Tierärztliche Fakultät
Ludwig-Maximilians-Universität München
Self Evaluation Report
In the Middle Ages, horses played a dominant role in veterinary medicine. This illustration shows the so called „Aderlaß-Rösslein”, where major venesection sites for various diseases are depicted.

Entrance gate of the Veterinary Faculty.

The signet of the veterinary Faculty illustrates the former entrance of the faculty. It was constructed in 1790 as gate to the newly established „Veterinary School” at the area of the „Jesuiter wash”.

CONTENTS

1 INTRODUCTION ................................................................................................. 5

  1 Organisation .................................................................................................. 5
  2 Teaching ......................................................................................................... 6
  3 Equipment and facilities .............................................................................. 7
  4 Major problems encountered by the Faculty ............................................. 8

1 OBJECTIVES .................................................................................................... 10

  1.1 Factual Information .................................................................................. 10
  1.2 Comments .................................................................................................. 10
  1.3 Suggestions ............................................................................................... 11

2 ORGANISATION ............................................................................................. 12

  2.1 Factual Information .................................................................................. 12
  2.1.1 Details of the establishment ................................................................ 12
  2.1.2 Appointment rules, responsibilities and functions of administrative bodies .............................................................. 13
  2.1.3 Faculty’s relation to the University and other ministerial structures ..... 16
  2.1.4 Institutions of the Faculty ................................................................... 18
  2.2 Comments .................................................................................................. 23
  2.3 Suggestions ............................................................................................... 24

3 FINANCES ........................................................................................................ 25

  3.1 Factual Information .................................................................................. 25
  3.1.1 General information ............................................................................ 25
  3.1.2 Financing of the Department of Veterinary Sciences ....................... 27
  3.1.3 Financing of the Centre for Clinical Veterinary Medicine ............... 30
  3.1.4 Financing of the Livestock Centre Oberschleissheim ....................... 32
  3.1.5 Tuition fee ................................................................................................ 33
  3.2 Comments .................................................................................................. 34
  3.3 Suggestions ............................................................................................... 35
4 CURRICULUM.................................................................................................36

4.1 Factual Information ..................................................................................36
4.1.1 Categories of subjects and types of training ...........................................37
4.1.2 Undergraduate curriculum followed by all students ...............................38
4.1.3 Further information on the curriculum ..................................................45
4.1.4 Pre-clinical Training ............................................................................46
4.1.5 Clinical Training ..................................................................................46
4.1.6 Training in Veterinary Pathology ..........................................................52
4.1.7 Specific information on the practical training in food hygiene/public health ......................................................................................................53
4.1.8 Obligatory extramural work ..................................................................55
4.1.9 Ratios ....................................................................................................57
4.1.9.1 General indicators types of training ..................................................57
4.1.9.2 Special indicators of training in food hygiene/public health ..........57
4.2 Comments ...............................................................................................57
4.3 Suggestions ..............................................................................................58

5 TEACHING AND LEARNING: QUALITY AND EVALUATION .........59

5.1 Factual Information .................................................................................59
5.1.1 The teaching programme ....................................................................59
5.1.2 The teaching environment ...................................................................62
5.1.3 The examination system ......................................................................62
5.1.4 Evaluation of teaching and learning ....................................................67
5.1.5 Student welfare ....................................................................................68
5.2 Comments ...............................................................................................71
5.3 Suggestions ..............................................................................................72

6 FACILITIES AND EQUIPMENT .................................................................73

6.1 Factual Information .................................................................................73
6.1.1 Premises in general .............................................................................73
6.1.2 Premises used for clinics and hospitalisation .......................................76
6.1.3 Premises for animals for teaching purpose ...........................................79
6.1.4 Premises used for theoretical, practical, and supervised teaching ..........82
6.1.5 Diagnostic laboratories and clinical support services..........................85
6.1.6 Slaughterhouse facilities ......................................................................86
6.1.7 Foodstuff processing unit .....................................................................86
6.1.8 Waste management .............................................................................87
6.1.9 Major building work since 2002 and future changes ..............................87
6.2 Comments ...............................................................................................87
6.3 Suggestions ..............................................................................................88
7 ANIMALS AND TEACHING MATERIAL OF ANIMAL ORIGIN....89

