be acquired;
- Planning of long term targeted professional training abroad after obtaining a PhD should be implemented.



## 2 ORGANISATION

### 2.1 FACTUAL INFORMATION

#### Details of the Faculty

Name of the Faculty: University of Ljubljana, Veterinary Faculty

Address: Gerbičeva 60, SI-1000 Ljubljana, Slovenia

Telephone: +386 1 477 9100

Fax: +386 1 283 2243

Website: <http://www.vf.uni-lj.si>

E-Mail:

Title and name of head of the Faculty: Dean Prof. Dr. Marjan Kosec

Address of the University: Kongresni trg 12, SI-1000 Ljubljana

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

University of Ljubljana, Kongresni trg 12, SI-1000 Ljubljana

❖ *Details of the competent authority overseeing the Faculty.*

Since 1990, the Veterinary Faculty is one of the 26 members of the University of Ljubljana. The relation between faculties and the University is defined in the Statute of the University of Ljubljana. All main activities, such as strategy, financing systems, enrolment procedures, human resources management, adoption of new programmes, international student and staff mobility and the national research programme are planned and executed at the level of the University. The University is allotted a lump sum for education by the Ministry of Higher Education Science and Technology and has to report to the Ministry annually. The money is distributed to faculties regarding the discipline, number of enrolled and graduated students in accordance with the University rules in place.

Research is financed by the Slovenian Research Agency. The agency finances research projects (basic, applied and oriented) and research programmes. Projects are of shorter duration, i.e. 2 – 3 years, programmes are financed for 4 – 6 years. For the present, the VF is running two research programmes and projects.

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

The rules, concerning the appointment of the elected officials of the Faculty are defined in Article 69 of the Statutes of the University, also available on the university web page ([http://www.uni-lj.si/en/about\\_university\\_of\\_ljubljana/statutes\\_of\\_ul.aspx](http://www.uni-lj.si/en/about_university_of_ljubljana/statutes_of_ul.aspx)).

The dean leads and represents the Faculty. The dean is the academic chair of the Faculty and conducts tasks on the basis of law, the ordinance on the establishment of the university, the statutes and the powers of the rector transferred by the latter to the dean. The dean is also the managing body of the Faculty when non budgetary activities are under consideration. The dean is responsible for the legality of the Faculty's activities. The dean is appointed by the rector for a term of two or four years upon the proposal by the Senate of the Faculty from among its teaching members that satisfy the conditions for election into the University Senate. The dean is eligible for re-election. The rector may remove the dean prior to the expiry of the latter's term of office on the grounds of a reasoned decision by the Senate of the Faculty, adopted with a two-thirds' majority of all the

members of the Faculty's Senate. The Faculty shall determine the term of office and the manner of voting of the Faculty's Senate for the election of a dean in its own regulations.

In implementing the national programme of higher education, the national programme of research and development and artistic work, the dean

- Coordinates the educational, scientific research and artistic work.
- Follows, assesses and ensures the quality of the Faculty, the study programmes, the scientific research, artistic and academic work as well as the preparation of the annual quality report (self-evaluation of the Faculty).
- Ensures, in accordance with his/her powers, the legality of the Faculty's activities.
- Decides on the actions in the area of the pecuniary operations of the Faculty necessary for a smooth and proper implementation of the adopted programmes from the national programme of higher education.
- Reports, at least once a year, on the work to the Senate of the Faculty and to the rector.
- Convenes and chairs the sessions of the Faculty's Senate.
- Decides on matters in the area of employment relations of the Faculty's employees, except for the matters which fall with explicit competence of the rector (i.e., the conclusion and termination of an employment relation, transfers from one Faculty to another and the assent to supplementary work)
- Proposes to the Faculty's Senate the candidate for the vice dean
- Decides, at first instance, on the Faculty's student applications in study matters, unless otherwise stipulated in the statutes
- Conducts other duties in accordance with these statutes and the general acts of the University.

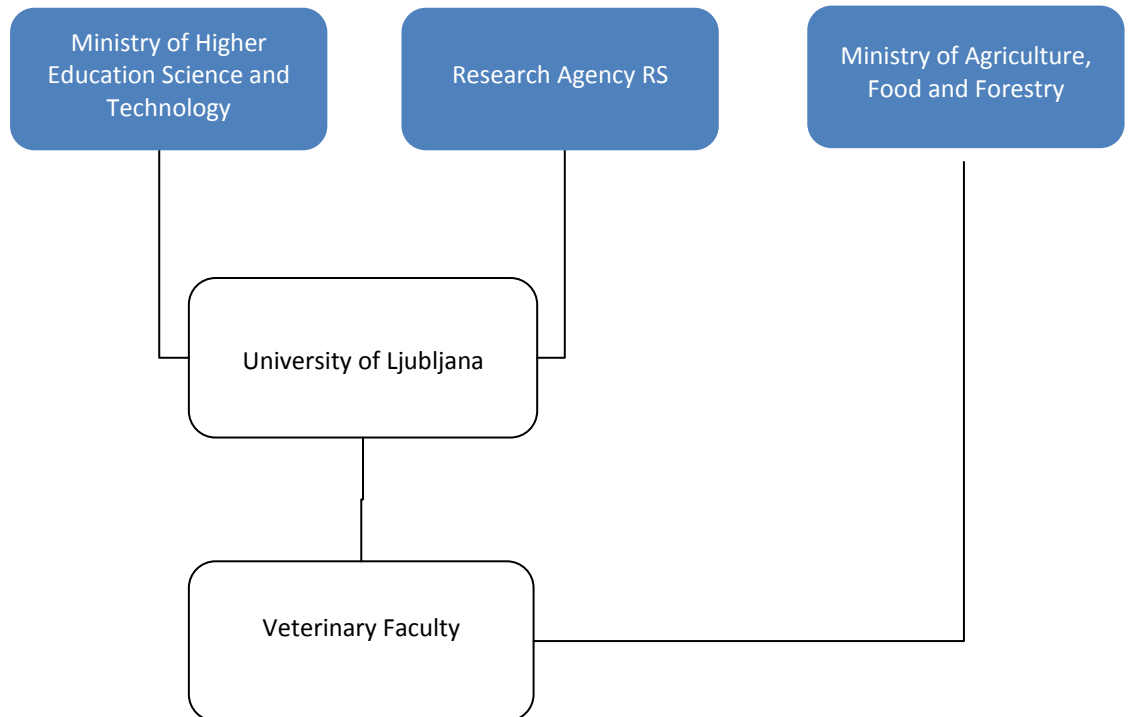
The dean decides on the employment relations of the Faculty's employees performing non budgetary activities.

The Member faculty has one or more vice deans. The number, the term of office, the manner of appointment and area of responsibility of the vice deans shall be set by the Member faculty by regulation.

The dean determines with a written authorisation that the vice dean to replace him/her for the time of his/her absence.

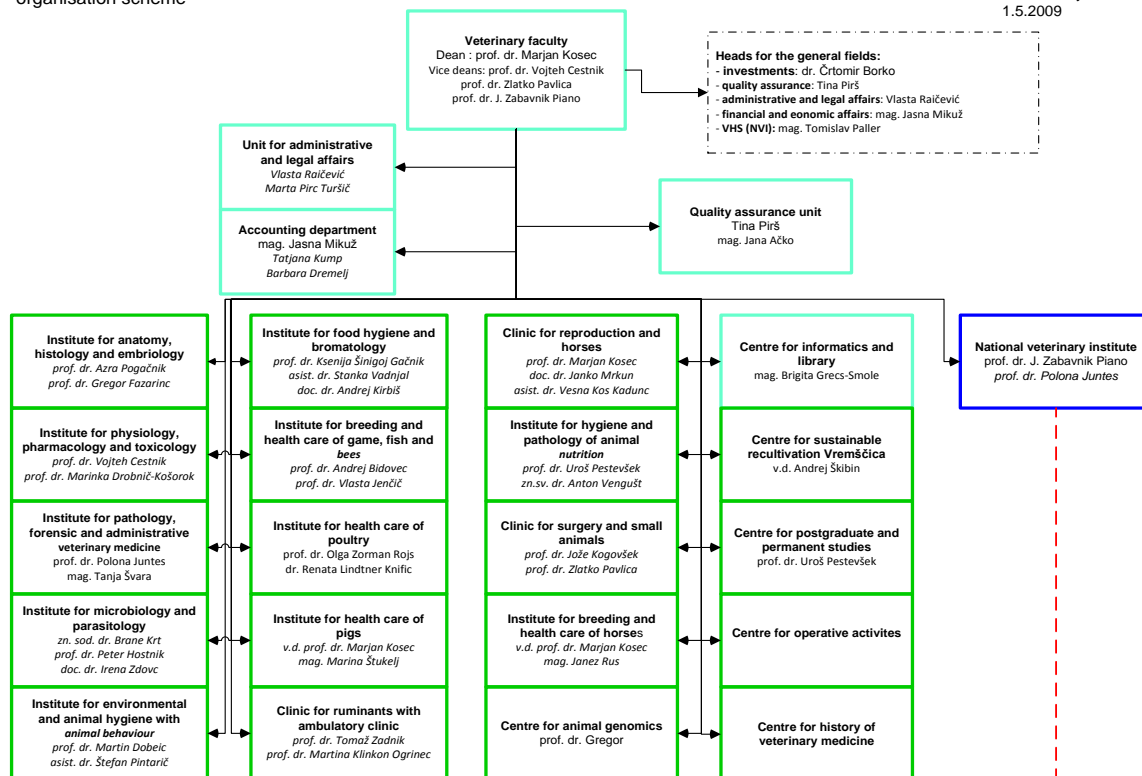
The procedure for the appointment of the dean shall commence six months before the expiry of his/her term of office. If the Senate does not propose to the rector a candidate by the expiry of the term of office, the dean is appointed by the rector from among the teaching members of the Member faculty who satisfy the conditions for election into the University Senate.

- ❖ Provide a diagram of the administrative structures showing the Faculty in relation to the university and ministerial structure of which it is part.

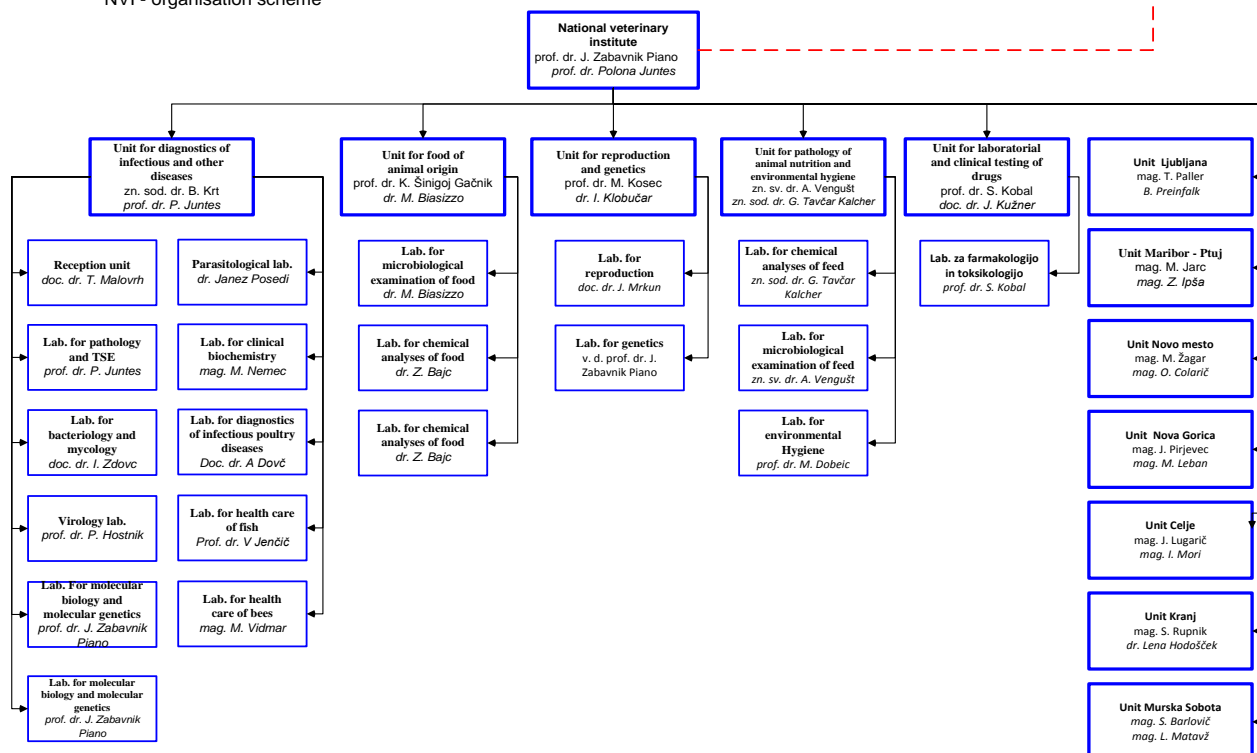


Provide a diagram of the internal administrative structure of the Faculty itself (councils, committees, departments, etc.)

VF - organisation scheme

Attachment C to Quality Manual  
1.5.2009

NVI - organisation scheme



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



### Senate of the Faculty

The Senate of the Faculty is the highest academic body of the Faculty. The Senate consists of the teaching members of the Faculty who are full-time employees and of the students.

The Senate shall have at least nine members. The number of the Senate's members shall be determined by the Faculty in its regulations in such a way that all scientific disciplines and academic areas of the Faculty are equally represented in the Senate.

The formation of the Senate and its term of office shall be set by the Faculty in its regulations, ensuring that at least one fifth of the members of the Senate come from among the students.

The members of the Senate from among the students are elected by the Faculty's Student Council.

The manner of electing the members of the Senate from among the students is determined by the regulation adopted by the University Student Council. The sessions of the Senate are convened and chaired by the Dean.

The Faculty's Senate deliberates and decides on academic matters in the areas of research and innovation, the artistic and the pedagogical work of the Faculty, and proposes to the University Senate the adoption of appropriate decisions.

The Senate above all:

- Adopts the regulations of the Member.
- Adopts the draft study programmes leading to a university degree, graduate qualifications and for advancement.
- Adopts the draft study programmes for postgraduate studies.
- Proposes to the Rector the appointment of a Dean.
- Appoints, in the proceedings of election into the title of a university teacher, scientific researcher and university associate, the rapporteurs on the qualifications of the candidate.
- Elects the university teachers, scientific researchers and university associates to the appropriate title, except for the full professor and senior researcher.

- Adopts the annual work programme of the Faculty.
- Appoints the commission to evaluate the suitability of the topic of a doctoral dissertation and the qualifications of the candidate for the achievement of a doctorate of science and proposes to the University Senate the confirmation of the topic of the doctoral dissertation.
- Appoints the reporters for the evaluation and the commission for the defence of a submitted doctoral dissertation.
- Determines the manner of accepting and evaluating the masters' theses.
- Appoints the mentor or co-mentor to a postgraduate student.
- Appoints the commission for and decides on the recognition of education conducted abroad for the purposes of continuing the education.
- Appoints the commissions and working groups of the Faculty's Senate.
- Conclusively decides, at the second instance, on student complaints in study matters when the complaints are filed against a decision of a Faculty's body at the first instance.
- Forms proposals for the University commendations.
- Deliberates and decides on the opinions of the Faculty's Student Council within its competence.
- Ensures the monitoring of the quality of educational, scientific research and artistic work and adopts the self-evaluative report.
- Conducts other duties as stipulated by law, the Statutes or other general acts.
- The Faculty determines the manner of conducting the work of the Senate in a regulation.

### **Working Groups of the Senate of the Faculty**

The Faculty's Senate has a

- committee for study and students' affairs;
- committee for postgraduate education;
- committee for research activities;
- committee for quality assurance;
- committee for human resources management;
- collegiate body of veterinary clinics;

### **Academic Assembly**

The Academic Assembly of the Faculty consists of all teachers, researchers and associates.

Student representatives also participate in the work of the Academic Assembly and their number cannot be lower than one fifth of all the members of the Academic Assembly.

The student representatives are elected by the Student Council. The manner of electing the student representatives that participate in the Academic Assembly is determined by a special regulation adopted by the University Student Council.

The Academic Assembly reviews the reports of the dean on the work of the Faculty and gives proposals and initiatives to the Senate. The students participate in the deliberation and the adoption of decisions.

The Academic Assembly elects the members of the Faculty's Senate and proposes to the Senate the candidates for the dean, with the voting right reserved to the members of the Academic Assembly who are full-time employed teachers, research employees and clinical subjects employees.

The Academic Assembly shall be convened at least once a year.

#### **Administrative Board of the Faculty**

The Member faculty may have an Administrative Board if it determines so by a regulation.

The Administrative Board of the Faculty decides on managing the resources obtained by the non budget activities and ensures smooth pecuniary operations of the Faculty when it conducts legal transactions in its own name and on its own behalf.

The Administrative Board of the University may transfer to the Administrative Board of the Faculty certain powers from its competence.

The number and the elections of the members of the Administrative Board, its management and the manner of deliberation are determined by the Faculty in regulations.

#### **Student Council of the Faculty**

The Student Council of the Member faculty is a body of students.

The Student Council has at least nine members, elected from among themselves by the students of the Faculty.

The manner of electing the members of the Faculty's Student Council is determined by a special regulation adopted by the University Student Council.

The members of the Student Council shall elect the president and the vice president as well as their deputies at the first session.

The Student Council conducts its work at sessions convened by the president of the Council.

The quorum of the Student Council is constituted if the majority of its members are present.

A decision is adopted if supported by a majority of the members present.

Minutes of the sessions are kept and signed by the president.

The Student Council of the Faculty deliberates on all the matters concerning the rights and obligations of students.

The Student Council gives its opinion on the pedagogical qualifications in the proceedings of election into the titles of teachers and employees.

The Student Council of the Faculty form opinions of the Faculty's students for the University Student Council and elects the members of the working groups and bodies of the Faculty from among the students whenever so stipulated by the Faculty's regulations.

The Student Council of the Faculty may form an opinion on the candidates for the position of dean.

The term of the members of the Student Council is one year.

A member of the Student Council is eligible for re-election.

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

The Veterinary Faculty collaborates with the Veterinary Chamber of Slovenia in the field of common interest especially for developing a good undergraduate and postgraduate study system. By the common action of the Veterinary Faculty and Veterinary Chamber, the teaching units have been chosen where the students can perform their extramural practice. The up-dated six-year study programme was also prepared in accordance with the Veterinary Chamber.

Every year the Veterinary Faculty in accordance with Veterinary Chamber prepares the programme for permanent/life-long learning.

Finally the Veterinary faculty in conjunction with the Veterinary Chamber is preparing programmes for postgraduate specialisation in the fields of small animal medicine, buiatrics, exotic pet animal medicine, veterinary public health and poultry health and production.

All veterinarians employed at the Veterinary Faculty are members of the Veterinary Chamber, united in the section for education, research and diagnostics (SIRD).

## 2.2 COMMENTS

- ❖ *Add any comments on the organisation and functioning of the Faculty that you feel useful for completing the description.*
- The Veterinary Chamber and Veterinary Faculty collaborate well although the connections on the field of postgraduate study should be intensified. Especially on the field of the annual education programme for the practitioners, experts of the faculty are not invited often enough to present their lectures.
- A new statute of Veterinary Chamber is in preparation, providing organisation structure different from the present. The Veterinary Chamber will be organised at a regional level, but the Veterinary Faculty will be a separate unit and the dean will automatically be a member of the executive committee.

## 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.*
- Better access to farm animals by the further improvement of the collaboration with farms and practitioners;
- Financing is not adequate. New sources such as research projects, European sources for research and development and additional sources on the market (postgraduate programmes, LLL programmes), should be acquired.



### 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.*

The Veterinary Faculty University of Ljubljana is operating according to the budget and yearly plan for all the activities; however, the resources for teaching in particular are not sufficient for the facilitation of high end education of veterinary medicine.

*In addition please specify:*

- ❖ *How the allocation of funding (including public funding) to the Faculty is determined, and by what body.*

The Veterinary Faculty is funded from state budgetary sources for the performance of educational activities (Ministry of Higher Education, Science and Technology), research activities (Slovenian Research Agency) and activities of the selection services (Ministry of Agriculture, Forestry and Food). For the activities performed by the NVI for the state veterinary service it is funded by the Veterinary Administration RS (VARs). For concessional activities income comes from the NVI and the VF as a concessional market. Some activities are performed by the VF for third parties – these are market funds.

The legal basis of financing for the national educational programme is determined by the Ordinance on the state financing of high-education and other institutions and members of universities (O.G. RS, No. [134/2003](#); [72/2004](#), [4/2006](#), [132/2006](#), [99/2008](#), [30/2009](#)).

Funding from the governmental budget for higher education is determined as a common fund for the University in Ljubljana (integral financing). Yearly funds from the governmental budget for higher education are defined in the financial plan of the Ministry of Higher Education, Science and Technology that is in charge of higher education. Yearly capital goods for the University are determined once a year within thirty days after the realisation of the assignment of the ministry for the higher education for the previous year, is known. The University in Ljubljana allocates the yearly funds for the educational activities to its members according to the criteria, accepted by the Administrative Board of the UL (Criteria of UL for the allocation of the yearly funds for the educational activities). A proportion of the funds is allocated for common activities of the university and a proportion is distributed for educational activities. Investment funds at the UL are determined according to the long-term plan of investments at the UL, the yearly investment plan of UL and the accepted budget. General priorities of investments covered by the governmental budget for higher education are determined by the Administrative Board of the UL. The dean of the faculty is responsible for performing the valid study programmes and for social security within the framework of the allocated funds. If these budgetary funds are not sufficient to perform the valid programmes, then the dean is responsible to assure additional funding from other sources of funding. Spending of the VF financial funds is planned according to the yearly VF work plan. Chair of the Administrative Board of the VF is in charge of the coordination of the preparation of the VF plan. Persons in charge of the specific fields of activities prepare the plan of activities. The preparation of the educational plan is the responsibility of vice dean for the education while vice dean for research is responsible for planning the research. The head of the Unit for accountancy is in charge of the financial plan. The yearly plan of the VF is approved by the VF Administrative Board and the VF Senate.