7.1 Factual Information .................................................................................................................. 89
7.1.1 Anatomy .................................................................................................................................. 89
7.1.2 Pathology .................................................................................................................................. 90
7.1.3 Animal production .................................................................................................................. 92
7.1.4 Food hygiene / public health .................................................................................................. 92
7.1.5 Consultations and patient flow services ................................................................................. 92
7.1.5.1 Consultation ....................................................................................................................... 92
7.1.5.2 Patient flow .......................................................................................................................... 94
7.1.6 Vehicles for animal transport ................................................................................................. 95
7.1.7 On-call emergency service ..................................................................................................... 95
7.1.8 On-farm teaching and outside patient care ............................................................................. 95
7.1.8.1 Ambulatory (Mobile) Clinic ............................................................................................... 95
7.1.8.2 Other on-farm services and outside teaching ...................................................................... 96
7.1.9 Additional information on clinical facilities ........................................................................... 97
7.1.10 Other Species ....................................................................................................................... 100
7.1.11 Ratios ................................................................................................................................. 101
7.2 Comments and Suggestions ...................................................................................................... 102

8 LIBRARY AND LEARNING RESOURCES .............................................................................. 103

8.1 Factual Information .................................................................................................................... 103
8.1.1 Library ...................................................................................................................................... 103
8.1.2 Information technology services ............................................................................................ 106
8.2 Comments ..................................................................................................................................... 111
8.3 Suggestions .................................................................................................................................. 111

9 ADMISSION AND ENROLMENT .......................................................................................... 112

9.1 Factual information .................................................................................................................... 112
9.1.1 Undergraduate student numbers ............................................................................................. 112
9.1.2 Student admission ..................................................................................................................... 112
9.1.3 Student flow .............................................................................................................................. 114
9.2 Comments and Suggestions ....................................................................................................... 116

10 ACADEMIC AND SUPPORT STAFF ...................................................................................... 118

10.1 Factual Information .................................................................................................................... 118
10.2 Comments .................................................................................................................................... 123
10.3 Suggestions .................................................................................................................................. 124
11 CONTINUING EDUCATION ................................................................. 125
  11.1 Factual Information ...................................................................... 125
  11.2 Comments and Suggestions ....................................................... 126
12 POSTGRADUATE EDUCATION ...................................................... 127
  12.1 Factual Information ...................................................................... 127
  12.1.1 Specialisation ........................................................................... 127
  12.1.2 Research education programmes ............................................ 128
  12.2 Comments and Suggestions ....................................................... 130
13 RESEARCH ................................................................................... 131
  13.1 Factual Information ...................................................................... 131
  13.1.1 Research activity at the Veterinary Faculty ............................... 131
  13.1.2 Involvement of undergraduate students in research ............... 132
  13.2 Comments and Suggestions ....................................................... 133
A Annex .......................................................................................... 134
  A1 Summary of Ratios ....................................................................... 134
  A2 Ordinance concerning the Certification of Veterinary Surgeons .... 136
  A3 Prüfungs- und Studienordnung ................................................... 159
I INTRODUCTION

The Faculty of Veterinary Medicine of the University of Munich (Ludwig-Maximilians-Universität; LMU) was last evaluated and approved by the European Association of Establishments for Veterinary Education in 2002.

The following chapter gives an overview of the important changes in the faculty that have taken place since 2002 in the following fields

- Organisation
- Teaching
- Facilities and Equipment

I1 ORGANISATION

Establishment of departments

In 2008, the Department of Veterinary Sciences was established which includes all pre-clinical institutions of the faculty. In 2009, the Centre for Clinical Veterinary Medicine was formed including all clinics and the Institute of Veterinary Pathology.