- ❖ *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.*

Yearly funds (YF) for the educational activities of the high education institution are made up from the basic yearly funds (BYF) and the normative yearly funds (NYF).  $YF = BYF + NYF$ . The NYF for the high education institution are determined with consideration of the yearly starting value (YSV), sum of the number of students (S) and with the weight (W) multiplied number of graduates (G) and the factor of the study group (f) in which the study programme is included.

$NYF = BYF * \text{sum} ((S + G * W) * f)$ . For the determination of the normative funds for the education programmes the UL forwards to the ministry the data on the enrolled students and data on the number of graduates for the previous year for each member – each faculty.

- ❖ *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.*

Members of the UL are distributed to 6 classes, according to the financial demands of the study programme. The VF is classified in the highest class.

Each year within the Faculty, the study schedule is approved by the VF Senate, the workload for staff involved in education is announced for the calendar year and the financial funds are proportionally divided for each subject according to the workload. The Head of each institute is in charge for the regular use of the allocated funds. In case of a shortage of funds from the governmental budget for education, the head of the institute can propose financing from the operative activities of the institute. Spending is approved by the dean.

- ❖ *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.*

For equipment the VF can compete for finances:

- At the UL – Administrative Board of the UL each year prepares the list of priorities for investments from the budget for educational purposes (from the Ministry of Higher Education, Science and Technology);
- Each year at the Agency for Research and Development, the public tender for co-financing the major items of equipment for research is announced;
- In the budget of the Veterinary Administration of Republic Slovenia there is a special account for the equipment and maintenance of the National Veterinary Institute at the Veterinary Faculty;
- The policy of the VF is that a portion of finances obtained from the operative activities is spent i investing in equipment;
- Each year by December the plan of activities for the next year is prepared (VF Plan). This plan includes the description of planned activities, personnel, training, maintenance and investments in equipment and buildings. The list of priorities for the activities and

investments are obtained from the heads of institutes, then the list of priorities is prepared and decided by the administrative board of the VF and approved by the VF Senate.

### 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):*

The Veterinary Faculty as a member of the University in Ljubljana has to give to the University three percent from the income obtained from all sources. The VF is a non-profit making organisation; the profit earned from operative activities is taxed by twenty percent.

- ❖ *Please indicate whether students pay tuition/registration fees,*
- ❖ *How much these are,*
- ❖ *How they are decided,*
- ❖ *How the funds are distributed.*

Study at the VF is free for Slovenian and other EU citizens. Citizens from third world countries have to pay USD 2,000 per year in accordance with the University price list.

In accordance with the same price list, students at the VF University of Ljubljana have to pay a small fee for enrolment (€26.14 for the 1st year, € 18.40 for each of the following years) and students insurance (no fee for the 1st year and € 40.88 for the 2nd, 3rd, 4th and 5th year). Students also pay transport expenses for field education and excursions. Expenses for transportation to the teaching premises are in the range from EUR 8 in the first year, to a maximum EUR 106 in the fourth year.

For the postgraduate programme Biomedicine (2 year master programme) and postgraduate programme Environment Protection (2 year master's programme) tuition fee is EUR 1,961.28 per year.

For the three year doctor's programme Biomedicine, the tuition fee is EUR 2,503.76 per year.

All prices are adopted by the university Administrative Board and are publically available on the university web page <http://www.uni-lj.si>.

**3.1.3 OVERVIEW INCOME (REVENUE) AND EXPENDITURE**

Table 3.1: Income/Revenue 2008

Year	Education	Research	NVI government	NVI market	Other markets	TOTAL INCOME
2008	3,243,283	1,577,273	7,836,331	1,924,893	2,938,035	17,519,815
2007	3,100,035	1,520,154	7,003,290	1,974,466	2,868,446	16,466,391
2006	3,158,383	1,415,932	6,859.155	1,982,257	2,752,959	16,168,686

Table 3.2: Expenditure

Year	Education	Research	NVI government	NVI market	Other markets	TOTAL INCOME
2008	3,243,283	1,577,273	7,836,331	1,905,651	2,917,925	17,480,463
2007	3,100,035	1,520,154	7,003,290	1,974,306	2,868,327	16,466,112
2006	3,158,383	1,415,932	6,859.155	1,926,218	2,742,597	16,102,287

### 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.*

Equipment that is used for research, clinical work and diagnostics develops rapidly, this equipment is also expensive, purchases for educational purposes alone, is difficult. Each year when the priorities for investments are made at the level of the UL we inform the administrative board of the UL about the needs for funding from the budget for education. The funding of the VF from the Ministry of Higher Education, Science and Technology is not sufficient, therefore extra income that the VF obtains from the activities of the state veterinary service, clinical work (small animal clinic and equine clinic), research grants and other operative activities is also used for the equipment and training of the personnel who are involved in education. As can be seen from the data on funding the VF – the activities are mainly funded by the non-educational budget. Autonomy in financial matters for funding obtained from operative activities is complete, for budgetary funding the approval of the financier must be obtained. Increased funding would be used for state-of-the-art equipment, and the additional training of personnel.

Organisation of the faculty, which according to the Law on the Veterinary Service enables the Veterinary Institute to be a department of the Veterinary Faculty has a great benefit not only on education, but also to financial income. Almost 60% of the total income comes through the National Veterinary Institute.

The organisation and activities of the VF – performing teaching, research and state veterinary service - is the optimal solution for the suitable use of equipment, knowledge and personnel for different levels of activities in the veterinary field.

### 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.*

The study of Veterinary medicine is one of the most expensive studies and needs a lot of financial support from the government. Financial distribution at the level of the University of Ljubljana gives priority to those faculties which have a large number of students and graduates. At this very moment

a lot of effort is being given by the dean of the faculty to ensure a better status for the Veterinary Faculty.

Beside the finances given to the faculty for education and research, about 15% of the income is from operational activities in the free market (clinical work, milk, feed and fodder analysis, other analysis).

## 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.*

Not applicable

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

Not applicable

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

The studies at the University of Ljubljana are conducted within the framework of the National programme of higher education and in accordance with the study programmes adopted by the Senate of the Faculty with the assent of the Senate of the University of Ljubljana. The programme should acquire the accreditation by the national accreditation body, The Council of Higher Education.

The previous five-year curriculum was accredited in 1983 and was until 2008 subjected to several improvements. In 1998, it was approved by the EAEVE expert team during the first external evaluation, during 1999-2002 it was revised in the TEMPUS project (UM\_JEP-1413-1999): Comparison of Educational Programmes and Distribution of Credit Points among Ljubljana, Vienna and Helsinki Veterinary Schools. At the same time the methodology for credit point's allocation was established and the ECTS were allocated. In 2001-2002, it was, in addition, as a faculty, externally evaluated together with other faculties of veterinary medicine, Universidad Autonoma de Barcelona, Szent Istvan University of Budapest, University of Glasgow and University of Ljubljana, as a part of the Transnational European Evaluation Project (TEEP 2002), coordinated by the ENQA.

The new six-year 'Bologna' programme had passed the same procedure, and acquired national accreditation in 2007. It was for the first time introduced in the study year 2008/2009. At the moment both programmes are running simultaneously.

Therefore in the tables shown below, both curriculums are shown. A five-year curriculum in tables 4.1A, 4.2A and 4.3A, 4.4A and a new six year curriculum in tables 4.1B, 4.2B and 4.3B respectively.

- ❖ *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 decision about the allocation of hours between various subjects was taken on the basis of the requirements of the Directive 2005/36/EC, regarding the representation of the obligatory contents and with respect to our own experience as well as the results of the comparison of our programme with some programmes outlined by the EAEVE approved veterinary faculties in Europe (TEMPUS project UM\_JEP-1413-1999). We also consider of great importance the student study survey, developed as a part of the above mentioned project, performed several times, by which the student workload was estimated.

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

Not applicable

**4.1.1 POWER OF THE SUBJECT**

'core' subjects taken by every student;

**FIVE-YEAR CURRICULUM (OLD PROGRAMME)**

	Core Subjects	Contact hours	ECTS
	Biophysics	60	2.5
	Cell biology	48	4
	Anatomy of domestic animals	315	19
	Histology with embryology	150	9.5
	Physiological chemistry	225	13
	Genetics and biostatistics	90	3.5
	Herbage, poisonous and medical plants, botany	30	2
	Physiology of domestic animals	210	12.5
	Parasitology	90	8
	Microbiology and immunology	195	12
	Animal nutrition	90	6.5
	Animal husbandry	90	4
	Pathological physiology	115	9.5
	Pathological anatomy with pathological histology	210	12.5
	Pharmacology with toxicology	135	9.5
	Epizootiology	30	2
	Hygiene and pathology of animal nutrition	95	6
	Surgery and ophthalmology	120	7.5
	Radiology and physical therapy	45	5
	Radiation hygiene	25	2
	Clinical diagnostics	90	6.5
	Reproduction of domestic animals with obstetrics	205	14
	Diseases and health care of ruminants	195	14.5
	Diseases and health care of swine	145	9
	Diseases and health care of poultry	120	8
	Animal and environmental hygiene	135	6
	Introduction into food hygiene	40	4
	Veterinary sanitary control of animals for slaughter and meat	120	6
	Diseases and health care of equines	130	10
	Diseases and health care of carnivores	130	13.5



	Diseases and the hygiene of breeding and health care of fish and honey bees	60	6
	Hygiene of and control of milk, milk products and food of vegetable origin	75	4
	Hygiene of food production plants	30	2
	Diseases and health care of small animals	25	5.5
	Hygiene and control of meat, fish and products	80	5.5
	Diseases , health care and breeding of game	45	5
	Economics	30	4
	Forensic and state veterinary medicine	135	11.5
	Ambulatory clinical practice	120	10
	English language	45	2
	German language	45	2
	Terminology in veterinary science	30	1
	Sport	60	-

❖ *'electives' which each student must select (120 hours) from a list of permissible subjects;*

**FIVE-YEAR CURRICULUM (OLD PROGRAMME)**

	Elective Subjects	hours	ECTS
1.	Veterinary history with veterinary ethics	30	2
2.	Anatomy of laboratory and exotic animals	45	3
3.	Microbiological practice	45	3
4.	Animal ethology	30	2
5.	Kinology	15	1
6.	Clinical-laboratory practicum	30	2
7.	Surgical practice	45	3
8.	Veterinary dentistry	30	2
9.	Clinical oncology in veterinary medicine	45	3
10.	Anaesthesiology, reanimation and intensive therapy	45	3
11.	Practice of reproduction	45	3
12.	Pathomorphological practice	30	2
13.	Rearing conditions and health care of rabbits	30	2
14.	Herd health management	15	1
15.	Skin, heart and venous diseases of dogs and cats	30	2
16.	Informatics and communications	45	3

❖ *obligatory extramural work;*

**FIVE-YEAR CURRICULUM (OLD PROGRAMME)**

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	Obligatory extramural work	hours	ECTS
60.	One month extramural practice	168	

❖ 'core' subjects taken by every student;

**SIX-YEAR CURRICULUM (NEW PROGRAMME)**

	Core Subjects	Contact hours	ECTS
1.	Biophysics	60	4
2.	Biochemistry	225	14
3.	Cell Biology	48	4
4.	Anatomy of Domestic Animals	315	17
5.	Histology and embryology 1	60	5
6.	Histology and embryology 2	90	7
7.	Fodder, poisonous and medicinal plants	40	3
8.	Genetics	60	4
9.	Biostatistics	60	3
10.	Veterinary Physiology	210	13
11.	Parasitology	90	8
12.	Microbiology and Immunology	195	14
13.	Physiology of Animal Nutrition	100	8
14.	Animal Science	100	7
15.	Pathology	210	12
16.	Pathophysiology	115	8
17.	Pharmacology and Toxicology	140	9
18.	Basics of Veterinary Clinical diagnostics	90	6
19.	Surgery and Ophthalmology	120	7
20.	Epizootiology	30	3
21.	Hygiene and Pathology of Animal Nutrition	120	8
22.	Principals of Radiology and Physical Therapy	45	4
23.	Reproduction of Domestic Animals with Obstetrics	215	14
24.	Diseases and Health Care of Equines	140	10
25.	Diseases and Health Care of Pigs	155	10
26.	Diseases and Health Care of Poultry	130	10
27.	Animal and Environmental Hygiene	130	7
28.	Introduction to Food Hygiene	40	4
29.	Veterinary Sanitary Control of Animals for Slaughter and Meat	120	7
30.	Diseases and Health Care of Ruminants	185	11
31.	Diseases and Health Care of Dogs and Cats	150	12
32.	Hygiene Control of Meat, Fish and Products	90	5
33.	Hygiene and Control of Milk, Milk Products and Food of Vegetable Origin	80	5
34.	Hygiene of Food Production Plants	40	3
35.	Diseases and Health Care of Small Animals	45	4
36.	Diseases and Health Care of Fish and Bees	70	6
37.	Diseases, Breeding and Health Care of Game	55	4
38.	Veterinary Economics	30	3
39.	Administrative and Forensic Veterinary Medicine	135	12
40.	Clinical Practice 1	90	3
41.	Clinical Practice 2	90	3

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

#### SIX-YEAR CURRICULUM (NEW PROGRAMME)

	Elective Subjects	Contact hours	ECTS
42.	English	45	3
43.	Terminology of Veterinary Medicine	30	3
44.	Sports	45	3
45.	History of Veterinary Medicine	30	3
46.	Veterinary Informatics	45	3
47.	Communication Skills in Veterinary Medicine	45	3
48.	Anatomy of Laboratory and Exotic Animals	45	3
49.	Microbiology Practical Course	45	3
50.	Ethology in Animal Health Care	30	3
51.	Cynology for Veterinarians	30	3
52.	Clinical Laboratory Practical Course	30	3
53.	Ecotoxicology in Veterinary Medicine	45	3
54.	Rearing Conditions and Health Care of Rabbits	30	3
55.	Rearing Conditions and Health Care of Reptiles and Other Exotic Animals	45	3
56.	Surgery Practical Course	45	3
57.	Veterinary Dentistry Practical Course	30	3
58.	Clinical Oncology in Veterinary Medicine	45	3
59.	Anaesthesia, Reanimation and Intensive Therapy	45	3
60.	Reproduction Practical Course	45	3
61.	Pathomorphology Practical Course	30	3
62.	Herd Health Management Course	30	3
63.	Dermatology of Dogs and Cats	30	3
64.	Cardiology of Dogs and Cats	30	3
65.	Dietetics of Dogs and Cats	30	3
66.	Equine Sports Medicine	30	3
67.	Breeding and Health Care of Game and Wild Animals in Enclosures	45	3
68.	Veterinary Proficiency	30	3

❖ *obligatory extramural work*

#### SIX-YEAR CURRICULUM (NEW PROGRAMME)

	Obligatory extramural work	hours	ECTS
69.	Professional Practice	360	12

#### 4.1.1.1 TYPES OF TRAINING

- ❖ *There cannot be an 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.*

##### 4.1.1.1.1 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 but 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 audio-visual material, exercises, discussions and, if possible, case work.
- ❖ **Self directed learning** are sessions of individual students making use of defined teaching material provided by the Faculty (e.g. e-learning)

##### 4.1.1.1.2 SUPERVISED PRACTICAL TRAINING

- ❖ **Laboratory and desk based work.** Includes teaching sessions where students themselves actively perform laboratory experiments, 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 propaedeutical hands-on work on organ systems on cadavers to practice clinical techniques are also classified as clinical work.

#### 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 4.1A: General table of curriculum hours taken by all students**

(five-year curriculum)

Year	Hours of training							
	Theoretical training			Supervised practical training			Other	Total
	Lectures	Seminars	Self-directed learning	Laboratory and desk based work	Non-clinical animal work	Clinical work		
	(A)	(B)	(C)	(D)	(E)	(F)		
First	513	0	887	180	210	0	10	1800
Second	585	0	865	300	30	0	20	1800
Third	515	15	875	130	60	180	25	1800
Fourth	480	0	855	0	75	345	45	1800
Fifth <sup>1</sup>	420	45	620	130	0	185 240 <sup>1</sup>	40+ 120 <sup>2</sup>	1800
Total	2513	60	4102	740	375	950	260	9000

<sup>1</sup>Clinical practice<sup>2</sup>In the fifth year, 120h of electives should be inscribed in the study paper**Table 4.2A: Curriculum hours in UL-VF-listed subjects taken by each student**

(five-year curriculum)

\* discrepancies with EU-listed subjects are shown at the end of the tables

Comment	Subject	Theoretical training			Supervised practical training			Other	Total
		Lectures	Seminars	Self directed learning	Laboratory and desk based work	Non-clinical animal work	Clinical training		
		A	B	C	D	E	F	G	
1.	Basic Subjects								
<sup>1</sup>	a) Biophysics	30		33	30				93
<sup>2</sup>	b) Chemistry								
<sup>2</sup>	c) Cell biology	33		61	15				109
<sup>2</sup>	d) Herbage, harmful and medical plants-botany-	15		50	15			10	90
	e) Biostatistics								
	<b>1- Total number of hours</b>	<b>78</b>		<b>144</b>	<b>60</b>			<b>10</b>	<b>292</b>
2.	Basic Sciences								
	a) Anatomy of domestic animals	105		200		210			515
*	Histology with embryology	75		108	75				258
	b) Physiology	120		150	90				360
<sup>2</sup>	c) Physiological chemistry	150		150	75				375
	d) Genetics (including molecular genetics)	75		36	15				136
<sup>3</sup>	e) Pharmacology and pharmacy	75		120	60			5	260
<sup>3</sup>	f) Toxicology (including environmental pollution)								
<sup>4</sup>	g) Microbiology (including virology, bacteriology and mycology)	120		130	75				325

Comment	Subject	Theoretical training			Supervised practical training			Other	Total
		Lectures	Seminars	Self directed learning	Laboratory and desk based work	Non-clinical animal work	Clinical training		
		A	B	C	D	E	F	G	
4	h) Immunology								
	i) Epizootiology (Epidemiology)	30		20					50
5	j) Professional ethics								
	<b>2- Total number of hours</b>	<b>750</b>		<b>914</b>	<b>390</b>	<b>210</b>		<b>5</b>	<b>2269</b>
3.	Clinical Sciences								
6	a) Obstetrics								
	b) Pathology (including pathological anatomy)	120		140		90			360
	Pathophysiology	100		140	15				255
	Parasitology	60		130	30				220
*	d) Surgery and ophthalmology)	60		90			60		210
	clinical lectures on various domestic animals Diseases and health care of:								
	equines	70		158			60	10	298
	pigs	85		104			60	10	259
	poultry	75		96			45	10	226
	ruminants	105		195			90	10	400
	dogs and cats	60		222			70		352
	small animals	15		120			10		145
	fish and bees	30		120			30	10	190
	wild animals	30		108			15	10	163
	f) Field veterinary medicine (ambulatory clinics)						120		120
7	g) Preventive medicine								
8	h) Radiology and physical therapy	15		102			30		147
6	i) Reproduction and reproductive disorders	115		195			90	10	410
5	j) Veterinary state medicine and public health								
	k) Veterinary legislation and forensic medicine	90	45	186					321
7	l) Therapeutics								
9	m) Propaedeutics (including laboratory diagnostic methods)	60		80			30		170
	<b>3- Total number of hours</b>	<b>1,090</b>	<b>45</b>	<b>2,186</b>	<b>45</b>	<b>90</b>	<b>710</b>	<b>70</b>	<b>4,236</b>
4.	Animal Production								
	a) Animal production								
	b) Animal nutrition	60		100	30				190
	Hygiene and pathology of animal nutrition	50		92	45				187
	Radiation hygiene	15		55	10				80
	c) Agronomy								
	d) Veterinary economics	30		92					122
	e) Animal science (husbandry)	60		50	30			10	150
*	f) Animal and environmental hygiene	75	15	45	45			10	190

Comment	Subject	Theoretical training			Supervised practical training			Other	Total
		Lectures	Seminars	Self directed learning	Laboratory and desk based work	Non-clinical animal work	Clinical training		
		A	B	C	D	E	F	G	
	Hygiene of food producing plants	30		38				10	78
<sup>10</sup>	g) Animal ethology and protection								
	4- Total number of hours	320	15	452	160			30	977
5.	Food Hygiene/Public Health								
<sup>11</sup>	a) Inspection, and control of animal foodstuffs or foodstuffs of animal origin and the respective feedstuff production unit								
	Hygiene and control of meat, fish and products	35		85	45			10	175
	Hygiene and control of milk, milk products and food of vegetable origin	35		58	40			5	128
	Veterinary sanitary control of animals for slaughter and meat	45		75		75			195
	b) Food hygiene and technology								
	Introduction to food hygiene	40		63					103
	c) Food science including legislation								
<sup>11</sup>	d) Practical work (including practical work in places where slaughtering and processing of feedstuffs takes place)								
	5- Total number of hours	155		281	85	75		15	611
6.	Professional Knowledge								
	a) Practice management								
<sup>5</sup>	b) Veterinary certification and report writing								
<sup>12</sup>	c) Career planning and opportunities								
	6- Total number of hours								
	TOTAL								8385
	Total electives								240
	Other (English, Latin, German)	120		125				130	375
	GRAND TOTAL	2513	60	4102	740	375	950	260	9000

<sup>1</sup>Physics is taught as Biophysics.<sup>2</sup>Animal biology and Chemistry are supposed to be studied prior to entry to veterinary education. Some organic chemistry is included in Physiological chemistry. Cellular biology is taught as a separate course. Plant biology is taught as Herbage, harmful and medicinal plants-Botany.<sup>3</sup>Both courses are joined in Pharmacology and toxicology.<sup>4</sup>Both courses are joined in one course, Microbiology and immunology.<sup>5</sup>Professional ethics and Veterinary certification and report writing is included in Administrative and forensic veterinary medicine.<sup>6</sup>Included in Reproduction of domestic animals with obstetrics.



<sup>7</sup>Preventive medicine is included in all diseases and health care of various animal species

<sup>8</sup>Including diagnostic imaging

<sup>9</sup>Included in Basics of veterinary clinical diagnostics

<sup>10</sup>Included in Animal and environmental hygiene

<sup>11</sup>Included in Veterinary sanitary control of animals for slaughter and meat

<sup>12</sup>University of Ljubljana, Career Development Centre

**Table 4.3A: Curriculum hours in UL VF -listed subjects offered and to be taken as electives**

(five-year curriculum)

	Subject	Theoretical training		Supervised practical training			Other	Hours to be taken by each student per subject group
		Lectures Seminars	Self directed learning	Laboratory and desk based work	Non-clinical animal work	Clinical work		
	Basic subjects	A	B	C	D	E	F	
	Veterinary history with veterinary ethics	30	22					
	Anatomy of laboratory and exotic animals							
	Microbiological practicum		33	45				
	Computer science and informatics	15	15					
	Clinical sciences							
	Pathomorphological practical course		22		30			
	Clinical laboratory practical course		22			30		
	Surgical practice		33			45		
	Practical course of reproduction of domestic animals		33			45		
	Stomatology practical course		22			30		
	Practical course of skin, heart and venous diseases of dogs and cats		22			30		
	Anaesthesia, reanimation and intensive care	15	33			30		
	Clinical oncology in veterinary medicine	16	45			29		
	Animal production							
	Rearing conditions and health care of rabbits	20	22				10	

Herd health management course	15	11					
Food hygiene/Public health							
Professional knowledge							
Animal ethology	30	22					
Kinology	13	11			2		

The total number of hours (120) to be taken by each student out of the various subject groups is determined in the Study Programme and in the Student Information Package.

**Table 4.4A: 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).**

(five-year curriculum)

Subject	Theoretical training			Supervised practical training			Other	Total
	Lectures	Seminars	Self directed learning	Laboratory and desk based work D	Non-clinical animal work E	Clinical work F	G	
	A	B	C					
English language	45		45					90
German language	45		45					90
Terminology in veterinary medicine	30		45					75
Sports							120	120
								375

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

(six-year curriculum)

Year	Hours of training							Total
	Theoretical training		Self-directed learning (C)	Supervised practical training			Other (G)	
	Lectures	Seminars		Laboratory and desk based work	Non-clinical animal work	Clinical work		
	(A)	(B)		(D)	(E)	(F)		
First	428	11	782	179	210	0	10+180	1,800
Second	449	31	925	285	0	0	20+90	1,800
Third	519	8	840	158	62	118	5+90	1,800
Fourth	480	17	870	15	54	224	50+90	1,800
Fifth	385	14	875	132	80	169	55+90	1,800
Sixth	90	45	225	0	0	900	0+540	1,800
Total	2,351	126	4,517	769	406	1411	140+1,080	10,800

Beside Curriculum hours shown/defined in the table 4.1B, students have to inscribe 180 hours of electives in the first year, 90 in the second, third, fourth and fifth and 540 in the last, sixth year.

#### 4.2 B Curriculum hours UL-VF -listed subjects taken by each student

(six-year curriculum)

Comment	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								
<sup>1</sup>	a) Biophysics	30		60	30				120
<sup>2</sup>	b) Chemistry								
	c) Cell biology	33		72	15				120
<sup>2</sup>	d) Fodder, poisonous and medical plants	15		50	15			10	90
	e) Biostatistics	20		60	10				90
	<b>1- Total number of hours</b>	<b>98</b>	<b>0</b>	<b>242</b>	<b>70</b>	<b>0</b>	<b>0</b>	<b>10</b>	<b>420</b>
2.	Basic Sciences								
	a) Anatomy (incl. histology and embryology)	105		195		210			510
	Histology with embryology I.	30		90	30				150
	Histology with embryology II.	45		120	45				210
	b) Veterinary physiology	110	10	180	90				390
<sup>2</sup>	c) Biochemistry, cellular and molecular biology	150	6	195	69				420
	d) Genetics (including molecular genetics)	45	5	60	10				120
<sup>3</sup>	e) Pharmacology with toxicology	69	6	130	60			5	270
<sup>3</sup>	f) Toxicology (including environmental pollution)								
<sup>4</sup>	g) Microbiology (including virology, bacteriology and mycology) with immunology	120	15	225	60				420
<sup>4</sup>	h) Immunology								
	i) Epizootiology/Epidemiology	30		60					90
<sup>5</sup>	j) Professional ethics								
	<b>2- Total number of hours</b>	<b>704</b>	<b>42</b>	<b>1255</b>	<b>364</b>	<b>210</b>	<b>0</b>	<b>5</b>	<b>2580</b>
3.	Clinical Sciences								
<sup>6</sup>	a) Obstetrics								
	b) Pathology (including pathological anatomy)	120		150	28	62			360
	Pathophysiology	100	2	125	13				240
	Parasitology	60		150	30				240
	d) Surgery and ophthalmology (including anaesthetics)	60		90			60		210
	e) Clinical lectures on various domestic animals, poultry and other animal species including:								
	Equines	70	5	160			55	10	300
	pigs	85	2	145			58	10	300

Comment	Subject	Theoretical training			Supervised practical training			Other	Total
		Lectures	Seminars	Self directed learning	Laboratory and desk based work	Non-clinical animal work	Clinical training		
		A	B	C	D	E	F		
	poultry	75		170		24	21	10	300
	ruminants	85	5	145	25		60	10	330
	cats and dogs	70		210			80		360
	small animals	25	5	75			15		120
	fish and bees	30	4	110	12		14	10	180
	wild animals	30		65	10	5		10	120
<sup>7</sup>	f) Clinical practice 1						90		90
<sup>7</sup>	Clinical practice 2						90		90
	Professional practice (extramural)						720		720
<sup>8</sup>	g) Preventive medicine								
<sup>9</sup>	h) Basis of radiology and physical therapy	15		75			30		120
	i) Reproduction of domestic animals with obstetrics	115		205			90	10	420
	j) Veterinary state medicine and public health								
	k) Veterinary legislation and forensic medicine	90	45	225					360
	l) Therapeutics								
<sup>10</sup>	m) Basis of clinical diagnostics (including laboratory diagnostic methods)	60		90	2		28		180
	3- Total number of hours	1090	68	2190	120	91	1411	70	5040
4.	Animal Production								
	a) Animal production								
	b) Animal nutrition	60		140	30			10	240
	Hygiene and pathology of animal nutrition	65		120	55				240
	c) Agronomy								
	d) Rural economics								
	e) Animal husbandry	54	6	110	30			10	210
	f) Animal and environmental hygiene	75		80	15	30		10	210
	Hygiene of food producing plants	30		50				10	90
<sup>11</sup>	g) Animal ethology and protection								
	<b>4- Total number of hours</b>	<b>284</b>	<b>6</b>	<b>500</b>	<b>130</b>	<b>30</b>	<b>0</b>	<b>40</b>	<b>990</b>
5.	Food hygiene/ Public health	40		50					90
	Introduction to food hygiene								
<sup>12</sup>	Veterinary sanitary control of animals for slaughter and meat	45		90		75			210
	Hygiene and control of meat, fish and products	35		60	45			10	150
	Hygiene and control of milk, milk products and food of vegetable origin	35		70	40			5	150
<sup>12</sup>	b) Food hygiene and technology								
<sup>12</sup>	c) Food science including legislation								

Comment	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	
<sup>12</sup>	d) Practical work (including practical work in places where slaughtering and processing of foodstuffs take place)								
	<b>5- Total number of hours</b>	<b>155</b>	<b>0</b>	<b>270</b>	<b>85</b>	<b>75</b>	<b>0</b>	<b>15</b>	<b>600</b>
6.	Professional Knowledge								
	a) Veterinary economics	20	10	60					90
	b) Veterinary certification and report writing								
	c) Career planning and opportunities								
	6- Total number of hours	20	10	60	0	0	0	0	90
	<b>TOTAL</b>	<b>2351</b>	<b>126</b>	<b>4517</b>	<b>769</b>	<b>406</b>	<b>1411</b>	<b>140</b>	<b>9720</b>
	Total electives								1080
	GRAND TOTAL								1080

<sup>1</sup>Physics is taught as Biophysics.

<sup>2</sup>Animal Biology and Chemistry are supposed to be studied prior to the entry to veterinary education. Some organic chemistry is included in Physiological chemistry. Cellular biology is taught as a separate course. Plant biology is taught as Herbage, harmful and medicinal plants Botany.

<sup>3</sup>Both courses are joined in Pharmacology and toxicology.

<sup>4</sup>Both courses are joined in one course Microbiology and immunology.

<sup>5</sup>Professional ethics and Veterinary certification and report writing is included in Administrative and forensic veterinary medicine.

<sup>6</sup>Included in Reproduction of domestic animals with obstetrics.

<sup>7</sup>Field veterinary medicine (ambulatory clinics).

<sup>2</sup>Preventive medicine is included in all Diseases and health care of various animal species.

<sup>9</sup>Including diagnostic imaging.

<sup>10</sup>Included in Basics of veterinary clinical diagnostics.

<sup>11</sup>Included in Animal and environmental hygiene.

<sup>12</sup>Included in Veterinary sanitary control of animals for slaughter and meat.

<sup>13</sup>University of Ljubljana, Career Development Centre.

**Table 4.3B: Curriculum hours in UL-VF-listed subjects offered and to be taken as electives**

(six-year curriculum)

	Subject	Theoretical training		Supervised practical training			Other	Hours to be taken by each student per subject group
		Lectures Seminars	Self directed learning	Laboratory and desk based work	Non-clinical animal work	Clinical work		
		A	B	C	D	E		
	Basic subjects							
	English language	45	45					90
	Terminology of veterinary medicine	30	60					90

Sport	10					35	45
History of veterinary medicine	30	60					90
Veterinary informatics	20	45	25				90
Communication skills in veterinary medicine	15+30	45					90
Anatomy of laboratory and exotic animals	30	45	10			5	90
Microbiology practical course		45	45				90
Ecotoxicology in veterinary medicine	15+15	45	10				90
<b>Clinical sciences</b>							
Clin.-laboratory practical course	10	60	20				90
Ethology in animal health care	30	60					90
Reproduction practical course		45			45		90
Rearing conditions and health care of rabbits	20+2	60			8		90
Rearing conditions and health care of reptiles and other exotic animals	30+5	45			10		90
Surgery practical course		45			45		90
Anaesthesia, reanimation and intensive therapy	15+4	45			26		90
Veterinary dentistry practical course	8	60			22		90
Clinical oncology in veterinary medicine	16+6	45			23		90
Pathomorphology practical course	2	60	11	17			90
Herd health management course	30	60					90
Dermatology of dogs and cats	8	60			22		90
Cardiology of dogs and cats	10	60			20		90

Dietetics of dogs and cats	10+5	60	10			5	90
Equine sports medicine	10	60			20		90
<b>Animal production</b>							
Breeding and health care of game and wild animals in enclosures	20	45	15			10	90
Food hygiene/Public health							
Professional knowledge							
Veterinary proficiency	30	60					90
Cynology for veterinarians	15+10	60				5	90

The total number of hours (36 credits) to be taken by each student out of the various subject groups is determined in the Study programme and in the Student information package.

#### 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.*

Both programmes are uniform programmes, allowing from 2.6% in the five-year programme up to 10% electivity in the six year programme. Finally electives can be chosen in each study year in accordance with the study programme.

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

Attendance of students at seminars, laboratory and desk-based work, non-clinical animal work and clinical work is strictly obligatory, while the presence of students is highly recommended at lectures as well. The presence of students is checked and recorded regularly by the teaching staff.

- ❖ *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;*

In the present five-year programme, clinical training is an obligatory part of the veterinary curriculum, where students practise medicine and surgery on various animal species and other subjects listed in Tables 4.2.A and 4.2.B. It is organized through rotations where students participate in clinical duties in equines (one week), ruminants (two days), theriogenology (one day), pigs (one day), exotics (one day) and small animals (two weeks) in medicine and surgery. Clinical training is part of the fourth (equines, ruminants, theriogenology, pigs, exotics) and fifth (small animals) year of the curriculum. Students attend clinical practice in a full time manner depending on the clinic's working hours. However, students do have to attend regular laboratory based work as per schedule.

Clinical practice includes hands-on, skills-oriented work, as well as daily theoretical assignments.

No more than two students are included in the group per clinical rotation.

❖ *Describe clinical exercises in which students are involved prior to the commencement of clinical rotations.*

Before entering clinical rotations, students are familiarized with basic clinical principles through their pre-clinical and clinical courses, mostly through the laboratory work. They are also subject to clinical orientation starting their clinical rotation. Basic information about clinical rotation is also available on-line.

❖ *Outline the student involvement in the emergency and hospitalisation activities of the clinics.*

Students are responsible for round the clock patient management in the Equine Clinic and Small Animal Clinic. Emergencies are admitted on a 24h basis at the Equine Clinic only. Medical care and elective (still urgent) out-of- hours' services are offered in the Small Animal Clinic.

Fourth year students are required to participate in regular and 24 hour emergency clinical and management services at a dairy farm from Thursday till Sunday every week. They are supported by the Veterinary Faculty staff. Students remain at the farm at all times and can rest in a facility managed by the Veterinary Faculty.

Fifth year students are responsible for after-hours animal care at the Ljubljana Animal shelter from March 1 till May 31 (Sundays and holidays included). They join the animal shelter staff by 3 pm and remain in the shelter until the next morning. Students are responsible for in-hospital animal management as well as emergencies entering the shelter in the afternoon and during the night.

❖ *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.*

Students participate in mobile service/field services in Equine and Ruminant clinical rotation. Students participating in after- hours clinical care at the Ljubljana Animal Shelter do field services (pick up of injured/sick animals, rescue missions, emergencies in the Zoological garden) when the Animal Shelter staff are called to assist.

In the six-year programme, clinical rotation in exotic medicine will be increased from one to three days. In addition, students will be required to spend one week of clinical practice in the stud farm at Lipica, where they will be required to participate in in-hours and out-of-hours clinical services.



Students will remain at the stud farm for the whole week. They will be supported by the Faculty staff.

Clinical practice in the Ljubljana Animal shelter will last throughout the study year; students will be required to remain in the shelter hospital for 24 hours, participating in in-hours and after-hours veterinary care.

#### 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.*

Externship outline:

- Three weeks of licensed veterinary practice at a clinic inside and/or outside the Veterinary faculty (no less than one week of production animal clinical services and no less than one week of companion animal clinical services required, Students have to participate in 24 hour emergency services during externship professional practice.);
- One week of public veterinary services (departments of the National Veterinary Institute or Veterinary Administration of the Republic of Slovenia).

Students practice under the supervision of a recognized/licensed clinical or public health veterinarian in a private practice, university clinic, farm or food processing institution. At least one week of production animal, and at least one week of companion animal clinical services are required. Students are encouraged to organize their extramural practice abroad in an institution approved by the Curriculum and Student Affairs committee. In Europe these are teaching institutions, visited and approved by the EAEVE experts. University clinics at the Veterinary Faculty in Ljubljana are available for practice for students (also from abroad) during summer and winter exam/holiday break. When students are present at all of the activities of the clinics, it is still regarded as "extramural clinical practice", even though it is organized at the University clinic. On the other hand, students attending Clinical rotation are working according to the programme, specified by the pre-signed learning agreement between the sending and host institutions.

- ❖ *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.*

Yes they are included under the title Ambulatory Clinic (Clinical Praxis).

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

**Table 4.5A: Obligatory extramural work that students must undertake as part of their course**  
(five-year curriculum)

Nature of work	Minimum period <sup>2)</sup>		Maximum period <sup>2)</sup>		Year in which <sup>1)</sup> work is carried out
	hours	% of total study time	hours	% of total study time	
Clinical service	168	1.86			4.5
Public veterinary services	56	0.62			4.5

❖ *Table 4.5B: Obligatory extramural work that students must undertake as part of their course*

Six-year curriculum

Nature of work	Minimum period <sup>2)</sup>		Maximum period <sup>2)</sup>		Year in which <sup>1)</sup> work is carried out
	hours	% of total study time	hours	% of total study time	
Clinical service	504	4.67			6
Public veterinary services	168	1.72			6

❖ <sup>1)</sup>*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*❖ <sup>2)</sup>*Where applicable***4.1.5 SPECIFIC INFORMATION ON THE PRACTICAL TRAINING IN FOOD HYGIENE/PUBLIC HEALTH**❖ *Describe arrangements for teaching in a slaughterhouse and/or in a premises for the production, processing, distribution/sale or consumption of food of animal origin.*

Practical training takes place in two different slaughterhouses with which the Veterinary Faculty has signed a contract. Under the supervision of a teacher, students are allowed to visit all parts of the slaughterhouse facilities and are trained to perform the veterinary sanitary inspection of carcasses on the slaughtering line. They also visit three different food facilities for processing and distribution of food of animal origin, where visits are led by the company's employees, supervised by the faculty teacher. These visits are reported to and approved by the VARS.

❖ *Indicate the distance to the 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 slaughterhouse for farm animals (cattle, pigs, horses) where the majority of practical training takes place is located 85 km from the Veterinary Faculty. The poultry slaughterhouse is 15 km away and is visited once by every student.
- Training is performed in groups of 7 students, who work under the supervision of the teaching staff and official veterinarians. Each student has 75 hours of practical training. This encompasses nine visits of slaughterhouses lasting 8 hours (one visit to the poultry slaughterhouse) and visits to the food processing facilities. Transport to all locations for practical training in slaughter houses is organised by the Veterinary Faculty.
- Students are familiarised with the whole process of veterinary sanitary control of animals for slaughter and meat (the so-called 'from stable to table' control) in a sequential fashion. First they are taught about the control of animals before slaughtering and ante mortem inspection, and then they learn to perform the post mortem inspection of carcasses themselves. Each stage of inspection is first demonstrated by an assistant and later performed by students on the slaughtering line independently. The assistant supervises the students' work and checks that the inspection is performed successfully. When a student fails

to successfully perform an individual stage of inspection, the assistant completes or corrects the inspection. Students are also familiarised with the inspection of meat and organs in cases of emergency slaughter in or outside the slaughterhouse. Teaching also encompasses supervision of slaughterhouse workers and control of sanitary arrangements in slaughterhouses.

#### 4.1.6 RATIOS

- ❖ *These must be delineated from Table 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 1.*

##### 4.1.6.1 GENERAL INDICATORS 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:*

**Table 4.6A (five-year curriculum)**

		compulsory	electives (average) <sup>1</sup>	Total
Figure	Total number of teaching hours	8760	240	9000
A	Lectures	2513		2513
B	Seminars	60/		60
C	Self directed learning	4102		4102
D	Laboratory and desk based work	740		740
E	Non-clinical animal work	375		375
F	Clinical work	950	120	1070
G	Other	140		140

<sup>1</sup> The total number of hours (240) to be taken by each student out of the various subject groups is determined in the Study Program and in the Student Information Package.

**Table 4.6B (six-year curriculum)**

		compulsory	electives (average) <sup>1</sup>	Total
Figure	Total number of teaching hours	9720	1080	10.800
A	Lectures	2351	199	2550
B	Seminars	126	90	216
C	Self directed learning	4517	540	5057
D	Laboratory and desk based work	769	84	853
E	Non-clinical animal work	406	37	443
F	Clinical work <sup>2</sup>	1411-720=691	130	1541-720=821
G	Other	140	0	140

<sup>1</sup>Students are supposed to inscribe 1080 hours of electives cumulatively (36 ECTS). The ratio among various teaching methods varies respectively. The hours presented as electives in Table 4.6 are calculated as an average number of hours of the particular type of teaching offered in all elective subjects.

<sup>2</sup>Clinical work without extramural practice.