The main objectives of this reorganisation were

- to improve teaching by enhancing cooperation between institutions
- to enhance collaboration in research projects
- to facilitate common use of equipment, diagnostic and scientific laboratories
- to allow for more flexibility in allocation of personnel and funds

Reorganisation of Clinics

In 2005, species-oriented clinics were established. This allows better use of facilities (especially in large animal clinics) and improves service for clients. The following Clinics have now been established in the Centre for Clinical Veterinary Medicine

- Clinic of Small Animal Surgery and Reproduction
- Clinic of Small Animal Medicine
- Clinic for Horses
- Clinic for Ruminants with Ambulatory and Herd Health Services
- Clinic for Swine
- Clinic for Birds, Reptiles, Amphibians and Ornamental Fish
- Institute of Veterinary Pathology

Office for Student Services

In December, 2007, an Office for Student Services with a study course coordinator was established at the faculty. Its main function is to provide advisory service and guidance for students on questions and problems during their course of study.
INTRODUCTION

One of the important tools to organize the curriculum is Coremato (Course Registration Management Tool), which is the faculty’s online system to organise the allocation of students to compulsory and elective subjects and the different courses of Clinical Education: Students have the opportunity to express their preferences regarding the time course of their Clinical Rotation blocks. With the aid of this online tool, almost all preferences of students can be accommodated.

Implementation of a central IT-Group

Since 2007, the Faculty’s central IT-Group provides a service for the entire faculty and all students. What was before in the hands of individuals in the various institutions is now a highly professional central service.

Reorganisation of the Livestock Centre Oberschleissheim

This institution was so far led by the professor of Animal Genetics and Husbandry (Chair: Prof. Dr. Dr. Martin Förster) as the executive director and the Dean of the Faculty. As of January 1st 2012, the executive board is composed by four professors (two from each department) and the Dean. With this change the Clinic for Ruminants and the Clinic for Swine will be represented in the Executive Board of the Livestock Centre.

I2 TEACHING

Hands-on clinical education

In 2005, our school was the first among the five veterinary faculties in Germany to introduce a strictly hands-on clinical education (Clinical Rotation). Students spend more than 700 hours in the various clinics. The Clinical Rotation was implemented with the ambition to improve the clinical teaching and, consequently, the so-called “day-one competencies” of the students.

The exact course of the Clinical Rotation is described in chapter 4.1.3 (further information on the curriculum).

Written exams, Objective Structured Clinical Examination (OSCE)

Written exams (single choice answers) have been implemented in a number of subjects to provide a more objective and transparent environment. In the clinical subjects, split exams have been introduced with written exams scheduled exactly before the start of the Clinical Rotations to ensure that students start the Clinical Rotations with a thorough theoretical knowledge. In two subjects, Objective Structured Clinical Examinations (OSCE) have been introduced.

E-learning

The Faculty has made tremendous progress in establishing a Learning Management System with the idea to centralise teaching materials, e-learning applications for computer based learning, and video and audio contents of the various clinics and institutes. A full-time e-learning service person was hired in October, 2009, who is
in charge of the strategy of the Learning Management System and is integrated into the Faculty’s IT service group for best communication.

**Library**

Although plans to expand the old faculty library (which was a matter of concern during the last evaluation) could not be realised, the situation has been vastly improved due to organizational changes: The library is now responsible only for providing textbooks (total 8500) for students for home-study or use on the campus. Up to 105 copies of a particular textbook are available for students. A total of 1400 different textbooks (including e-books) are available. All relevant scientific journals are now available online in the campus intranet.

**I3 EQUIPMENT AND FACILITIES**

The Faculty Council decided in December, 2010, to move all facilities to the new Campus in Oberschleissheim. Although this is a long-term commitment, this policy will be the basis for:

- new up-to-date training facilities
- improvement of collaboration between institutes in research and teaching
- strengthening of corporate identity by creating core facilities such as library or cafeteria for students and employees

As a first step, the Bavarian State Ministry of Sciences, Research and the Arts has decided to finance buildings for a lecture hall (capacity 300 students), a cafeteria and facilities for the Institute of Infectious Diseases and Zoonoses on the new Campus Oberschleissheim.

The University welcomes the plans of the Faculty. The University will use our old Campus to concentrate on this site many of the presently widely distributed facilities in the faculty of physics.

**Development of the Campus Oberschleissheim**

The new clinical facilities for ruminants and for pigs on the new Campus in Oberschleissheim were under construction at the time of the last evaluation in 2002. They were opened in the fall of 2003 and provide up-to-date facilities (see Chapter 6).