❖ Please give the following values:

Five-year curriculum		Denominator
R 6:	$\frac{\text{Theoretical training (A+B+C)}}{\text{Supervised practical training (D+E+F)}} = \frac{6675}{2185} = \frac{1}{0.327}$	<b>0.327</b>
R 7:	$\frac{\text{Clinical Work (F)}}{\text{Laboratory and desk based work+ non-clinical animal work (D +E)}} = \frac{1070}{1115} = \frac{1}{1.042}$	<b>1.042</b>
R 8:	$\frac{\text{Self Directed Learning (C)}}{\text{Teaching Load (A + B + C + D + E + F +G)}} = \frac{4102}{9000} = \frac{1}{2.194}$	<b>2.194</b>
Six-year curriculum		Denominator
R 6:	$\frac{\text{Theoretical training (A+B+C)}}{\text{Supervised practical training (D+E+F)}} = \frac{7823}{2837} = \frac{1}{0.363}$	<b>0.363</b>
R 7:	$\frac{\text{Clinical Work (F)}}{\text{Laboratory and desk based work+ non-clinical animal work (D +E)}} = \frac{821}{1296} = \frac{1}{1.578}$	<b>1.578</b>
R 8:	$\frac{\text{Self Directed Learning (C)}}{\text{Teaching Load (A + B + C + D + E + F +G)}} = \frac{5057}{10800} = \frac{1}{2.136}$	<b>2.136</b>

#### 4.1.6.2 SPECIAL INDICATORS OF TRAINING IN FOOD HYGIENE/ PUBLIC HEALTH

Five-year curriculum			Denominator
R 9:	$\frac{\text{Total No. hours vet.curriculum}^1}{\text{Total No. curriculum-hours Food Hygiene / Public Health}^2} = \frac{9000}{611} = \frac{1}{0.068}$		<b>0.068</b>
R 10:	$\frac{\text{Total No. curriculum-hours Food Hygiene / Public Health}^2}{\text{Hours obligatory extramural work in Veterinary inspection}^3} = \frac{611}{90} = \frac{1}{0.147}$		<b>0.147</b>
six-years curriculum			Denominator
R 9:	$\frac{\text{Total No. hours vet.curriculum}^1}{\text{Total No. curriculum-hours Food Hygiene / Public Health}^2} = \frac{10800}{600} = \frac{1}{0.056}$		<b>0.056</b>
R 10:	$\frac{\text{Food Hygiene / Public Health}^2}{\text{Hours obligatory extramural work in Veterinary inspection}^3} = \frac{600}{90} = \frac{1}{0.150}$		<b>0.1500</b>

Origin numerators, denominators

- <sup>1</sup>Total as derived in Table 4.1
- <sup>2</sup>Total as derived in Table 4.1, Subject 5
- <sup>3</sup>Figures to be taken from Table 4.5

	Five-year curriculum	Six-year curriculum	Suggested values
R6	0.327	0.363	0.51-0.36
R7	1.042	1.578	1.8-1.21
R8	2.194	2.136	0.51-7.87
R9	0.068	0.056	open
R10	0.147	0.150	open

## 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*

From the very beginning, the Veterinary Faculty of Ljubljana prepares the graduates for practical work after graduating. Day one competences were actually invented long before the name was invented. Species oriented clinics were always the way of clinical organisation. Especially in the last years (since 2005) more emphasis has been given to the clinical work, other practical work and to communication skills. In the curriculum which is still running, students implement two weeks of clinical practice at the clinics of the Veterinary Faculty and one month of practice outside the Veterinary Faculty. The practical part of the clinical subjects has always been performed in small groups (5 students in a group). Clinical practice in the 4th and 5th year is performed by 2 students. The first clinical practice performed in the 4th class is oriented towards the large animal's clinic, practice in the 5th year deals with dogs and cats. Practice in food hygiene has always been provided in the slaughterhouses, as well as in the labs. Laboratory skills and behaviour, as well as the safety work in the labs are taught from the first year onwards.

- *the way the curriculum is structured and reviewed*

The "new" curriculum which is performed in the 1st and in the 2nd class is the up-dated old curriculum. Most names of the subjects are the same as in the old curriculum. Among the basic subjects, Biophysics is now performed at the Medical Faculty of Ljubljana University, and relates much more to biomedical study. The subject of Biostatistics and genetics is divided into two separate subjects, i.e. Biostatistics and Genetics are taught by two professors. The former Physiological chemistry has been changed to Biochemistry; the Physiology of domestic animals is now Veterinary physiology.

More elective subjects offer the students the opportunity to create up to ten percent of their own tracking.

Among the clinical subjects, more clinical practice is added. In the 6th year only Forensic and state veterinary medicine is taught as a compulsory subject, all others are elective subjects or clinical practice.

- *major developments in the curriculum, now and in the near future*

A major development has been done by renewing the 'old' curriculum, by expanding the clinical practice and introducing more elective subjects. Species oriented clinical study has been a part of the curriculum since the establishment of the faculty.

In the future some more changes are necessary to be done. As in many other veterinary faculties, closer connection among basic and clinical subjects should be created by introducing models. But for this kind of study reconstruction, more experience is needed.

The six-year curriculum offers more opportunities for practical training, more attention to be paid on quality assurance of teaching and assessment of competences to be obtained

- *local conditions or circumstances that might influence the ratios in 4.1.6.*

The major problem in the past seems to be insufficient access to farm animals. In the last few years the faculty has been trying to overcome this problem by signing contracts with farms and private practitioners,

#### 4.3 SUGGESTIONS

- ❖ *If the denominators in 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?*

From the analysis of different ratios demonstrated in the table shown above, it can be concluded that even the denominators, calculated for our old curriculum nicely match the range as indicated in Annex I, however, by reorganisation of the study programme even better matching with the suggested ratio values has been achieved.

### 5 TEACHING AND LEARNING: QUALITY AND EVALUATION

#### 5.1 FACTUAL INFORMATION

##### 5.1.1 THE TEACHING PROGRAMME

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

The study programmes have been discussed several times in the last few years, and finally during the preparation of the new curriculum. All the programmes have been scrutinised, first by a commission responsible for the preparation of the new curriculum. There were evidently no overlapping between some subjects (such as microbiology and physiology of domestic animals, anatomy and economics, etc.) but in some cases it was evident that some overlapping might have existed. All the points/chapters/lectures which could be overlapped between different subjects were discussed with the commission, and professors of the subjects concerning the overlapping. In discussions all discrepancies were discussed and brought up, whether it was just necessary repetition, connection or real overlapping. In such cases the measure has been arranged how to avoid undesirable repetition. The new curriculum is probably without any major overlapping.

According to the Higher Education Act, a re-accreditation of the programme is expected every seven years. However, co-ordination of teaching and internal evaluation should be done more frequently, preferably as a yearly analysis.

- ❖ *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.*

Subjects are given to the students as lectures, laboratory work, computer assisted teaching/learning, clinical work, post-mortem examinations, practical work, seminars, extramural training and field excursions.

In the veterinary curriculum, clinical medicine is taught to small groups of veterinary students and includes hands-on, skills-oriented work, as well as daily theoretical assignments. Students are challenged with problems to gain critical thinking skills. Problem-based interaction while attending the patients enables students to assess evidence-based knowledge and to make rational diagnostic and therapeutic decisions.

Interactive computer assisted learning is applied based on the teachers' discretion and availability of the interactive material. It is, however, becoming a popular and a common pedagogic approach to facilitate better learning.

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

Students have a list of text books applicable for the respective subject, which are complemented by course notes. Course notes are regularly reviewed and up-dated by their authors with new scientific and clinical data and should be more up to date with regard to recently discovered evidence in veterinary medicine compared to veterinary textbooks.

English text books are very often supplemented with text books in the Slovenian language, written by our teachers.

- ❖ *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.*

The Veterinary Faculty has fourteen contractual arrangements with private veterinary clinics, three contracts with farmers, one with a slaughterhouse, one with a stud farm, one with a dairy cattle farm, one with an animal shelter and with Ljubljana Zoo.

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

The objectives of the veterinary curriculum are to:

- Provide students with the appropriate balance between knowledge and skills using evidence-based medicine necessary for students' day one competences. These are achieved through preclinical/biomedical science courses and courses in animal health, ecosystems, public health and investigative medicine.
- Provide the professional environment to grow and maintain good relationship among students, faculty, and veterinarians, and personal and professional ethics.
- Provide students with a broad exposure to collaborative experiences with our educational partners, interactions with community veterinarians, and research experience.

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

The last exam 'Administrative and forensic veterinary medicine' is an overview of the whole knowledge obtained during the study. During the study, students are warned to pay attention to the 'day one competences'.

When preparing the new six-year curriculum, the 'day-one competences' were the starting point for the determination of the professional competences to be obtained by each course and the teachers were requested to make sure that they will be clearly outlined in each syllabus. A comprehensive questionnaire was distributed to all teachers and they were asked to identify the knowledge and skills students are going to obtain at their course. After careful analysis of the questionnaire the working group had established, that all the required competences (day one competences) are supposed to be gained through the new study programme.

In the future, particular attention should be paid to the proper implementation of the accredited curriculum which has to be permanently upgraded by regular assessment procedures; assessment of acquired competences and assessment of the implementation of the programme by teaching staff.



### 5.1.2 THE TEACHING ENVIRONMENT

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

The Faculty of Arts, University of Ljubljana is responsible for the permanent offering of LLL-pedagogic courses, which all candidates applying for the qualification as university teachers, are supposed to take.

Every year the University of Ljubljana organises additional workshops or seminars for young or experienced teachers. Professors/assistants have good connections with other veterinary faculties abroad, offering the chance to get more practice in teaching.

Additional seminars are organised by the SDVD, Slovenian Society for Didactics in Higher Education.

The mobility of the teaching staff is supported through the CEEPUS, ERASMUS and other European programmes, as well as through bilateral agreements.

All teaching staff should be involved in research programmes and projects at the faculty, some also in professional work at the NVI. These experiences enable them to implement their scientific and professional findings and knowledge in the education process.

- ❖ *Describe the available systems for rewarding teaching excellence (e.g., accelerated promotion, prizes, etc).*

An important condition for the promotion of every assistant/professor is the students' positive opinion which is an important document in the promotion procedure. In the last period, three negative students were created and one person was not elected/promoted.

The student's opinion is written on the basis of the results of the student questionnaires for the last three to five year period.

For the promotion to the status of assistant professor the inaugural lecture is evaluated by a promotion commission. In the last period one person was not promoted, due to a negative commission opinion.

Every year students select the 'best teacher', who receives a diploma.

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

### 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?

As a member of the University of Ljubljana, the Veterinary Faculty follows the instruction and rules defined in the Statute of the University of Ljubljana. In this document scores, general periods of examination, repetition etc. are given. The Faculty itself has adopted 'Study rules', regulating teaching and student assessment procedures, examination periods, appeal procedures in case of disagreements, tracking of records and recognition of achievements obtained elsewhere.

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

All the examinations take place in the periods when there is no teaching. There are three examination periods: winter, summer and autumn. The winter examination period takes place during the winter holidays, i.e. usually from January 15th (end of the winter semester) until February 15th

(start of the summer semester). The summer period lasts from June 1st (end of the summer semester) until 10th July (start of the summer holidays). The autumn examination period usually lasts from the last week in August until the 20th September. There are no exams during the teaching period for regular students.

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

The most used forms of examination are: written papers, multiple-choice questions, oral examination or a combination of written and oral exams, particularly in the lower (1st and 2nd) classes, whereas for clinical subjects, the student's are evaluated through hands-on clinical case management and assessment of their theoretical knowledge.

- ❖ *Is use made of external examiners?*

No external examiners are included at the Veterinary Faculty in Ljubljana regarding undergraduate study, mostly due to the language barrier. It is very difficult to organise external examinations, being the only such institution in Slovenia.

However, doctoral (post graduate) programmes always require a mixed team of examiners, where at least one examiner must be from another faculty.

- ❖ *How many retakes of an examination are allowed?*

According to the statute of Ljubljana University, each student has the right to retake the exam he/she hasn't passed four times. For the last two possibilities, an examination commission is required and the candidate has to pay an examination fee. In case he/she enrolls for the class again (each student has the right to re-enrol one class during his/her study, once) the student can again retake the exams four times. In our opinion four retakes of the exam are too much; however, we have to respect University rules in this case.

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

A written exam is conducted in the form of a supervised written assignment and lasts from one to four teaching hours (45 minutes). A list of candidates with the exam grades shall be published in compliance with the legislation on personal data protection at least on the seventh workday after conducting the exam. (Statute UL Article 133). For oral exams at least 20 minutes are anticipated respecting the different nature of the exams (i.e. clinical exam can be much longer).

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

The order of exams is described in the study rules.

#### 5.1.4 EVALUATION OF TEACHING AND LEARNING

- ❖ *Describe the method(s) used to assess the quality of teaching and learning in the Faculty.*

Every year the students of all classes (compulsory for all the faculties of Ljubljana University) have to fill in the anonymous questionnaire about the quality of all those persons participating in the study. The most important questions are:

- How well is the teacher prepared for the lectures/seminars/practicals?
- How well organised/prepared are the practicals/seminars?

- How well does the teacher stimulate consideration and discussion and/or independent work?
- How clear are the exam questions, how correct is the evaluation?
- Accessibility for the students (at the right time, by e-mail, etc.).
- Estimation of the tutorial work.
- Relationship with the students.

Every quality is scored from 1 (negative) to 5 (excellent) points.

In the next study year, 2009/2010, a new much more complex on-line survey is going to be introduced. By using this questionnaire the content and organisation of teaching and evaluation of the teaching staff is supposed to be evaluated. The student is asked to answer the questions each time he/she wants to apply for an exam. The student cannot avoid answering, however, he/she has the possibility to refuse to answer.

All the questionnaires are treated by a university service and each professor/assistant receives a mark which is given to him. The results of the questionnaire are confidential, only deans of the faculties keep the records and look at the results of all teachers.

The dean has a talk with the professors who have been marked poorly by the students and warns them about their status. The professors' marks are the base for the preparation of the written students' opinion. Positive students' opinion is required for his/her election (promotion).

At the end of each year the assistants/professors have to perform a SWOT analysis, about the particular subject and teacher (professors, lecturers, assistants) for personal feed-back information. The questionnaire has three sets of three questions:

1. About the subject

What is good?

What is bad?

What are your suggestions for its improvement?

2. About the professor/assistant

Her/his good qualities:

Her/his bad qualities:

What are your suggestions for the improvement of her/his work?

3. About the students (colleagues)

Their good qualities:

Their bad qualities:

What are your suggestions to the colleagues?

❖ *Indicate whether the evaluation is a Faculty procedure, or one set up by individual departments, by students or by individuals.*

The evaluation is a Faculty procedure in accordance with the University rules. In addition, individuals can also perform their own questionnaires.

Self evaluation of the teaching staff about the realisation of the teaching process is supposed to be done by each teacher every year.

❖ *Indicate the use of external evaluators.*

The Faculty is requested to prepare annually a Quality Report (Self Report) which is a part of the Faculty Annual Report to the University. The Self evaluation report which is prepared on the basis of the statistical data, published in the faculty annual Business Report, must be adopted by the Faculty Senate. At the University level, the University Quality Report is issued annually and discussed at the University Senate, as well as at the national level at the Council of Higher Education.

External evaluations of the faculty at the national level are supposed to be at least every seven years, prior to the re-accreditation of the study programmes.

At the university level the faculties are strongly recommended to also apply for professional international external evaluations, such as the EAEVE evaluation.

The Veterinary Faculty is annually evaluated by the Slovenian Accreditation according to ISO 17025. In this accreditation, the accreditations of the faculty management as well as the working conditions for research activities are included. At the present we are using 114 accredited methods in our testing laboratories, mainly at the National Veterinary Institute.

❖ *Describe the role of students in the evaluation of teaching and teachers.*

As already mentioned, students have an important role in the evaluation of teaching and teachers. The Students' Council prepares on the basis of the annual questionnaire the students' opinion about a particular assistant/professor. This document, which is a part of other documentation (opinion of other three members of the commission, evaluation of the lecture) collected for the promotion of a particular person, is of crucial importance for successful promotion.

Students of the University of Ljubljana were also very involved in the preparation of the new, on- line questionnaire. It was adopted by the university Senate with the assent of the Students Council UL and will be in use from the beginning of the next study year.

The students participate in all important parts of the creation of study changes and study programmes. Undergraduate students are members of the Committee for study and students' affairs, and the Senate. They have two organisations: the Students' Council and Students' organization, which are called to give suggestions and opinions. Students can have meetings with teachers to discuss certain problems about the study (time table, exam terms, etc.).

❖ *Describe the follow-up given to the evaluation.*

As already mentioned above, every year a questionnaire is filled in by the students in which the most important characteristics about the teaching procedure are questioned and evaluated by the students. All members of the teaching staff should be given their own marks, the average marks of the class as well as of the faculty or/and University.

The dean is supposed to react when the marks for the particular teacher are inappropriate.

The professors/assistants with low grades are asked by the dean (the dean is the only one who has access to all marks) how to improve the teaching procedure and to abolish the deficiencies mentioned in the students' questionnaire.

The results obtained by the questionnaire are also the base for the students' report during someone's promotion. Professors/assistants with a negative students' report will not be promoted.

#### 5.1.5 STUDENT WELFARE

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

All the students are vaccinated in the first class against tick meningo-encephalitis, and in the second class against rabies.

Before the beginning of the first year, the students have to pass a course about the safety regulations at work in the laboratory (according to the rules of safety work in the laboratory). Instructions on how to protect themselves from zoonoses and how to avoid injuries when working with animals are again given during the practical work in the laboratory and in clinical work.

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

All students' associations (Students' council, Students' organization, IVSA, newspaper RUCTUS) have their annual programmes to which the Veterinary Faculty gives financial support.

Within the Faculty, students have a room for their activities (meetings).

At the university level the accommodation facilities are available in several places in Ljubljana. Students can take advantage of the subvention every day meals and bus season tickets.

Within the University of Ljubljana, the student organisation (ŠOU) arranges activities which are not a part of the study programmes. The ŠOU is active in a variety of students' life activities:

- Social : student services, legal assistance, assistance for finding accommodation
- Cultural: choirs, dance groups, publishing, radio,
- Sports
- International co-operation: assistance for finding accommodation, student-tutorship

❖ *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.*

Students who are active sportsmen/women or students who participate actively in cultural or other competitions/events, which promote the country of Slovenia, can apply to take exams in other than regular terms. Temporary reorganisation of their obligations such as laboratory practicals, clinical work and additional consultations is possible.

Students with social problems usually request enrolment without fully fulfilled conditions. They have to fill in the application form and describe the problem they have. Usually they have to add the document from social services. These cases are discussed by the Committee for study and students affairs, which takes the decision.

**The Tutorial system** was introduced by the University in the year 2007/2008 as a new approach towards the students, with the aim of improving the study success and to help the students in the new environment. The faculties had the choice to decide which activities seem to be appropriate for themselves. They can elect between teachers' tutorship and student tutorship. At the University level, the system was not fully accepted, neither by the students nor by the academic staff. Professors and assistants complain about the extra work they have to do and students somehow don't like to be controlled.

Since a relatively small number of students are enrolled at the Veterinary Faculty, the student/teacher ratios are mostly favourable, therefore students have good access to the teaching staff and one teacher-tutor per class seems to be sufficient.

Student tutorship would be appreciated as a help by more skilled colleagues during practical training, however, there are no financial resources available for promotion of this activity.

At the university level, **the Career Development Centre** and the International office have been established in the past few years, offering the students support in their career building and development, and giving more information on how to seek and find jobs. Until now the students of the Veterinary Faculty have not shown much interest in looking for help from the Career Development Centre.

**The International office** is one of the best organised University services. It organizes staff and student international exchange through European programmes such as Erasmus, Leonardo da Vinci, Mundus, Basileus, CEEPUS as well as on the basis of bilateral agreements with foreign universities. They coordinate the exchange at the institutional level by signing corresponding bilateral agreements. Together with the Centre for Mobility and European Programmes (CMEPIUS) and Student Organisation UL (ŠOU) they look after the financial part of these activities, incoming students' accommodation and additional programmes such as language courses for the Slovenian language.

## 5.2 COMMENTS

- ❖ *Please give general comments about the quality of the teaching programme under the above headings.*
- Too many possibilities for retaking exams are permitted by the present legislation. As far as the repeating of exams is concerned, the Veterinary Faculty as a member of the Ljubljana University cannot change the general rules. The same applies to the graduates, which according to the Higher Education Act can prolong their study for one year (for the purpose of finishing all the exams).
- Good and numerous text books in the Slovenian language have been written by our teachers.
- Wide (contractual) network of teaching basis was established.

## 5.3 SUGGESTIONS

- A more detailed annual analysis of the realisation of the study programme and recommendations for improvement (each subject) should be performed. The recommendations' implementation should be mandatory during the next teaching year.
- A periodical evaluation of the student assessment should be introduced.
- More support to the teachers, willing to introduce new teaching methods would be welcome.
- Higher financial support would be welcome for staff development opportunities.
- More attention should be paid to reward excellence, not only for teaching but also for other activities (tutorial systems, international exchange, engagement of students in research, QA activities, student support services ....).

## 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.

Picture No.1



Picture No.1: Description of buildings and localization of Institutes at Gerbičeva 60

1. Institute for Anatomy, Histology and Embryology, Institute for Physiology, Pharmacology and Toxicology, Institute for Breeding and Health Care of Wild Animals, Fish and Bees, Human resources management unit, common spaces and the dean's office.
2. Institute of Pathology, Forensic and Administrative Veterinary Medicine, Institute of Food Hygiene and Bromatology, Institute for Microbiology and Parasitology.
3. Institute for Pathology, Forensic and Administrative Veterinary Medicine (new extension), Institute for Food Hygiene and Bromatology (new extension), Institute of Microbiology and Parasitology (new extension).
4. Institute for Pathology, Forensic and Administrative Veterinary Medicine - TSE laboratory.
5. Purifying plant.
6. Boiler room.



7. Financial management and book keeping unit - bursar's office.

8. Transformer station – state property.

Picture No.2



Picture No.2: Description of buildings and localization of Institutes at Cesta v Mestni log 47

**1. Central building:** Institute for Hygiene and Pathology of Animal Nutrition, Informational Centre and Library, Institute for Health Care of Poultry.

**2. West building:** Clinic for Domestic Ruminants and Ambulatory Clinic, Institute for Health Care of Pigs, Institute for Health Care of Poultry – Exotic pet clinical services, Institute for Microbiology and Parasitology – Laboratories for Parasitology and Mastitis.

**3. East building:** Clinic for Reproduction and Horses, Clinic for Surgery and Small Animals, Centre for Genomics.

**4. Cross building:** Institute for Environmental and Animal Hygiene with Animal Behaviour, Institute for Breeding and Health Care of Horses, Centre for Genomics, Clinic for Reproduction and Horses – laboratories and hospital stabling.

**5.** Clinic for Surgery and Small Animals – hospital stabling.

**6.** Hospital (in construction).

**7.** Institute for Health Care of Poultry – dissection room.

**8.** Clinic for Reproduction and Horses - outpatient's department.

**9.** Institute for Health Care of Pigs - out-patients and observation department, Institute for Health Care of Poultry - outpatients, observation and isolation department.

**10.** Sheep pen.



Picture No.3



Picture No.3: Description of building at Cesta v Mestni log 51 a

#### 1. Financial management and book keeping unit.

The physical capacities of the Veterinary Faculty comprise a network of approximately 45,323.54 square metres, from which 10,295.91 usable areas of rooms, 5.754 square metres of parking area and the rest 29,273.36 are green plots, pastureland and meadows. All the buildings of the faculty are located on the southern fringes of the city of Ljubljana, at two adjacent sites. The complex of the buildings of the departments of basic sciences and administration, are located in Gerbičeva Street. They comprise dean's office ( 37.30 square metres), the Human resources management unit ( 39.40 square metres) , Secretary General Office (12.00 square metres), the office for students and study affairs (30.60 square metres), the centre for postgraduate and lifelong learning (12.00 square metres), (Office for research activities, Office for international activity, Office for lifelong learning activities), Secretariat of the National Veterinary institute(7.00 square metres ) an Institute for Anatomy, Histology and Embryology (532.40 square metres), the Institute for Physiology, Pharmacology and Toxicology (462.79 square metres), the Institute for Breeding and Health Care of Wild Animals, Fish and Bees (335.50 square metres), the Institute for Microbiology and Parasitology (1481.65 square metres) , the Institute for Pathology, Forensic and Administrative Veterinary Medicine (1034.27 square metres), Institute for Food Hygiene and Bromatology (756.33 square metres).

Another location is approximately 500m away on the Cesta v Mestni log street. The complex of clinical buildings consists of the Clinic for Surgery and Small Animals (865.58 square metres), the Clinic for Domestic Ruminants (520.84 square metres), the Clinic for Reproduction and Horses with outpatients department for horses (913.73 square metres), the Institute for Health Care of Pigs (257.39 square metres), the Institute for Health Care of Poultry (591.31 square metres) , the Institute for Breeding and Health Care of Horses (112.30 square metres), the Institute for Hygiene and

Pathology of Animal Nutrition (303,00 square metres) , the Institute for Environmental and Animal Hygiene with Animal Behaviour (181.51 square metres) , the Centre for Genomics (139.60 square metres) , the Centre for Informatics and the Library with the Computer Centre (294.34 square metres).

The Centre for sustained re-cultivation Vremščica, where a faculty farm is located, is in the Karst region, about 60km from Ljubljana. It consists of about 400 hectares of pastures and meadows mostly on the slopes of Vremščica, also partly in the valley below. The premises are at two locations. At the foot of the hill there are stables for animals, barns, garages for machines, an office and provisional settlement for the personnel. On the plateau below the top of the hill is a cheese dairy, a summer dwelling for the personnel and smaller premises for teaching.

Within the National Veterinary Institute there are units in: Murska Sobota, Maribor, Ptuj, Celje, Novo Mesto, Kranj/Naklo, Nova Gorica where students can practice in the laboratories and in the fields.

## 6.2 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.*

Table 6.1: Places available for hospitalisation and animals to be accommodated

	Species	No. places		
		2006	2007	2008
Regular hospitalisation	cattle	8	8	8
	horses	11	11	11
	small ruminants	6	6	6
	pigs	5	5	5
	dogs	14	14	14
	cats	8	8	8
	other (exotic pets)	4	10	10
Isolation facilities	farm animals and horses	2	2	2
	small animals	1	1	1
	other	2	2	2

## 6.3 Premises for animals

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

The centre for sustainable re-cultivation Vremščica, which is a faculty farm, has 600 sheep (most of them are an indigenous Slovenian breed), 10 – 15 horses, 30 donkeys, 10 – 20 goats, 20 pigs (Slovenian indigenous breed). Students are mostly trained in helping ewes giving birth in early spring.

Besides the Veterinary Faculty, also the Biotechnical Faculty, the Department of Zootechnics and the High School for veterinary technicians takes advantage of the premises for training their students.

The Centre is also used for different research programmes and projects from the Veterinary and Biotechnical Faculty.

Students perform practical training from mare reproduction at the stud farm at Lipica where they are trained in monitoring pregnancy in mares.

- ❖ *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 Veterinary Faculty has fourteen contractual arrangements with private veterinary clinics, three contracts with farmers, one with a slaughterhouse for large animals, one with a stud farm, one with a dairy cattle farm, one with an animal shelter and with the Ljubljana Zoo.

#### 6.4 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

Species	Premises	2006	2007	2008
Small animals	No. of consulting rooms	8	8	8
	No. of surgical suits			
Equine and food animals	No. of examination areas	4	4	4
	No. of surgical suites	2	2	2
other1)			1	1

1) exotic animals

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	80	72	60*	50	50*	50	50*	32*	30
Total number of places in lecture halls: 474									

\*= the lecture room can be used for both purposes described in tables 6.3 and 6.4

Legend:

No.1: Human resources management unit - Large lecture room, Cesta v Mestni log 47, cross building;

No.2: Institute for Physiology, Pharmacology and Toxicology, Gerbičeva 60, building A;

No.3: Institute for Anatomy, Histology and Embryology, Gerbičeva 60, building A;

No.4: Institute for Anatomy, Histology and Embryology, Gerbičeva 60, building A;

No.5: Institute for Pathology Forensic and Administrative Veterinary Medicine, Gerbičeva 60, building for diagnostics;

No.6: Institute for Breeding and Health Care of Wild Animals, Fish and Bees, Gerbičeva 60, building A;

No.7: Human resources management unite-postgraduate lecturing room, Gerbičeva 60, building A;

No.8: Institute for Microbiology and Parasitology, Gerbičeva 60, building for diagnostics;

No.9: Institute for Health Care of Pigs, Cesta v Mestni log 47, western building, Clinic for Ruminants, Cesta v Mestni log 47, west building

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
Places	8x5	25	20	15	12

Legend:

No.1: Clinic for Surgery and Small Animals, Cesta v Mestni log 47, east building;

No.2: Institute for Breeding and Health Care of Wild Animals, Fish and Bees, Gerbičeva 60, building A;

No.3: Informational Centre and Library, Cesta v Mestni log 47, central building;

No.4: Human resources management unit - small lecture room, Cesta v Mestni log 47, cross building;

No.5: Informational Centre and Library - Computer Centre, Cesta v Mestni log 47, central building;

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	No. 9	No. 10	No. 11
Places	3x25	2x10	2x10	21	15	15	12	10	10	5	5
Total number of places in laboratories: 208											

Legend:

No.1: Institute for Physiology, Pharmacology and Toxicology, Gerbičeva 60, building A, Institute for Food Hygiene and Bromatology and Institute for Microbiology and Parasitology;

No.2: Clinic for Reproduction and Horses, Cesta v Mestni log 47, EAST building;

No.3: Institute for Breeding and Health Care of Wild Animals, Fish and Bees, Gerbičeva 60, building A;

No.4: Institute for Pathology Forensic and Administrative Veterinary Medicine, Gerbičeva 60, building for diagnostics;

No.5: Institute for Health Care of Pigs, Cesta v Mestni log 47, west building;

No.6: Institute for Anatomy, Histology and Embryology, Gerbičeva 60, building A;

No.7: Clinic for Ruminants, Cesta v Mestni log 47, west building;

No.8: Clinic for Ruminants, Cesta v Mestni log 47, west building;

No.9: Clinic for Reproduction and Horses-outpatient's department, Cesta v Mestni log 47;

No.10: Institute for Health Care of Poultry, Cesta v Mestni log 47, exotic animal unit, west building;

No.11: Centre for Genomics, Cesta v Mestni log 47, east and cross building;

❖ *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.*

To comply with legal requirements (the Occupational Safety Act) concerning occupational health, the faculty has had the workplace risk assessment and management performed by a professional expert.

Apart from this, all employees are required to pass the workplace safety regulations exam every second year.

Students are required to pass a similar exam prior to starting with practical work. It includes various workplace-related safety issues, such as (but not exclusively) chemical and bio safety. Students are informed about specific job- or subject-related safety issues, including specific hazards, protective measures and first aid at the beginning of their practical work.

All defined safety measures must be respected at all times by employees as well as by students.

#### 6.4.1 DIAGNOSTIC LABORATORIES AND CLINICAL SUPPORT SERVICES

❖ *Diagnostic laboratories*

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

**The Diagnostic Biochemistry Laboratory at the Clinic for Small Animal Medicine and Surgery**

comprises two laboratories; the Haematology and Biochemistry laboratory. The Diagnostic laboratory offers haematological, biochemical, coagulation, urine and blood gas analysis, as well as staining of different types of samples and rapid diagnostic tests for infectious diseases for carnivores.

Haematological analysis, complete blood count and white cell differential count are performed with an automated laser haematology analyser (Technicon H\*1; Siemens/Bayer, Germany). The analyzer utilizes the principle of automated cytochemistry coupled with flow cytometry and can be used for human and animal blood samples (dog, cat, horse, rabbit, monkey, mouse, rat). Biochemical analyses with the exclusion of electrolytes are performed by two automated biochemical analysers, RX-Daytona (RANDOX, Great Britain) and TECHNICON RA-XT (Siemens/Bayer, Germany). Electrolytes, sodium, potassium and chloride, are determined with an electrolyte analyser Ilyte (IL, USA). Biochemical analyses include glucose, urea, creatinine, total protein, albumin, calcium, magnesium, iron, total bilirubin, cholesterol, triglycerides, aspartat aminotransferase, alanin-aminotransferase, creatine kinase,  $\gamma$ -glutamyl-transferase, alkaline phosphatase, bile acids. Within the framework of research, antioxidant parameters such as the activity of superoxide dismutase and glutathione peroxidase, as well as total antioxidant capacity analyses are determined by biochemical analysers. For the determination of the coagulation profile, which consists of prothrombin time, activated partial thromboplastin time, thrombin time and D-Dimers KC1A Amelung (Germany) and an ACL (IL, USA) coagulometers are used. Blood gas analysis is performed with AVL Compact 3 (AVL, Austria).

Approximately 19,000 to 20,000 analyses are performed every year for routine, research and educational purposes.

**Both clinical laboratories (haematological and biochemical) at the Clinic for Ruminants** are included in the pedagogical activities of subjects for the 3rd, 4th and 5th years of study.

In the 5th semester (the subject, Basics of Veterinary Clinical Diagnostics) the students are generally informed about basic laboratory methods.

In the 8th semester, the part of the subject Clinical practice is also performed at the Clinic for Ruminants, where the student is actively included in practical work with hospital patients (ruminants), with patients in the field and the everyday activities in the laboratories.

In the 9th semester, the students take an active part in laboratory practice work on the subject, Diseases and Health Care of Ruminants. They perform around 200 analyses every year.

The students are acquainted with haematological parameters (RBC count, complete WBC count, platelets count, Hb, Ht, MCV, MCH and MCHC using the veterinary automatic haematological analyser ABC Vet. They have to handle, prepare and analyse blood samples of ruminants. They have to prepare blood smears for differential white blood cell counts and blood cell morphology, which is performed by microscopic examination with a NIKON microscope, ECLIPSE 200.

In the biochemical laboratory at the Clinic for Ruminants the students have to prepare blood samples for analysis and are acquainted with biochemical analyses, which are performed by automatic biochemical analysers RX DAYTONA and COBAS MIRA. The biochemical parameters that are performed are: cholesterol, bilirubin, triglycerides, total protein, albumin, urea, creatinine, phosphate, calcium, magnesium, sodium, potassium, chloride, iron, copper, glucose, enzymes AST, ALT, LDH, CK, ALP, GGT, GLDH, ketone BHB and free fatty acids.

The students have to also perform milk examination (the semi-quantitative O'Moore method for acetone), examination of abdominal fluid and urine examination, chemical tests and microscopic examination of urine sediment.

❖ *Central clinical support services*

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

**Diagnostic imaging** involves different departments at our Faculty. Two X-ray machines (Siemens Iconos R 100 and Satelec X Mind) are at the Clinic for Surgery and Small Animals and one digital is in the Clinic for Reproduction and Horses. One Ultrasound machine (General Electric Vingmed) is at the Clinic for Surgery and Small Animals and another is at the Clinic for Reproduction and Horses. There are approximately 1000 patients per year for ultrasound and 1600 patients for radiology examinations. All these machines serve as diagnostic instruments for teaching purposes, for our clinical and research work, Small groups of students have practical training, where they make diagnoses based on radiographs and ultrasonographs. In these departments they gain knowledge about radiation protection and precaution.

**The Department of Anaesthesia** at the Clinic for Surgery and Small Animals provides services through three full time employed anaesthetists (two teaching positions and one clinical anaesthetist) who cover anaesthesia of dogs and cats as well as client owned rodents, rabbits and exotic pets and experimental animals, including sheep and pigs. Equine anaesthesia and anaesthesia of large ruminants is provided by other clinics at the Veterinary Faculty.

The Department of Anaesthesia provides anaesthesia services in two surgical theatres, the dentistry and radiology department at the Clinic for Surgery and Small Animals.

Cardiopulmonary resuscitation (CPR) and critical care of surgical cases are also provided by the Department of Anaesthesia.

The Department of Anaesthesia is equipped with five small animal inhalation machines (two Dräger Tiberius 800 with Ventillog ventilators, one Dräger fixed wall machine, two MATRX VMS small animal machines) with isoflurane vaporizers and one Hallowell EMC Anesthesia Work Station for rodents, rabbits and small exotic pets. A central gas supply for oxygen and air used as medical gases, and a scavenging system for waste gases is provided at all work places.

Monitoring devices include:

- 2 x RGM 5250 (capnography, pulse oximetry, end-tidal anaesthetic gases)
- 1 x Ohmeda 4700 OxiCap (capnography, pulse oximetry)
- 1 x Datex Ohmeda Light Solo (ECG, non-invasive blood pressure, pulse oximetry, body temperature)
- 1 x phasein EMMA emergency capnometer
- 3 x Parks Medical Ultrasonic Doppler flow detector Model 811-B (1 x) and Model 811-BL (2 x)
- 1 x Hewlett Packard Model 78354A (ECG, 2 x invasive blood pressure, body temperature)
- 1 x Hewlett Packard Model 66S (ECG, pulse oximetry, capnography, body temperature, non-invasive blood pressure and invasive blood pressure, cardiac output by the thermo-dilution method).

Other equipment:

- 1 x MATRX Life Defense Plus (ECG, defibrillator)

- 2 x B Braun Perfusor compact
- 1 x Air Shields transport incubator
- 10 x Shor-line cages for animals (pre and early post-operative care).

The **Cardiology Service** at the Clinic for Surgery and Small Animal Medicine provides diagnostic and patient care services to animals with cardiovascular disease, and consultation within the clinic and to referring veterinarians in Slovenia and elsewhere.

The cardiology service evaluates a variety of cardiopulmonary cases in a number of different species (dogs, cats, large animals, exotics). These conditions include congenital cardiac malformations, acquired heart disease and pre-breeding screening for a variety of diseases in dogs and cats. A typical cardiac case includes thoracic radiographs (Siemens), an electrocardiogram (Philips Page Writer), an indirect systolic blood pressure (HDO Memo Diagnostics) and a full echocardiogram with Doppler evaluation (GE Vingmed System Five). All imaging is recorded on videotape and digitally for efficient reporting and reviewing at subsequent check-up examinations. Most of our patients have these tests performed on an out-patient basis with same-day results. The results are also reported to the local veterinarian for enhanced continuity of care.

A possibility of Holter monitor (Delmar Reynolds, Lifecard CF) screening for arrhythmias associated with different conditions is available. Image Consultation: the Cardiology service offers image reviews of materials (radiographs, ECG, etc.) mailed, emailed or faxed to the service.

Interventional procedures offered to the client's own animals: pacemaker implantation

For pulmonary patients, additional diagnostic methods are available:

- endoscopy/tracheobronchoscopy
- bronchoalveolar lavage

**The Ultrasound service** is a nationally recognized leader in ultrasound imaging. It is combined with the echocardiography lab as discussed above using the same machine (GE Vingmed System Five). It provides services for in- and out-patients of our facility (the Clinic for Surgery and Small Animals) as well as for other clinics (horses, exotics) and referral veterinarians.

Diagnostics offered:

- abdominal ultrasonography
- superficial tissue imaging
- thoracic ultrasonography
- eye ultrasonography
- fine-needle aspiration
- ultrasound guided biopsies

#### 6.4.2 SLAUGHTERHOUSE FACILITIES

- ❖ *Describe briefly the slaughterhouse facility to which the faculty has access, including distances from the faculty and the level of activity.*

The slaughterhouse for farm animals (cattle, pigs, horses) where the majority of practical training takes place, is located in Celje, 85km from the Veterinary Faculty. The distance of the slaughterhouse is the main problem for the practical course. Slaughtering takes place daily, on average 150-200 pigs



and 100-150 cows are slaughtered daily. The rate of slaughtered horses is 5-10 per week. The slaughterhouse is registered for selling meat in the European Union.

The poultry slaughterhouse is located 15km from the Veterinary Faculty and it is visited once by every student where they are shown the veterinary sanitary inspection of poultry.

#### 6.4.3 FOODSTUFF PROCESSING UNIT

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

Students visit two premises for processing and distribution of meat and meat products in two different regions in Slovenia and premises for production and distribution of dairy products. The visits are led by a responsible employee of the food processing company and are approved by the VARS.

During these visits students are taught about the practical implications of the HACCP system, technology in food processing, distribution of products and veterinary sanitary control procedures inside the premises.

#### 6.4.4 WASTE MANAGEMENT

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

Waste material originating from the Institutes and Clinics of the Veterinary Faculty comes from a hazardous and non-hazardous origin and comprises the following substances:

- cadavers of small animals originating from the Clinic for Surgery and Small Animals
- cadavers of laboratory animals originating from the Institute for Physiology, Pharmacology and Toxicology
- cadavers of poultry and biological waste originating from the Institute for Health Care of Poultry, the Institute for Health Care of Pigs, the Clinic for Ruminants with an ambulatory clinic and the Clinic for Reproduction and Horses
- cadavers of laboratory animals originating from the Institute for Physiology, Pharmacology and Toxicology and the Centre for Animal Genomics
- biological waste originating from the Institute for Pathology, Forensic and Administrative Veterinary Medicine, the Institute for Microbiology and Parasitology, the Institute for Breeding and Health Care of Game, Fish and Bees and Institute for Physiology, Pharmacology and Toxicology

Regarding the rules of the law under animal waste disposal and processing, all cadavers, including corpses and carcasses of laboratory animals and biological material from the Veterinary Faculty, all this material is classified as category 1 and category 2. Since the National Veterinary Institute, part of the Veterinary Faculty, includes the veterinary hygiene service, responsible for animal waste disposal, the transportation of cadavers and carcasses is taken regularly to the verified animal rendering plant. Before transportation, all material is stored in refrigerated animal waste containers; the transportation itself is undertaken in vehicles designed for such transportation.

Infectious and non-infectious biological waste is removed from special containers in separate waste storehouses at the Veterinary Faculty by the contractor - the company verified for hazardous wastes rendering and neutralization.



Waste waters from the laboratories dealing with infectious materials are filtered and neutralized by sedimentation and neutralization cesspits, maintained by the contracted company responsible for regularly sustaining the cesspits.

All hygiene and sanitation measures are performed in a shortest possible time.

Chemical waste is disposed according to the internal quality assurance policy of the Faculty. The waste produced in labs is collected and stored as appropriate until disposed by an authorised waste disposal company.

## 6.5 Future changes

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

The negotiations with the University of Ljubljana to start building new premises for the Veterinary Faculty are in progress. A suitable location, outside the city centre, close to Ljubljana Zoo, is available at the moment for the University needs. A certain amount of financial resources have been allocated in the university budget for this purpose as well. The Veterinary Faculty has already submitted preliminary documentation. There are realistic plans that the building of the new premises will start in 2011.

## 6.6 COMMENTS

- ❖ *Comment on the adequacy of the buildings in general for undergraduate teaching.*

Buildings of the faculty are based at two locations (Gerbičeva 60 and Cesta v Mestni log 47). At the site at Gerbičeva there are mostly the preclinical and paraclinical institutes, the dean's office, the office for students, as well as the main building of the NVI. At Cesta v Mestni log there are located beside the library, clinics and institutes dealing with clinical work. The double location of the faculty doesn't represent a problem, but sometimes it is necessary to buy two machines instead of one. Buildings located at Gerbičeva 60 have been erected for the purpose of the faculty in the early sixties and were re-adapted in the 1990s, whereas the the National Veterinary Institute building was constructed in 2004. Buildings at the Cesta v Mestni log location were constructed in the late thirties and completely re-adapted in the last decades.

When the Veterinary Faculty was established in 1953, the location of all buildings was out of town, nowadays, both locations are surrounded by private houses. The old buildings located at Gerbičeva 60 are already in bad condition because they were badly constructed, and are now tilting and according to some plans of the University will be demolished in a few years.

Plans for new faculty buildings are already in preparation; the new location is predicted to be near the Biotechnical faculty, outside Ljubljana, but not far from the centre of Ljubljana and with good road connections for the students and staff.

- ❖ *Comment on the adequacy of the equipment in general for undergraduate teaching.*

The equipment for undergraduate teaching is still in fairly good condition. Most of the apparatus used for measuring some parameters (photometers, ELISA readers, etc.) are also used in research or routine work. Some clinics complain about the lack of a modern CT or NMR. The problem exists how to buy new machines when the old ones are out of order.

- ❖ *Comment on the maintenance of buildings and equipment.*

The maintenance of buildings and equipment has been managed with resources deliberately allocated by the Administrative board of the University of Ljubljana. Maintenance is also covered by budgetary funds of the ARRS, MKGP. However, these resources have proved to be insufficient, therefore additional financial resources must be earned on the market.

## 6.7 SUGGESTIONS

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

New faculty buildings, about which intense negotiations are taking place at the University level, will solve the problems about the double location of the faculty.

Some of the equipment will be transferred from the present locations to the new one; some of the equipment will need to be bought. The investment into new equipment could represent a financial problem.