Premises within walking distance from the new Campus in Oberschleissheim had been acquired by the university in 2000. After extensive renovation, the Chair for Animal Nutrition and Dietetics as well as the Institute of Food Science (two chairs) were moved from the central Campus to the new location in 2003.

**New clinical facilities**

Since April, 2011, the Centre for Clinical Veterinary Medicine has a radiation oncology unit. A modern linear accelerator with Multi-Leaf-Collimator (MLC) and Intensity-Modifying-Radiation-Therapy (IMRT) was installed. Radiation oncology is
the last step to complete the oncology service with its units medical oncology and surgical oncology. The project was financially supported by the DFG (German Research Foundation). A team of 8 veterinarians works in the medical and radiation oncology service.

Due to reorganisation of the clinics, the clinical facilities for reptiles, amphibians and ornamental fish were moved from their former location in Kaulbachstrasse (next to the old Campus) to a new building as an extension to the already existing Clinic for Birds.

Within the Livestock Centre in Oberschleissheim a new building for the clinical education in reproduction has been built which replaces rather old facilities on the satellite Campus Oberwiesenfeld.

Computer facilities for students

New computer labs both at the Campus Englischer Garten and in Oberschleissheim have been established. A platform was created to provide students with computers, scanners, printers, and Internet access. At the time of enrolment to the university, each student receives a campus identification and a SmartCard that opens the doors to the computer labs and that allows to log onto one of the computers 24 hrs a day. In addition, WLAN is available on the entire Campus.

I4 MAJOR PROBLEMS ENCOUNTERED BY THE FACULTY

The following critical points stated during the last evaluation by EAEVE in 2002 could be solved:

- A major concern in 2002 was the system of clinical education. Since the introduction of the Clinical Rotation, students are exposed to hands-on clinical training and the final year of the veterinary course is lecture-free and organised as full-time rotations in clinical and applied fields.
- The Department of Veterinary Science and the Centre for Clinical Veterinary Medicine were established facilitating coordination of teaching activities and a more flexible deployment of staff
- A Faculty Curriculum Committee has been established in order to implement a policy where the Faculty has the priority in the organisation and coordination of the curriculum.
- Epidemiology is now offered as an independent subject by the Institute of Infectious Diseases and Zoonoses.
- Written examinations and Objective Structured Clinical Examinations have been introduced.

The following points stated during the last evaluation in 2002 could not be solved due to federal regulations or regulations at the university or faculty level:

- The Faculty is located on two sites (Englischer Garten and Oberschleissheim) almost 15 kilometres apart. Although the Faculty has made a decision to move
all facilities to Oberschleissheim, the current situation will last for many years to come.

- The Dean has to be elected for a period of two years. This cannot be changed. However, the current Dean has held office since 2007 thus providing more efficiency and continuity (see Chapter 2).

- Due to the fact that the Faculty as part of the University is subordinate to the Bavarian State, the income generated by the clinics cannot be fully retained (see Chapter 3, Table 3.3). Apart from this problem, we feel rather privileged in terms of funding. The system of allocating funds prevented us from cuts during the last years which have been quite severe in other countries or other federal states of Germany.

- The admission requirements and the number of students to be accepted per year cannot be changed by the Faculty due to federal law.
1 OBJECTIVES

1.1 FACTUAL INFORMATION

In accordance with the Ordinance of Veterinary Licensure (Tierärztliche Approbationsverordnung; TAppV), the Faculty’s mission is to educate academically and practically trained veterinary surgeons who can practise the veterinary profession responsibly and independently. They should be capable of undergoing continuing professional development and formal specialisation (Weiterbildung).

To achieve this goal the Faculty has to provide:

- the fundamental veterinary, scientific, interdisciplinary and methodological skills,
- practical skills,
- spiritual and ethical foundations, and
- a professional attitude committed to the well-being of humans, animals and the environment

These statements can be summarized in one sentence:

The mission of the Veterinary Faculty is to advance the health and well-being of animals and people through education, research and public service.

Most importantly, the curriculum aims to fulfil the EU requirements for veterinary training (EU Directive 2005/36/EC). This directive outlines the principles of veterinary education which is based on scientific grounds as well as proven experience thus preparing the graduates for life-long learning. The education does not concentrate only on the treatment of diseases but also on preventive veterinary medicine, animal welfare and veterinary public health.