## 7 ANIMALS AND TEACHING MATERIALS 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.*

Table 7.1: Materials used in practical anatomical training

	dog		ruminant		equine		other	
	Year 2008	Year 2007	Year 2008	Year 2007	Year 2008	Year 2007	Year 2008	Year 2007
Live animals <sup>1)</sup>	1	1	1	1	1	1	1 hawk 1 boa constrictor 1 ball python 1 corn snake 1 fresh water turtle 1 sea turtle 1 agama 1 gecko 1 lizard 1 axolotl 1 frog	1 hawk 1 boa constrictor 1 ball python 1 corn snake 1 fresh water turtle 1 sea turtle 1 agama 1 gecko 1 lizard 1 axolotl 1 frog
Cadavers <sup>1)</sup>	15	15	0	1sheep	0	1*	3 cats 5 pigs 5 rabbits 15 hens 20 rats 20 mice 5 budgerigars 1 swan 1 goose 3 corn snakes 2 lizards 2 frogs 1 chinchilla 5 shells 5 shrimps	3 cats 5 pigs 5 rabbits 15 hens 20 rats 20 mice 5 budgerigars 1 swan 1 goose 3 corn snakes 2 lizards 2 frogs 1 chinchilla 5 shells 5 shrimps
Specimen <sup>1)</sup> *2							200	150
Other <sup>2)</sup>								
e.g. ultrasound								
Computer assisted teaching								

<sup>1)</sup> give figures, <sup>2)</sup> indicate, \*year prior to visitation

1\* every second year

2\* fresh or formalin specimens, corrosion casts and skeletons of different body parts and animals are included. Since 2008, plastinates have been introduced as demonstration specimens.

#### 7.1.2 PATHOLOGY

Table 7.2: Number of necropsies over the past 3 years

species	Number of necropsies			Average
	2008	2007	2006	
Food-producing animals; cattle	47	76	65	90.2
small ruminants	41	226	301	
pigs	115	103	108	
other farm animals	0	0	0	
Equine	1	6	8	5.0
Poultry	375	227	230	158.5
Rabbits	37	42	40	
Companion animals/exotic dogs	67	87	74	81.1
cats	59	54	33	
other**	155	102	99	

\*year prior to visitation, \*\*Indicate species

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

Additional sources of material for teaching pathology are:

Dead animals necropsied at the Institute of Pathology, Forensic and Administrative Veterinary Medicine (about 500 animals per year, different species of farm animals, companion animals and Zoo animals).

Dead animals are available from or in the NVI Unit Ljubljana where the second necropsy room is located at the rendering plant. The NVI Unit Ljubljana is responsible for the collection of animal cadavers and has access to about 38,000 carcasses of domestic and wild animals and to 12,000 poultry carcasses per year.

### 7.1.3 ANIMAL PRODUCTION

- ❖ *Indicate the availability of food-producing animals for the practical teaching of students*

a) *at the site of the institution;*

see Table 7.3

o b) *at other sites to which the institution has access;*

see Table 7.3)

### 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.*

1. Practical training in the course titled

**The Veterinary sanitary control of animals for slaughter and meat** takes place in two slaughterhouses. Students have access to the slaughtering line and learn to perform ante-mortem inspection of animals and post-mortem inspection of pigs and cattle. They are familiarised with the ante-mortem and post-mortem inspection of poultry.

2. In the courses

**Hygiene and control of meat, fish and products and hygiene and inspection of milk, milk products and food of plant origin** students perform practical training, including bacteriological and chemical analyses of food of animal origin.

The part of bacteriological analyses contains the introduction of legislation, the reception of samples, methods of microbiological examinations, GLP, the horizontal method for the enumeration of microorganisms (ISO 4833), the horizontal method for the detection of *Salmonella* spp. (ISO 6579), the horizontal method for the detection of sulphite reductor *Clostridia*, the horizontal method for the enumeration of coagulase - positive staphylococci, the horizontal method for the detection and the enumeration of *E. coli*, Tecra (demonstration), the detection of antibiotics in milk and meat, the detection of lipophilic toxins, PSP, ASP (shellfish poisons), bacteriological examination of shellfish, the horizontal method for the detection and enumeration of *Campylobacter* spp.

In the area of chemical analyses, students become familiar with different types of food (food of animal and plant origin, food products). They perform compositional analysis of food, analysis for perishable and adulteration testing. During practice students get familiar with different laboratory techniques in food chemical analysis (gravimetric, spectroscopic, titrimetric, chromatographic). Students become familiar with Regulations and International standards related to food analysis.

Students perform analyses on samples obtained from the sales network or directly from producers. Firstly, the technology of performing individual analyses is demonstrated by the assistants; later, students independently perform the analyses in accordance with the existing standards, rules and legislation. Their work and end results are supervised and assessed by the assistant.

#### **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.*

All clinics are open every week during the course of the year

- ❖ *State the number of consultation days each week.*

State the consultation hours.

See Table 7.3

##### **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 "in- patients" 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
		2008		2007		2006		
		a	b	a	b	a	b	20,125
Food producing	Bovine	103	27	58	16	113	30	
	Ovine, caprine	50	7	40	5	20	5	
	Porcine	4	0	2	0	2	0	
	Other farm animals**	1	0	0	0	0	0	
Poultry		0	0	0	0	0	0	
Rabbits		500	75	500	60	250	60	
Equine		1949	550	2182	650	1934	600	
Companion animals/exotics	Canine	8865	214	8685	231	9250	221	
	Feline	4109	107	4118	116	5097	110	
	other***	302	200	230	150	180	100	

\*Year prior to evaluation,

\*\*Indicate species: Lama

\*\*\*Indicate species: exotic animals, small animals

**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.*

An animal transport trailer and licensed drivers (heavy and wide load) are available for horses and production animals.

**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 by species.*

On-call emergency service is available in the equine clinic for out-patients in the field and in the clinic 24 hours/day.

In-house emergency services are available in the Clinic for surgery and small animals from 8 am till 8 pm.

Hospitalized cases are managed 24 hours a day at all clinical facilities at the Veterinary Faculty.

**7.1.8 ON-FARM TEACHING AND OUTSIDE PATIENT CARE**

Fourth year students join 24 hour emergency care in a bovine farm where they remain from each Thursday night until Sunday evening. They are supported by the faculty staff and are responsible for the medical care of cattle on the farm. The living quarters at the farm are set and managed by the Veterinary Faculty.

Fifth year students are responsible for after-hours animal care in Ljubljana Animal shelter from March 1 until May 31 (Sundays and holidays included). They join the animal shelter staff by 3 pm and remain in the shelter until next morning. Students are responsible for the Animal shelter hospital animal management as well as emergencies entering the shelter during the night.

### 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)?*

Students are required to join the ruminant field services during working hours and equine field services on Wednesday and Thursday regardless of clinic hours.

- ❖ *State the number, the type and the seating capacity of the vehicles used to transport students working in the ambulatory (mobile) clinic.*

Two students most often participate in the clinical rotation in Clinical practice I. There are never more than three included in the rotation at the same time. Therefore regular five seat passenger vehicles are sufficient for the service. Several are available at the Faculty.

- ❖ *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).*

See table 7.4

- ❖ *State the average number of visits in a year made by the ambulatory clinic to farms and other institutions.*

Table 7.4a: Number of cases seen by the Ambulatory (mobile clinics) in the past three years.

	Species	Number of patients			Average
		2008	2007	2006	
Food-producing animals	cattle	213	38	136	46.85
	small ruminants	22	366	153	
	pigs	420	365	536	
	other farm animals**				
Poultry (No. of flocks)					
Rabbits (No. production units)					
Equine		110	110	110	
Other					

\*Year prior to visitation, \*\*Indicate species

### 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 number of patients seen in outside teaching*

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

	Species	Number of patients			Average
		2008	2007	2006	
Food-producing animals	cattle	1107	746	1092	962.1
	small ruminants	1239	1553	1321	
	pigs	480	425	696	
	other farm animals**	0	0	0	
Equine		858	1064	777	899.7
Other		0	0	0	0.0

\*Year prior to visitation, \*\*Indicate species

### 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.*

Equine clinical practice:

In equine clinical practice no notable outside sources are included for training purposes.

Presently, in the equine practice, facilities, hours of service, expertise and responsiveness are at the highest level in the area; however, certain equipment lags behind what several private practices can offer to support their equine patients/clientele.

Theriogenology/Reproduction practice:

The main additional outside source of material for clinical training in theriogenology is the dairy farm GO-KO Kočevje. This farm has around 1000 cows. Six students visit the farm per week. Students we perform between 10 and 20 ultrasound examinations (pregnancy detection and cows with fertility problems) perform gynaecological examinations (vaginal and rectal exam) and artificial insemination (intrauterine trans-cervical insemination) on 6 to 10 cows per group.

Additionally we also use the material from the farm which is used for the performance test of rams and also has a nucleus herd of two cattle breeds. Yearly, on this farm the students can perform around 450 andrological examinations of rams (including electro-ejaculation and examinations of the semen), 40 artificial inseminations and around 60 ultrasound examinations of the cattle.

Another source of material used for teaching comes from the examination of the breeding stallions before they can be included into the program controlled reproduction. Yearly we make around 40 andrological examinations of stallions and collect samples for analysis of the CEM (contagious equine metritis) from app. 270 breeding stallions.

As teaching material we also use the animals from embryo transfer (18-22 animals per year), herd check (ultrasound examination of the reproductive tract) on the farm with 60 cows (app. 10 visits per year) and herd checks on the farms with reproductive problems (app. 10 visits per year).

Ruminant clinical practice:

Biological samples that are submitted for analyses to our clinical laboratory are also used for teaching. Students have to prepare samples (blood, urine, milk, and other body fluids) for analyses, perform basic analyses (blood smears, automated haematological examination, urine analyses, milk ketone bodies' analyses ...) and interpret the results.



For clinical training purposes we routinely make use of animals from four dairy farms with which we have contracts. Besides, we are also arranging practical work with private veterinarians in the field to ensure the diversity of clinical cases (preventive work according to state legislation – tuberculinisation, blood sampling and keeping of official records; treatments of ill animals at farms; preventive measures in ruminant herds ...).

Poultry clinical practice:

For clinical training purpose we also use material delivered from poultry farms (dead birds for clinical pathology) and birds and other exotic animal species admitted to our out-patient unit.

Companion animal clinical practice:

At the Clinic for Surgery and Small Animals no notable outside sources are included for training purposes.

- ❖ *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.*

In equine clinical practice 75% of the admitted cases are first opinion cases.

At the Clinic for Surgery and Small Animals 70% of the admitted cases are first opinion cases.

The Clinic for ruminants is predominantly a referral clinic. About 90% of all admitted patients (cattle) are referred from private field veterinarians.

- ❖ *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, three afternoons, etc.).*

At the Veterinary Faculty, University of Ljubljana there is only academic specialization being implemented presently. Clinical specialization programmes are in preparation and will be introduced after conformation by the university bodies and the accreditation by the national accreditation body, the Council of Higher Education. It is very likely to be implemented by the school year 2010-2011.

Large animal clinical medicine:

In equine and ruminant clinical practice the work load is shared regardless of clinical specialization/interest. One veterinarian is board specialized at the ACVIM. Services are being used for selected cardiology and oncology cases from specialists/special clinical interest veterinarians from Clinic for Surgery and Small Animals.

Theriogenology/Reproduction:

The Clinic for Reproduction and Horses offers in the field of reproduction, andrological examinations in different species (stallion, bulls, boars, rams) 2 days per week. Freezing canine semen, artificial insemination and fertility problems in bitches is practised 1-2 days per week. For fertility problems in mares and artificial insemination, 1-2 days per week are spent. Embryo transfer and freezing of the embryos: around 1 day per week is needed.

For Herd health, one day per week is planned.

Companion animals' clinical medicine (Clinic for Surgery and Small Animals)

Specialists/special clinical interest veterinarians (cardiology, oncology, dermatology, dentistry, neurology, orthopaedic and soft tissue surgery) are available. Cases are booked as outpatients from Monday to Friday; cases requiring emergency specialist services are accepted in an urgent manner.

- ❖ *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).*

In equine clinical practice, cases are referred to the Faculty clinic from private practitioners if the case requires higher level medical services, or if the diagnostics/treatment is time and labour consuming. Advisory services are available and offered to private practitioners to assist patients with a variety of clinical problems.

The clinic for ruminants is predominantly a referral clinic, orientated towards surgical clinical cases. About 90% of all admitted patients are referred from private field veterinarians. During working hours, we also offer an advisory service and a second opinion to private field veterinarians (from all over Slovenia) with the possibility of farm or animal visits to assist with diagnostic expertise (clinical expertise, biological material sampling for laboratory analyses) and preparation of a treatment plan. Students are routinely involved in farm visits.

Outside organizations assist the Veterinary Faculty in the externship programme, as described elsewhere in this document.

The Institute for health care of poultry works as a diagnostic laboratory for poultry diseases for Slovene poultry companies, as well as an adviser for practitioners and farmers who are involved in the poultry industry, and VARS. We are the national reference laboratory for avian influenza and Newcastle diseases. Beside this, we also perform clinical trials for pharmaceutical companies (testing of vaccines, antimicrobials etc.).

At the Clinic for Surgery and Small Animals we receive referred patients and we provide diagnostic laboratory services to private practitioners.

- ❖ *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.*

Medical records are kept for each case and include owner/agent personal information, animal identification specifics and case histories. All clinical aspects of the case history are recorded, as well as client communications if necessary. The system is not centralised; hard copies are kept on file and can be reviewed for future reference.

At the Clinic for ruminants, a medical record book (Outpatients book) is kept where all the patients seen are recorded. Additionally medical records for all the patients that are hospitalised are kept in files. The medical record identification number is consecutive number of the patient in the medical record book.

At the Clinic for Reproduction and Horses the case records are kept in the Outpatients book. Individual protocols are kept in a file for artificial insemination of mares and surgical procedures that are performed by students (hands-on).

For clinical patients, records are kept for five years as a card file, system is not centralised.

For other samples, the centralised computer systems LIMS and EPI are used, records are kept for a minimum of five years.

At the Clinic for Surgery and Small Animals and the Equine clinic records are kept as a hard copy and electronically for each case and include owner/agent personal information, animal identification

specifics and case histories. All clinical aspects of the case history are recorded, as well as client communications if necessary.

### 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.

Table 7.5: Animals available for clinical training (in the clinics of the Faculty or seen through the out-patient's clinic) as ratio to the number of students in last full year of clinical training

	Denominator
R 11: $\frac{\text{No. of students graduating annually}^a}{\text{No. of food-producing animals seen at the Faculty}^1} = \frac{48}{20.125} = \frac{1}{0.419}$	<b>0.419</b>
R 12: $\frac{\text{No. of students graduating annually}^a}{\text{No. of individual food-animal consultations outside the Faculty}^2} = \frac{48}{962.1} = \frac{1}{20.043}$	<b>20, 043</b>
R 13: $\frac{\text{No. of students graduating annually}^a}{\text{number of herd health visits}^{3,4}} = \frac{48}{72} = \frac{1}{1.5}$	<b>1.500</b>
R 14: $\frac{\text{No. of students graduating annually}^a}{\text{number of equine cases}^1} = \frac{48}{1310.8} = \frac{1}{27.308}$	<b>27.308</b>
R 15: $\frac{\text{No. of students graduating annually}^a}{\text{number of poultry/rabbit cases}^1} = \frac{48}{120.4} = \frac{1}{2.508}$	<b>2.508</b>
R 16: $\frac{\text{No. of students graduating annually}^a}{\text{No. of companion animals seen at Faculty}^1} = \frac{48}{2349.2} = \frac{1}{48.942}$	<b>48.942</b>
R 17: $\frac{\text{No. of students graduating annually}^a}{\text{Poultry (flocks)/rabbits (production units) seen}^{2,3}} = \frac{48}{5} = \frac{1}{0.104}$	<b>0.104</b>

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:	$\frac{\text{No. of students graduating annually}^a}{\text{No. necropsies food producing animals + equines}} = \frac{48}{204} = \frac{1}{4.250}$	<b>4.250</b>
R 19:	$\frac{\text{No. of students graduating annually}^a}{\text{No. necropsies poultry/rabbits}^1} = \frac{48}{412} = \frac{1}{8.583}$	<b>8.583</b>
R 20:	$\frac{\text{No. of students graduating annually}^a}{\text{No. necropsies companion animals}^1} = \frac{48}{281} = \frac{1}{5.854}$	<b>5.854</b>

a)see Annex I, 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

### 7.1.11 OTHER SPECIES

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

#### **Fish and bees**

In Slovenia we have 94 species of fish, among them the endemic marble trout is probably one of the most important. Fish farming is orientated mainly towards production for repopulating fishing waters. However, 1,500 tonnes of rainbow trout, 500 tonnes of carp and small amounts of sea bream and Mediterranean mussels are produced annually.

Because we have not got huge water streams which could supply big fish farms, the majority of fish farms have a production capacity of under 5 tonnes which are well organised and modern with all the necessary equipment.

Beekeeping is even more important because we have the native honeybee species, the Carniolan honeybee (*Apis mellifera carnica*), which is one of the world's top three bee species, known for its docility, gentleness and diligence. With around 8000 beekeepers, well organised in the Beekeeper Association of Slovenia, Slovenia is a nation of beekeepers.

In the veterinary service we pay the greatest attention to the prevention of fish and honeybee diseases. The technology of fish farming and beekeeping is controlled, both from the economic and the animal welfare point of view. We take samples for surveillance and for diagnostic purposes. We treat fish and honeybees and cooperate in the eradication programmes.

The subject 'The diseases and the hygiene of breeding fish and honeybees' is to teach students the anatomy and physiology of fish, the biology of the honeybee society, the natural preservation role of fish and honeybees and its importance for contemporary agriculture. The students should gain the basic knowledge of the diseases occurrence, its prompt recognition, accurate treatment and eradication.

The graduates are qualified for independent professional work in the national veterinary institutions and other scientific or/and professional organisations such as advisory services for honeybee and/or fish diseases. The knowledge of the pathology, clinical and laboratory diagnoses of honeybee and fish diseases ensures the effective disease identification, treating and implementing preventative measures. In the fish farm (s) on the stream or in the apiary (ies) in a specific geographical area in accordance with the current relevant legislation they should be able to solve the specific epizootical situation and determine the health status.

The subject comprises the anatomy and physiology of fish and honeybees, the biology of the honeybee society, the basis of beekeeping and fish breeding, fish and honeybee diseases and their health management. The lectures given comprise the basis of pathophysiology and immunology of fish and honeybees, infectious and non-infectious diseases and the anomalies in their development. The lecture's emphasis is on the epizootiology of the intensive breeding in an open area and disease prevention. In the practical section the subject deals with the anatomy of fish and honeybees and with the fundamental diagnostic procedures. Through the field work students get an insight into fish breeding and beekeeping, the selection, reproduction, disease treatment and their prevention.

The graduates are able to solve the health problems according to the current legislation: safe for humans, safe for the environment and safe for the animals.

### ***Wildlife populations***

Wildlife populations represent a special field of veterinary medicine. In Slovenia, wildlife has the meaning of national identity and culture and is an important issue for the country in which most of its land mass is covered by forests (72%). The country is inhabited with numerous wildlife species distributed throughout the territory and the diversity of wildlife is immense.

Deer species are the most widely spread farmed animals in the world and this also true for Slovenia. Currently there are 300 enclosures, spread all over the country, and containing more than 3,500 different deer, mainly fallow and red deer. There are also enclosures with other wild species such as wild boar, hare, moufflon, pheasant, etc. By intensive breeding in enclosures the living conditions change, and vary from the natural habitat. Compared to domestic animals, wild animals react to external irritations much more sensitively and are a lot more temperamental. As a result, they become subdued under stressful situations. Stress, one of major factors for the decrease in immunity, causes a higher susceptibility to diseases. Numerous reports on different diseases in the world show that all diseases that can be observed in nature can also appear within captivity. The transmission of diseases can be spread within the herd, among different herds of the same animal species, among the herds of different animal species and from animals to man.

Slovenia is also one of the last European habitats for large carnivores (brown bear, wolf and Eurasian lynx). However, depredation represents the most far-reaching problem in their management and the main reason for their control or even extinction. Large carnivore predation on livestock is a considerable management problem that has arisen in Slovenia due to the expansion of pasture areas. Compensation costs covering predation damage on livestock increase year by year.

The population dynamic of different wild animals is regulated through the hunting legislation. Recent studies in wild fauna and diseases of wildlife throughout the world and in Slovenia in the last decade have demonstrated the growing importance of wildlife diseases as they have a substantial impact on human health, agricultural production, wildlife-based economies and wildlife conservation. However, the response to threats to wildlife is insignificant despite the apparent increasing incidences of disease in wildlife and threats to humans from diseases originating in wildlife. Wild animals represent an important factor for the transmission of diseases to other wild and farm animals and also to humans.

During the course, the students become acquainted with the knowledge of different species of game in Slovenia, their pathology and infective diseases, health problems of game and diseases specific for wild species, problems of cohabitation with domestic animals, occurrence of diseases and their role in nature and preventive measures based on ecological grounds. Graduates also acquired knowledge about hunting legislation, hunting management and organization, breeding technology, immobilization and manipulation of wild animals, transport and quarantine. Theoretical and practical knowledge will help students in the field to estimate and solve the current problems. Lectures,

practice (in groups of seven students) in the lecture room and field lectures will be the main learning methods.

The student, finishing the study programme is qualified to recognize the irregularities in enclosures for wild animals, collecting samples for diagnostic purposes, preparing and performing sanitation and preventive programmes, collaboration in the eradication programmes of diseases in wild animals, recognizing the causes of damage to domestic animals and preventing damage caused by wildlife.

## 7.2 COMMENTS

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

It has been increasingly difficult for the Veterinary faculty to attract and retain production animal clinical cases in the faculty clinics; therefore, ration No. 11 (R 11) computed lower than suggested. Modern production animal husbandry does not tolerate high cost veterinary services if the animal is not of exquisite value. Therefore, the Veterinary faculty makes great effort to offer clinical consultations outside the faculty to compensate for the lack of in house patients (R 11), which reflect in substantially greater than recommended ration No. 12 (R 12).

## 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?*

Costs of the production animal veterinary medical services do not meet the economic interest of farmers, especially if their animals need referral to the university clinic. Veterinary faculty proactively seeks clientele to provide such services and expose students to production animal clinical practice. This is slowly becoming an overwhelming financial burden for the Veterinary faculty; therefore, a subvention should be considered /implemented coming from the government/ministries that would partially subsidise costs related to production animal clinical services related to student activities.

The faculty should also consider, perhaps in conjunction with the university, to create an office or dedicate human resources, which main purpose would be to promote the faculty/university, recognize donors and attract donations. New sources of income are needed to support this faculty dedication to create competent veterinarians.

**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 at the Faculty/university that are available to students. Indicate how the library/libraries are managed (e.g. library committee).*

The library of the Veterinary Faculty is an academic and archival library. Its contents cover the field of veterinary medicine and related scientific areas. Being an academic library it serves for teaching purposes and research work at the University and at the same time it is the only library in the field of veterinary medicine in Slovenia. All academic libraries are on-line connected to the librarian information network of the University of Ljubljana as a part of the national information network of Slovenia (KIS)

Users of our Library are graduate and postgraduate students, all employees of the Veterinary Faculty, veterinarians from Slovenia and other employees at the University of Ljubljana. Each student at the University of Ljubljana has a student card which is in the same time a standard library card for use in all libraries at the University of Ljubljana. They pay a membership fee only once.

The Library supplies users with information sources held either by our faculty or any library in Slovenia and abroad. It obtains books, periodical articles, conference papers, standards, and other documents. It also provides access to on-line sources from the home page of the Library.  
(<http://www2.vf.uni-lj.si/knjiznica/index.htm>)

- ❖ *For each major library at the Faculty, please provide the following information, either in narrative or tabular form.*

Main library:	
Is this specific to the veterinary training establishment?	It has specific library materials
Is this common to two or more establishments?	no
Full time equivalents of part time employees	3
Number of full-time employees	3
Number of journals received each year as hard copies	157
Numbers of full access electronic journals	86 of our print version; two are only electronic from the digital library at the University to more than 2,000
Availabilities for on-line literature search	yes
Availability of textbooks	yes
Number of student reading places	20
Library opening hours during term-time during vacations	weekdays
Indicate how the facilities are used by students	18,000 items are loaned 7,364 visits in 2008

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Subsidiary libraries of the Faculty

- ❖ *Please describe the subsidiary (e.g. Departmental) libraries of the Faculty, and arrangements for student access.*

Students have to borrow the books only from the main library where we have an automatic library loan COBISS system (Cooperative On-line Bibliographic Information System and Service).

- ❖ *Indicate whether the main library holds a list of individual books from the subsidiary libraries.*

Each institute or clinic has its own library. All their books are obtained from the main library where they are recorded and processed.

- ❖ *Describe any other information services and how are they are supported and how student access is regulated*

Our Library is a member of the Consortia for the acquisition of electronic sources at the University of Ljubljana. For this reason, we can provide our users access to more than 30 bibliographic bases, more than 2,000 e-journals' titles, 800 e-books, many general and special e-dictionaries. Most of our e-resources are accessible with remote access from outside the University of Ljubljana local networks. The statistics of use are recorded by the coordinator of the Consortia.

## 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.*

Students have free access to additional literature also through all other university libraries in Ljubljana. The number of reading spaces was increased recently, at the same time the working conditions were improved. The opening hours of the library seem not to be optimal for all students, however the main students' interest was taken into account. The personnel are well trained and willing to assist the users of the library.

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

Veterinary Faculty is committed to provide students and employees with on-line access to the relevant literature. WiFi technology is available throughout the faculty as of summer 2009.

## 8.3 SUGGESTIONS

**The library opening hours should be extended to enable student access to literature as well as reading places possibilities throughout the day.**



## 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 the 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 years (old curriculum)

6 years (new curriculum)

In Slovenia all students have, as determined in the Higher Education Act, the possibility to retain their student status one year after completing the MNY, to finish their exams or diploma work.

**Table 9.1: Undergraduate student composition in the year prior to attendance (2007/2008)**

	MNY	MNY+1
Total number of undergraduate students	359	463
Total number of male students	89	113
Total number of female students	258	335
Foreign students	2	4
- from EU countries	4	4
- from non-EU countries	6	7

#### 9.1.2 STUDENT ADMISSION

- ❖ *State the minimum admission requirements.*

To the uniform study of veterinary medicine at the Veterinary Faculty University of Ljubljana, candidates can be admitted:

- who have graduated from a grammar school or ;
- who have graduated from a professional four-year secondary school programme for veterinary technicians and have passed additional leaving exam from chemistry (An additional exam can be taken from physics or biology when chemistry had already been included in the regular final exam);
- who have completed grammar school or any other four-year secondary school programme before 1. June 1995;

- ❖ *Indicate whether there is a limit to the number of students admitted each year.*

Yes. The enrolment is limited to 70 students per year.

❖ *Describe how the number of government-funded student places is determined.*

The Veterinary Faculty addresses each year to the Government of the Republic Slovenia, a request for the limitation of the number of candidates to be enrolled. In the last three years the number of students has been limited to 70 applicants, while prior to this the limit used to be 60. The increase in the government funded student places was due to the government's special efforts to improve the ratio of students in natural sciences and techniques, compared with social sciences.

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

If in the regular term more than 70 candidates apply for admittance, restricted enrolment should be introduced and the applicants shall be ranked and assessed for admission as follows:

**under A:**

- General score of grades in the leaving exam - 60% of points
- General score of grades in the 3rd and 4th year of the secondary school - 30% of points
- The score of grades acquired in one of the leaving exams in natural sciences (chemistry, physics, biology) - 10% of points

**under B:**

- General score of grades in leaving examination expressed in points – 20 % of points
- General score of grades in the 3rd and 4th year of the secondary school – 40% of points
- Grades acquired in chemistry, physics or biology – 40% of points

The selection of candidates is made by the University Centre for Applications and Informatics of the University of Ljubljana, which also takes care of the required differential examinations and examinations in chemistry, physics and biology. The 70 best applicants, i.e. those with the highest number of points shall be admitted.

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.

On the basis of the selection procedure, described above, it is assumed that the enrolled students have a very similar knowledge base in scientific disciplines from their previous studies. The grammar and secondary school leaving exams are organised at the national level and are unique for the whole generation of students.

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

According to the Higher Education Act, in addition to the above mentioned number, an additional five percent of applicants from non-European countries can be enrolled, as well as up to five percent of "parallel" students, i.e. students studying in two faculties simultaneously.

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

We believe that the present number of enrolled students represents the upper limit the Veterinary Faculty can afford, regarding the present teaching premises as well as the labour market demand.

- ❖ *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 <sup>1</sup>	other entry mode <sup>2</sup> (describe)
2007 - 2008	151	74	9
2006 - 2007	176	73	8
2005 - 2006	146	60	9
2004 - 2005	167	62	6
2003 -2004	163	60	7
Average	161	66	7.8

<sup>1</sup>The number of the enrolled students was in the last two years limited to 70 applicants, and to 60 applicants in the previous years, respectively. Exceeding these numbers, classified as "standard intake" was due to the legal requirement that all applicants reaching the limiting score of points are eligible to enrol.

<sup>2</sup>Additionally, the faculty is allowed (and stimulated) to enrol up to 5% of foreign (non EU) students and up to 5% of students already enrolled at another faculty at the University of Ljubljana.

### 9.1.3 STUDENT FLOW

- ❖ *Table 9.3A 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 9.3A: Student flow for the generation 2002-2003**

Number of students present after admitted year <sup>1</sup>				flow
	1st year <sup>1</sup>	2002 - 2003	80	
	2nd year	2003 -2004	41	51.3 %
	3rd year	2004 - 2005	37	90.2 %
	4th year	2005 -2006	36	97.3 %
MNY	5th year	2006 - 2007	36	100 %
	6th year	2007 - 2008	36	100 %
	>6th year		29	
	number of undergraduate veterinary students			

<sup>1</sup>mark year matching the MNY

**Table 9.3B: Distribution and total number of undergraduate veterinary students for the study year 2008-2009**

Number of students admitted			Number of additionally admitted students
	1st year <sup>1</sup>	77	17
	2nd year	68	20
	3rd year	56	2
	4th year	67	0
MNY	5th year	47	0
	6th year	50	
	>6th year	52	

	number of undergraduate veterinary students		456
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<sup>1</sup>mark year matching the MNY

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

	Year	Number graduating
N*	2007 – 2008	48
N – 1	2006 -2007	49
N – 2	2005 – 2006	50
N – 3	2004 – 2005	54
N – 4	2003 - 2004	78
	average	55

\*year prior to visitation

**Table 9.5A: Average duration of studies (distribution of students in years)\* in 2007 - 2008**

Duration of attendance (in years)		number
years 0 <sup>1</sup>	5 years	0
years 1	6 years	6
years 2	7 years	22
years 3	8 years	8
years 4	9 years	7
years 5	10 years	5
years >	>10 years	

<sup>1</sup> Year matching the MNY allotted to the veterinary curriculum \*year prior to attendance

**Table 9. 5 B: Average duration of studies (in years) in the past 5 years**

Study year	Average duration of studies (in years)
2007-2008	7.08
2006-2007	7.22
2005-2006	7.59
2004-2005	7.59
2003-2004	7.40

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

**For enrolment to the 2nd year**, the examinations for the following subjects have to be passed: Biophysics, Cell biology, Physiological Chemistry ( Biochemistry), Fodder, Poisonous and Medicinal Plants (Botany), Terminology in Veterinary Science, Genetics and Biomathematics, Anatomy of Domestic Animals, Seminar Paper in Histology. The examination in Cell Biology is to be passed before submitting the seminar paper in Histology.

**For enrolment to the 3rd year**, all the examinations from the first year have to be passed, followed by Histology and Embryology, Microbiology and Immunology, Parasitology, Physiology of Domestic Animals, Animal Nutrition, Animal Husbandry. The examination in Histology is to be passed before the examination in the Physiology of Domestic Animals.

**For enrolment to the 4th year**, all the examinations from the 2nd year are required, followed by Pathological Anatomy with pathological histology, Pathological Physiology, Pharmacology with Toxicology, and three examinations of the student's choice from the remaining subjects. The exam for Surgery with Ophthalmology can be selected only when the compulsory examinations have been passed successfully.

**For enrolment to the 5th year**, all the examinations from the 3rd year are required, Reproduction of Domestic Animals with Obstetrics and four examinations of the student's choice from among the remaining subjects, of which at least one has to be from the following subjects, Diseases and Health Care of Poultry, Diseases and Health Care of Equines, Diseases and Health Care of Swine, Diseases and Hygiene for Breeding and the Health Care of Fish and Honey Bees. The examination of the Reproduction of Domestic Animals with Obstetrics has to be passed before the above mentioned subjects.

The requirement for taking the 4th year examinations is that all the examinations from the 3rd year have to be passed.

By the end of the 10th semester, students must undergo one month of externship professional practice (details under 4.1.4). Students mostly join veterinarians in veterinary practices in Slovenia. However, they may also join the faculty clinic in the period between the semesters. Students are encouraged to go abroad for their clinical externship. Part of the veterinary externship professional practice is also one week of public veterinary services. Clinical externship has to provide students with clinical practice in small/companion as well as production animals. Students have to participate in 24 hour emergency services during externship professional practice.

The enrolment to the one year graduate period requires a confirmed admittance to the 5th study year.

In the new, six year curriculum, 60 ECTS are required to be promoted to the subsequent year.

The following sequence of examinations is requested:

The examination in the subject Forensic and State Veterinary Medicine can be taken by the students after having passed the examinations in all other subjects. The date when the student passes this last exam is the date of graduation.

**Taking the same year again.** Students who do not meet the requirements for enrolment to the next year are allowed to take the same year again, if they pass at least half of the examinations of the current year. The Committee for Study and Students Affairs can exceptionally allow a repeated enrolment to a student, who has not met the requirements according to the rules due to a cogent reason such as: maternity, prolonged illness, exceptional family or social circumstances, taking part in top level professional, cultural and sports events, active participation under the working bodies of the University or Students' Organisation and the like, which has to be proved by appropriate evidence.

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

If a student sits for an exam 6 times.

Other relevant circumstances are defined in the University Discipline Rules (26. 4. 2007)

## 9.2 COMMENTS

- ❖ *Comment on the standard of the students starting the course.*

The students enrolled in the Veterinary Medicine Programme are good students, usually the upper third of the generation, in comparison with secondary school leaving exams' marks. Due to the high interest for studying veterinary medicine and the limited number of study places, a strict selection procedure is in place.

- ❖ *Comment on the ability of the Faculty to satisfactorily decide on the number of students it can accept.*

The Faculty can suggest to the government of Republic of Slovenia the limitation of student places, however, the number of study places is closely related to the financing system. We believe that in the present situation (regarding staff, premises and labour market requirements) the upper limit of the students has been reached. The selection process is organised by the National Evaluation Centre.

- ❖ *Comments on the factors that determine the number of students admitted.*

The main reason for the limited admission results from the physical capacity of the teaching premises. The present number of admitted students (70 per year) is the maximum number that still assures proper standards of training. Besides, the present number of graduates slightly exceed the labour market demands, therefore pressing our graduates to search for employment in closely related professions, namely in sales and research in the pharmaceutical industry, research institutions or state administration. The Faculty can ask for the limited number of the students. This is usually done in coordination with the Veterinary chamber of Slovenia. For years the limit number of students admitted in the first class was 60. In the last five years the Ministry of Higher Education expanded the number of students in life science studies and the Veterinary faculty enrolled 70 students the first class. That number has always been exceeded due to different reasons: students with the same number of marks, students from abroad, especially students from the former Yugoslav republics, students who study at two faculties, etc. In the next year i.e. 2009/2010 the proposed number will be 70 students.

According to the present regulation the Veterinary Faculty has no influence in the selection of the candidates. They are chosen through a university procedure. The new Higher Education Act, which is in preparation, will probably change the system of selecting the candidates in a way to give more autonomy also to the faculties (similar to the system in Germany or Austria).

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

Up to 60 students can easily be provided for; there is enough space in the lecture rooms and students' laboratories. Clinical work is performed in small groups (5 students in one group, 2 students performing clinical practice). Due to a large number of students (70 students or more), problems appear due to the seating capacity (not enough places in the lecture room), too many small groups and overloading the assistants conducting the practical exercises.

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

The progress of students is measured not only through official exams but mostly by the numerous practical activities where students are present in small numbers (2-5) and therefore good and close contacts with the teaching staff can be established. Introducing the new, six year curriculum, the Faculty is striving to implement standardised methods for the assessment of student progress.

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

For years the number of students graduating yearly has been approximately 50. Due to the possibility that students can take a separate year to finish all the exams it is difficult to calculate the percentage of graduates per year. In the last 20 years (1989 – 2008) 72.72% of the admitted students graduated (the number admitted 1,344, number graduated 964); the status of graduates which can finish the exams in the next year, certainly prolongs the study period, and the majority of students take this

opportunity. Frequently this time is used for informal practical training or to meet their commitments which they failed to meet due to student exchange experiences.

### 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 number of students should be reduced to a maximum of 60 of them in the 1st class

- *the drop-out percentage and reasons, if known*

The percentage of students completely dropping out from the study is about 27% (1989-2008). The reasons for this are different: the study is too difficult, the wrong decision was made for the study, marriage and motherhood (for the girls), finding a job, etc.

With the information given on the informative day we try to give to the students as much as possible a real picture about the studies, especially about the practice in slaughterhouses and post-mortems, about work in the veterinary profession, the possibilities of employment, etc.

- *The average duration of the studies;*

The average duration of the study that goes over 7.0 years is too long. However, from Table 9.5B it is evident that things are slowly improving. Especially the possibility to take one year free after the last year is the main reason for this situation. Until now, the Veterinary Faculty has no influence on the student's decision to "prolong" the study for at least one year.

- *Other aspects.*

## 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, ten full-time posts plus two part-time posts at 50% plus one 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 an 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.*

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

	Budgeted posts (FTE)		Non-budgeted posts (FTE)		Total (FTE)	
	VS	NVS	VS	NVS	VS	NVS
<b>1. Academic staff</b>						
Teaching staff (total FTE)	23.57	4.08	6.92	0.20	30.49	4.28
Assistant (total FTE)	38.33	2.37	5.88	0.00	44.21	2.37
Academic staff (total FTE)	61.90	6.45	12.80	0.20	74.70	6.65
Research staff (total FTE)			5.32	3.24	5.32	3.24
Others (please specify) (FTE)			11.00	4.00	11.00	4.00
Total research FTE			16.32	7.24	16.32	7.24
Total FTE (VS + NVS)	68.35		36.56		104.91	
FTE providing last year's teaching	64.88		17.01		81.89	
<b>2. Support staff</b>						
a) Responsible for the care and treatment of animals	16.75		24.25		41.00	
b) Responsible for the preparation of practical and clinical teaching	14.47		71.53		86.00	
c) Responsible for administration, general services, maintenance, etc.	13.55		25.45		39.00	
d) Engaged in research work			2.00		2.00	
e) Others (please specify)			109.50		109.50	
Total support staff	44.77		232.73		277.50	
<b>3. Total staff</b>	<b>113.12</b>		<b>269.29</b>		<b>382.41</b>	

- ❖ *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 <sup>(1)</sup>		Technical (b+d+e)	Animal carers (a)	Admin. (c)
	VS <sup>(2)</sup>	NVS <sup>(3)</sup>	VS	NVS	VS	NVS	VS	NVS	VS	NVS			
Institute of Anatomy, Histology and Embryology	1.23		1.78				4.98		1.00		4.00		
Institute of Physiology, Pharmacology and Toxicology	1.02	1.32	1.93				2.05	1.25			3.00		
Institute of Pathology, Forensic and Administrative Veterinary Medicine	1.33		1.18				2.31				8.00		1.00
Institute of Microbiology and Parasitology			1.26		0.67		1.78		2.00	3.00	30.00		
Institute for Breeding and Health Care of Wild Animals, Fish and Bees			1.89								3.00		
Institute of Environmental and Animal Hygiene with Animal Behaviour			0.75				0.63				2.00		
Institute of Food Hygiene and Bromatology							2.58			1.00	18.00		1.00
Institute for the Health Care of Pigs							2.14					3.00	
Institute for the Health Care of Poultry			0.86				1.52		1.00			8.00	
Institute for Breeding and Health Care of Horses											8.00		
Institute for Hygiene and Pathology of Animal Nutrition			0.67				0.79				6.00		

Department name	Academic teaching staff										Support staff (see table 10.1)		
	Full professor		Associate professor		Assistant professor		Assistant		Other <sup>(1)</sup>		Technical (b+d+e)	Animal carers (a)	Admin. (c)
	VS <sup>(2)</sup>	NVS <sup>(3)</sup>	VS	NVS	VS	NVS	VS	NVS	VS	NVS			
Clinic for Surgery and Small Animals	3.79						9,80		3,00			14,00	
Clinic for Domestic Ruminants			2.23				3.30					3.00	
Clinic for Reproduction of Domestic Animals	1.00				1.01		6.45		4.00			8.00	
Centre for sustainable re-cultivation Vremščica												5.00	
Biotechnical faculty		0.90						0.92					
Faculty for Mathematics and Physics						0.29		0.20					
Teaching staff on contract	0,97			0,15		1,42							

<sup>1)</sup> please specify; <sup>2)</sup> veterinary surgeon; <sup>3)</sup> non- veterinary surgeon

❖ *Ratios: From the above data please delineate the following ratios*

Tab. 10.3: Ratios students/staff

		Denominator
R1:	$\frac{\text{No. total FTE in veterinary training}^3}{\text{No. undergraduate veterinary students}^2} = \frac{68,35}{359(463)} = \frac{1}{5.252(6.774)}$	<b>5.252 (6.774)</b>
R2:	$\frac{\text{No. total FTE at Faculty}^3}{\text{No. undergraduate veterinary students at Faculty}^2} = \frac{113.12}{359(463)} = \frac{1}{3.174(4.093)}$	<b>3.174 (4.093)</b>
R3:	$\frac{\text{No. total VS FTE in veterinary training}^3}{\text{No. undergraduate veterinary students}^2} = \frac{61,90}{359(463)} = \frac{1}{5.799(7.479)}$	<b>5,799 (7,479)</b>
R4:	$\frac{\text{No. total VS FTE in veterinary training}^3}{\text{No. students graduating annually}^2} = \frac{61,90}{48} = \frac{1}{0.775}$	<b>0,775</b>
R 5	$\frac{\text{No. total FTE academic staff in veterinary training}^3}{\text{No. total FTE support staff in veterinary training}^3} = \frac{68,35}{44,77} = \frac{1}{0.655}$	<b>0,655</b>

<sup>1</sup> applies only to those Faculties, which offer additional courses to the veterinary curriculum,

<sup>2</sup> Table 9.1      <sup>3</sup> Table 10.1

❖ *Outline how the allocation of staff to the Faculty is determined.*

The allocation of staff to the Faculty is determined by the Systemization of work places, which is approved by the University bodies and depends on the teaching, research and other programmes performed by the Faculty that represent the basis of financing.

❖ *Outline how the allocation of staff to the departments (or other units) within the Faculty is determined.*

The same principles apply for the allocation of the staff to the departments and other units within the Faculty.

Indicate whether there are difficulties in recruiting or retaining staff.

There are no great difficulties in recruiting or retaining staff but the possibilities are always connected with the present (annual) financial situation and valid state regulations of employment.

❖ *Describe (if appropriate) any relevant trends or changes in staff levels or the ability to fill vacancies over the past decade.*

Due to the formation of NVI as an organization unit of the Faculty and the consequent joining of former Veterinary institutions to the Faculty between the years 2001 and 2002, the staff enlarged by app. 130 collaborators (mainly professional and technical staff).

- ❖ *Indicate whether it is easy to employ additional staff using service income (e.g. from revenues from clinical or diagnostic work).*

The employment of additional staff using service income is as a rule temporary and made possible because of the positive financial situation, anticipated new activities or the unit's favourable financial balance ascertained annually.

- ❖ *Describe the regulations governing outside work, including consultation and private practice, by staff working at the establishment.*

Private outside work is regulated by competitive stipulations and is in principle not possible. In case of consultations, the dean has to issue special permission.

- ❖ *Describe the possibilities and financial provisions for the academic staff to:*

- *attend scientific meetings;*
- *go on sabbatical leave.*

The members of the academic staff have a certain individual sum available annually for participation in scientific meetings. These resources are provided at the level of the University from the so called Rector's fund. Besides these resources there is also the possibility of financing through research projects or through various forms of sponsorship. Junior research assistants have special funds available for these purposes. Regarding the Higher education law, within a six-year employment term, a teaching faculty member shall be eligible for in-depth advanced scientific study in the field of research for a maximum of 12 months. In such cases, the teaching load of a faculty member shall be reassigned, but shall not be increased by more than one third. Anyhow, such a possibility owing to the financial cadre's reasons is almost never exploited.

## 10.2 COMMENTS

- ❖ *Comment on the numbers of personnel in the various categories.*

The number of personnel in the various categories is limited by systematization, which is prepared following national standards for higher education, regulated by The Higher Education Act of the RS. It depends on the work load (hours of teaching, hours of practice, number of students, demands of the educational programme etc.) and must be recognized by the Committee for systematization at the University level. Regarding the demands of the educational programme of veterinary medicine, the maximum number of students in a group for practical teaching is, in some teaching subjects, considered too high.

- ❖ *Comment on the salary levels, especially those of academic staff in relation to the level of income in the private sector.*

The incomes of the academic staff are regulated by the law (Law on the system of incomes in the public sector) and are mostly lower in relation to the private sector.

- ❖ *Comment on the ease or difficulty of recruiting and retaining personnel.*

The possibility of new employment is only possible when a workplace becomes vacant (retirement, resignation). Because of relatively low salaries, especially those of academic staff, the interest for

recruiting and retaining positions are by younger personnel variable and depend on the enthusiasm and the foreseen perspective of an academic career. Theoretically, the possibility of new employment for personnel is possible by changes (enlargement) in the programme or by gaining new programmes. But this is not a reality in practice, what is evident from the financing of our enlarged (six year) new programme, for which the amount of state financing has stayed unchanged compared with the old – only five-year programme, which was also explicitly stated in the act of approval of the Ministry of Higher Education Science and Technology.

❖ *Comment on the percentage of veterinarians in the academic staff.*

The academic staff mainly comprises doctors of veterinary medicine. The proportion between veterinary academic staff (VAS) and non -veterinary academic staff (NVAS) is considered good and suitable from the professional point of view (FTE ratio = 61.90 VAS / 6.45 NVAS).

### 10.3 SUGGESTIONS

- The implementation of the new six year study programme, which includes a higher degree of students' practical work, has opened the need for the engagement of extra teachers for practical field teaching, which calls for state financing for the sixth year of the study. Namely, this new study programme has been recognised and allowed by the state, but the financing of the programme has not changed and has remained as it was previously (financing for five years only).
- Efforts to stimulate younger academic staff to more quickly achieve the position of assistant professor or the associated professor degree, especially in the departments where such systematized places are not covered, must become one of the priorities of the cadre's policy.

**11 CONTINUING EDUCATION****11.1 FACTUAL INFORMATION**

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

Different forms of continuing education, mainly represented by shorter (1 to 2 days) special courses and workshops in the field of animal husbandry, health protection of different animal species, nutrition of different animals, actual problematic and novelties in veterinary practice etc., are organized at the Veterinary Faculty. The responsibility for this field of education is in the hands of the Centre for Permanent (life-long) Learning at the Veterinary Faculty. Between 2000 and 2008 an average of 30 such courses were organized yearly. The participation in these courses, workshops and symposia is considered one of the various conditions for the issue of a concession or license.

**Centre for Permanent (life-long) Learning – education of veterinarians****Seminars executed in 2008 (16 seminars with 486 participants in total)**

Reg. No.	Date of execution	Title of seminar
6.	January 12. 08	Gained (acquired) diseases of valves - novelties
1.	April 10. 08	Health protection of animals in large populations
2.	April 19. 08	Unsuitable quality of milk – problem solving
3.	May 15. 08	Laboratory diagnostics of mastitis
20.	May 17. 08	Urgent medicine for dogs and cats 1st. part
14.	May 29. 08	Haematological and biochemical examinations of blood in diagnostics of ruminant diseases
7.	May 31. 08	Orthopaedics of small animals
27.	June 19. 08	Introduction of the programme for the eradication of IBR/IPV
18.	September 24. 08	Assisted reproduction of carnivora II.
5.	September 27. 08	Use of ultrasound in reproduction 1st. part
13.	October 11. 08	Videotoscopic detection of external otitis in dogs
19.	October 27. 08	Possibilities and presentation of sorted and (by sex) separated semen use
26.	November 28. 08	External otitis 1st. part
32.	November 28. - 29. 08	Programme for approved veterinarians
32.	December 1. - 2. 08	Programme for approved veterinarians
32.	December 8. - 9. 08	Programme for approved veterinarians

The general programmes of the organization of continuing professional development and the standards for preserving specialist status and license registration are, regarding the Rules for probation, performance of state examination and permanent professional development in the veterinary service (OG RS No. 1/09.01.1998), within the competence of the Veterinary Administration of the Republic of Slovenia and the Veterinary Chamber. The educational areas and

other required details are to be defined and the annual programme approved by the mentioned bodies and later the accepted programme presented on their web sites.

Under the umbrella of the Centre for Permanent (life-long) Learning there also operates the Board for the Education of Non-Veterinary Workers dealing with the education of those working in the veterinary field .

**Centre for permanent (life-long) learning -education of breeders and other non-veterinary workers**

**Courses executed in 2008** (16 courses with 610 participants in total)

Reg. No.	Date of execution	Title of seminar
25.	January 17 and 18. 08	Course for slaughterhouse workers – protection of animals during stunning and slaughtering
9.	January 17. 08	Course for keepers and owners of animals – cattle breeders
1.	January 19. 08	Educational programme for zoo markets
13.	February 21. 08	Course for keepers and owners of animals – swine breeders
28.	March 15. 08	Course of sampling – sampling for the needs of milk quality control
25.a.	April 14. and 15. 08	Course for slaughter- house workers – protection of animals during stunning and slaughtering
29. a	June 12. 08	Diagnostics and treatment of mastitis
30.	September 6. 08	Problems of wildlife breeding – parasites
31.	September 15. 08	Round table - Eradication of varoa by Flumetrin
29.b	October 4. 08	Course for keepers and owners of animals – hoof-treatment
14.	November 8. 08	Use of antimicrobial and antiparasitic drugs in farm and pet animals.
22.	November 18. 08	Programme for owners of breeding animals for registration of admission stations
31.	November 25. 08	Course for slaughter-house workers
31.	December 6. 08	Course for slaughterhouse workers
33.	December 16. 08	Health protection of bees – Course 1. Winter eradication of varoa by oxalic acid

In addition to the courses held within the Faculty, we organize or cooperate in the organization of different extramural symposia, colloquia etc. Several national symposia take place yearly. Every year in the autumn, traditional scientific meetings are organized in cooperation with veterinary or other associations dealing with the most real life problems of the veterinary profession, including education. . The professors and lecturers from the Veterinary Faculty are invited to present lectures at these meetings and to chair scientific and professional sessions. The Professional Sections from the Veterinary Chamber of Slovenia also organize various continuing education programmes or lectures each year in which the staff of the Veterinary Faculty - having the leading role - participate.

**11.2 COMMENTS**

- ❖ *Comment on the quality of the continuing education programmes in which the Faculty is involved.*

In the last ten years of the Permanent (life-long) Learning execution, the continuing education programmes in which the Faculty is involved are gaining quality and interest.

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

Every year around 500 veterinarians (one half of all active veterinarians in Slovenia) are involved in the continuing education programmes prepared by the Faculty Centre for Permanent (life-long) Learning and 600 to 700 participants are educated within programmes for breeders and non-veterinary workers.

**11.3 SUGGESTIONS**

Even though the cooperation with the Veterinary Administration of the Republic of Slovenia and the Veterinary Chamber in the field of continuing education is good and in progress, we must achieve still better cooperation with both the mentioned organizations regarding the definition of the educational needs of their members, the education areas and other required details that will enable the preparation and execution of programmes with increased quality and interest.



## 12 POSTGRADUATE EDUCATION

- ❖ *This heading covers all further training leading to a diploma - special postgraduate studies, PhD 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

Several years ago at the level of the University of Ljubljana it was stated that the postgraduate education programmes are mainly represented by inflexible models of 1-2 year specialization curricula, 1-3 or even 4 year MSc programmes and 3-5 year PhD programmes. These, in many instances rather petrified the structured curricula and were neither suitable for the development of interdisciplinary study programmes, nor for the introduction of unified quality monitoring or for the introduction of the credit units system. Quality monitoring was mostly performed by students who filled in questionnaires and applied statistical observations all at the level of the departments or faculties. The results were discussed at the faculty level but no affirmative actions were taken. It remained only a soft means for quality comparison but not enforcement.

#### **Postgraduate Education Programme "BIOMEDICINE"**

In 1998/1999, the University in Ljubljana started the preparation of the postgraduate education programme BIOMEDICINE following the European Credit Transfer System (ECTS) regulations. The postgraduate programme of BIOMEDICINE was officially introduced in the autumn 1999 and was the first inter-disciplinarian programme prepared and implemented at the level of the University. It includes the knowledge of biochemistry, molecular and cell biology, pharmacy, medicine, veterinary medicine and other connected sciences. Earlier, the education for a master and doctor of science degree was performed by independent or inter-disciplinarian programmes only at the level of the faculties - members of the University in Ljubljana. Since the scientific field of Biomedicine has many branches and the parts are developed in different faculties - members of the University of Ljubljana - it was adequate and convenient to gather and connect the related postgraduate programmes of single faculties by content and organization into one universal educational programme at the level of the University. Such a way enables a broader link between teachers and researchers of different university members and scientific institutes as well as a deeper and more successful scientific cooperation. The programme includes all the scientific disciplines of the Medical Faculty, the Faculty for Veterinary Medicine and the Faculty for Pharmacy, while the Biotechnical Faculty and the Faculty for Chemistry and Technology enter with disciplines connected with the biomedical field of knowledge. By realizing this programme, the experts with university habilitation employed in different Scientific Institutes also participate as teachers or tutors. The credit system evaluation enables direct inclusion into the international exchange of students and teachers within the countries using ECTS or similar postgraduate evaluation systems.

The educational programme for the MSc degree lasts for 2 years, comprising 120 credits (1 credit = 3 hours) from which 25% must be done by pure research work. The programme for DSc degree lasts for 4 years. To attain a DSc degree the candidate must: collect a total of 240 credits; achieve an MSc degree; submit and defend the DSc thesis. The programme also enables an MSc to DSc programme direct transfer.

The registration was permitted for the candidates who concluded a university education in the biomedical field with an average estimation of 8.0 or more. By acceptance of candidates with a lower average estimation, additional criteria - professional achievements, scientific publications, student research awards, high diploma estimations (9 or 10) are considered.

The teaching is divided into four types of subjects - basic subjects (total of 15), elective theoretical subjects (total of 68), elective methodological subjects (total of 33) and elective individual research subjects (total of 77).

Because of the programme change and up-dating (see II: University Doctoral Programme "Biomedicine") a moratorium for finishing studies by this programme has been fixed.

#### **University Doctoral Programme "Biomedicine"**

The introduction of the Doctoral Programme in BIOMEDICINE was dictated for many reasons, two major ones being the implementation of the Bologna Declaration in the Republic of Slovenia and new state legislation, which separates doctoral programmes from master's programmes. Besides the above-mentioned, the important goal of the programme was also to obtain better student mobility. The full preparation of the new Doctoral Programme at the University and Faculties level started in October 2005. It was verified at the University of Ljubljana and the Committee for Higher Education of the Republic of Slovenia in 2007 and was implemented by the first admission in autumn 2007.

The primary emphasis of doctoral study is on research, interdisciplinary and collaboration between internationally renowned local and foreign experts. Based on the recommendations of the European University Association (EUA), an international student exchange is also foreseen. As the end result of the research work, the publishing of at least one scientific article is expected. Special emphasis is placed on the productive relationship between the doctoral candidate and his/her mentor. Students can choose mentors from amongst internationally recognized and established experts in compliance with the rules of the University of Ljubljana and collaborating faculties.

The duration of the Doctoral Programme in Biomedicine is three years (180 ECTS credits), and according to the Bologna guidelines this represents the third level of the educational scheme. The programme has been conceived in agreement with all the requirements and legislation of the Republic of Slovenia and meets all criteria for doctoral study established by the EUA.

The programme is organized by the University of Ljubljana through its faculties and three Slovene research institutes and consists of organized classes (60 credits) and individual research work for the doctoral thesis (120 credits) and leads to the degree of Doctor of Science in the following scientific fields:

- Biochemistry and Molecular Biology
- Pharmacy
- Genetics
- Clinical Biochemistry and Laboratory Biomedicine
- Basic Medicine
- Clinical Medicine
- Microbiology
- Social Medicine
- Toxicology
- Veterinary Medicine

The funding of the programme is ensured in two modes: by prescribed tuition and by competing for funds at the Ministry of Higher Education, Science and Technology who yearly announce requests for proposals for co-funding of postgraduate study programmes. In this proposal many quality measures have to be fulfilled before funding is approved which represents an instrument of external influence and quality assurance. The tuition is mainly obtained by students through stipends, self payment or

company and institutions approval. This represents the free economy and society's external influence.

Detailed data of the Doctoral Programme in Biomedicine and data about admission requirements and criteria for the selection of candidates, expected number of doctoral candidates, conditions for progress in the programme, conditions for completing the programme, possibilities of transfer between study programmes etc., are available at

[http://www.uni-lj.si/en/study\\_at\\_the\\_university/postgraduate\\_studies.aspx](http://www.uni-lj.si/en/study_at_the_university/postgraduate_studies.aspx)

#### **Interdisciplinary Doctoral Programme in Environmental Protection**

The interdisciplinary Doctoral Programme in Environmental Protection at the University of Ljubljana links together experts from various faculties and departments with the common interest of protecting the environment. The programme was evaluated according to the European Credit Transfer System (ECTS), thus allowing students and lecturers to participate in international exchange schemes in the countries where ECTS or some other comparable system is implemented. The duration of the programme is three years (180 ECTS credits). The doctoral programme results in the degree of Doctor of Science including five different study orientations: natural science, technical science, biotechnical science, medicine and social science and humanities. The programme is organized by the University of Ljubljana through its 13 faculties, one of the participating faculties is the Veterinary Faculty.

Detailed data of the Doctoral Programme in Environmental Protection and data about admission requirements and criteria for the selection of candidates, expected number of doctoral candidates, conditions for progress in the programme, conditions for completing the programme, possibilities of transfer between study programmes etc., are available at

[http://www.uni-lj.si/en/study\\_at\\_the\\_university/postgraduate\\_studies.aspx](http://www.uni-lj.si/en/study_at_the_university/postgraduate_studies.aspx)

#### **12.1.1 CLINICAL SPECIALTY TRAINING (INTERNS AND RESIDENTS)**

Table 12.1.1: Clinical specialty training – not applicable

**12.1.2 RESEARCH EDUCATION PROGRAMMES**

Table 12.2: Number of research students enrolled in different programmes

Type of degree	Full time*	Part time	Duration
Ph.D.	22	14	Postgraduate education programme Biomedicine- 4 years  Doctoral Programme in Biomedicine- 3 years Interdisciplinary Doctoral Programme in Environmental Protection 3 years
Other doctoral level <sup>1)</sup> Master degree	2		Postgraduate education programme Biomedicine- 3 years

1) please specify

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

\* they receive a grant from the Ministry of Higher Education, Science and Technology of the Republic of Slovenia.

**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.*

The study year 2007/2008 was the first year when the Doctoral Programme in Biomedicine (3 years duration) was introduced. In this study year, 6 students were enrolled in the first year. In comparison with the Postgraduate education programme Biomedicine (4 years duration) in which the last enrolment was in the study year 2006/2007, the number of enrolled students was 50% lower, although the number of disposable places was the same (20). This lower level of interest is most probably due to higher standards and the greater intensity of study, which must be concluded in three years.

The new postgraduate study programme - the Doctoral Programme in Biomedicine is very intensive. Due to the fact that only one candidate successfully passed all the requirements of the first year, in the near future the programme should be appropriately redesigned. On the other hand, the student flow of the old postgraduate education programme stayed at the same level as in previous years.

**12.3 SUGGESTIONS**

The Doctoral Programme in Biomedicine should be appropriately redesigned.

Because of the great interest of practitioners, Clinical specialty training should be introduced in the near future.

## 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*

Research experience is offered to students during their undergraduate training, for example through special research projects which are designed to fulfil the criteria for student's competitions for renowned prizes such as the students' Prešeren's award or Krka's (leading Slovenian pharmaceutical industry) award. Although student research is autonomous work, it is usually a part of the pre-existing covering research project, so that the results of the students' research implement the work done by other researchers in the covering research project which is part of one of the well established general programmes as is evident from the achievements of the researchers described below.

Covering research projects at the Veterinary Faculty are organised and included in two research programmes. The first one with the title "Endocrine, immune and enzyme responses in healthy and sick animals" and the second, with the title "Animal health, environment and safe food". The aim of such an organisation is to promote the collaboration and stimulate the transfer of knowledge among the institutes dealing mostly with basal research and clinics oriented towards applied clinical work. Within the research group of the first programme, seven international and thirteen bilateral projects were performed in the last two-year period. Two master and five doctoral degrees were achieved. Candidates finishing the master degree were employed in business enterprises, those with doctor degrees were employed at the Veterinary Faculty. The transfer of knowledge is evident in graduate and in post-graduate programmes running at the Veterinary Faculty in Ljubljana, in which all members of the group participate.

The transfer of knowledge is also evident from clinical–research work. Many members of the group have had invitations to give lecture at foreign veterinary or medical faculties or scientific meetings. In the last two year period, members of the group have published 142 scientific papers, where the results of student research work were also an important addition.

In the frame of the second research programme 'Animal health, environment and safe food' a lot of attention in the past has already been assigned to animal health, to the quick detection and disabling of the spread of contagious diseases, to animal welfare, to quality environment as well as to safe and quality foods and fodders. Researchers also include their knowledge in educational work both at the undergraduate level at the University of Ljubljana (Veterinary and Biotechnical faculty, Professional College for Health Sciences) and at the post graduate studies at the UL (Biomedicine, Environmental protection).

Researchers of the programme group every year successfully apply for tenders for new research assistants. PhDs that have concluded their training successfully within the framework of the programme group are now employees at the Veterinary Faculty. Some of them are also employed by governmental offices and the enterprise sector. Within the framework of research groups they are developing new research fields, for which they are educated both at home and abroad, through the contacts with recognized foreign researchers and institutions. Members of the research group are publishing their research work successfully in recognized scientific journals with great effect and also present their research at scientific and professional conferences at home and abroad. In the last two year period, members of the group have published in total 159 original scientific articles and 13 scientific review articles, results of the students research work is making an important addition to existing knowledge.

At any stage of their research, undergraduate students are therefore guided by a well educated and experienced researcher and teacher (mentor) and the best and most interested of them are usually

invited to apply for a researcher position once they have graduated, as there are programmes such as the “Young Researchers Programme” sponsored by the Slovenian government, which enable young graduates to continue with their research work.

### 13.1 FACTUAL INFORMATION

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

Students who are interested, have relatively good opportunities to participate in research work. Every year a call for an application for student's research is advertised by a university board. Students can apply for research work and under the mentor's guidance finish the research in one or two years. After a positive evaluation by two reviewers, the student's work can receive a university or faculty award (Prešeren's award for students' research work).

Depending on the year, about 3-5% of undergraduate students are involved in research work. Mostly they work on their projects for 1 or 2 years while they collect samples or follow clinical cases. They are usually invited to perform a specific study, but they are independent, although guided, in collecting and reading appropriate literature. Their research work is divided in phases, with samples/cases collection and report writing making at least 2-6 months of intensive work.

Their work should (must) result in a written report, which is usually designed to fulfil the criteria for a student competition, but most of the student research work is expected to also result in an independent scientific paper or in a part of a more comprehensive paper by the research group.

### 13.2 COMMENTS

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

Student research projects are always designed as an autonomous work, where their ambitions and personal scientific interests can be realised and new skills learned. However, the students are limited to choose their research field within those research fields where there is a pre-existing covering research project running. Students are therefore made familiar with the basics of the covering research project, but are expected to become deeply engaged in a very specific scientific problem ending with specific and innovative results that implement the work of the whole research group. Students are encouraged to get involved in basic research, but there are several possibilities to run clinical studies and applied-science studies as well.

### 13.3 SUGGESTIONS

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

There are several themes from different research fields offered to students every year. However, as previously mentioned, the calls are limited to already existing covering projects. The idea therefore is to enable students to spend an amount of time dedicated to research abroad, at other universities or enterprises, where they can be involved in other basic or applied-science covering research projects and their work abroad is later recognised through the credit transfer system at the parent university. Through such networking not only the students profit, but also all the participating institutions have the opportunity to implement their own research work.

Probably the introduction of diploma work would improve the ability of a doctor of veterinary medicine of writing research papers.

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Students that have successfully completed an undergraduate research project should also be more frequently considered and invited to become active researchers as employees at the Veterinary Faculty and/or government through different projects such as the “Young Researchers Programme”.