Strategic decisions, including reviews of the objectives of the Faculty, are made by the Faculty Council, which is chaired by the Dean. Because the overall objectives have been broadly set, the need to revise them is infrequent. The evaluation procedure by EAEVE is an additional important opportunity to assess the achievement of the Faculty’s general objectives.

The requirements for veterinary education laid down in the TAppV and the EU Directive are further complemented by the Teaching and Examination Rules (see Annex). These rules were worked out by the Dean for Student Affairs together with the Faculty Curriculum Committee and subsequently discussed and approved by the Faculty Council. The last update of these regulations came into effect in 2011.

1.2 COMMENTS

Since the last evaluation, the major change in the curriculum was the establishment of a strictly hands-on clinical education. One of the major tasks of the following years was the need to adapt and fine-tune this system. In the meantime, the implementation of written exams and new ways of examination like OSCE were the
major points of discussion in the Faculty. In addition, e-learning and e-assessment are being developed.

In our view, the Faculty meets the demands of national and European regulations on veterinary education. Our major strengths are good facilities, a very good research record, a well organised teaching programme and an extensive hands-on clinical education programme, in particular.

Our major weakness is the existence of two main campus sites (and two or three smaller satellites) which require faculty and students to travel back and forth.

What we think is a strength, our broad educational approach, may be called a weakness by others who favour an early specialisation (tracking) during the course.

1.3 SUGGESTIONS

Our aim is to develop the new Campus Oberschleissheim as soon as possible.
2 ORGANISATION

2.1 FACTUAL INFORMATION

2.1.1 DETAILS OF THE ESTABLISHMENT

Faculty of Veterinary Medicine, Ludwig-Maximilians-Universität München

Address: Veterinärstrasse 13
80539 Munich
Germany
Telephone: 089 / 2180-2512
Fax: 089 / 349799
E-mail: dekanat08@lmu.de
Website: www.vetmed.uni-muenchen.de

Dean’s Office

- Dean:
  Prof. Dr. Joachim Braun
  Term of office: October 1\textsuperscript{st}, 2011 – September 30\textsuperscript{th}, 2013

- Vice-Dean:
  Prof. Dr. Dr. h.c. Erwin Märtlbauer
  Term of office: October 1\textsuperscript{st}, 2011 – September 30\textsuperscript{th}, 2013

- Dean for Student Affairs:
  Prof. Dr. Thomas Göbel
  Term of office: October 1\textsuperscript{st}, 2010 – September 30\textsuperscript{th}, 2013

- Dean for Research:
  Prof. Dr. Eckhard Wolf
  Term of office: October 1\textsuperscript{st}, 2010 – September 30\textsuperscript{th}, 2013

IT-Group

- Head of office:
  Chris van der Meijden

- Technicians:
  Gerhard Moll, André Michas, Christian Strobl

- e-Learning and e-Assessment:
  Dr. Heinrich Flaswinkel
Associated: PD Dr. Sven Reese, Cyrill Matenears
Telephone: 089 / 2180-2523
e-mail: v.d.Meijden@lmu.de

Office for Student Services
Dr. Martina Hurler, Thomas Thielemann
Telephone: 089 / 2180-3578
e-mail: t.thielemann@dekanat.vetmed.uni-muenchen.de
Veterinärstr. 13
80539 Munich
Telephone: 089 / 2180-2503
Website: www.vetmed.uni-muenchen.de/studium

Authority overseeing the University
The Bavarian State Ministry of Sciences, Research and the Arts
(Bayerisches Staatsministerium für Wissenschaft, Forschung und Kunst)
Salvatorstrasse 2
80333 Munich
Telephone: 089 / 2186-0 (s.o.)
Fax: 089 / 2186-2800
E-mail: poststelle@stmwfk.bayern.de
Website: www.stmwfk.bayern.de

2.1.2 APPOINTMENT RULES, RESPONSIBILITIES AND FUNCTIONS OF ADMINISTRATIVE BODIES

Faculty Council
The Faculty Council is the autonomous governing body of the Faculty. It consists of 35 members, advises and makes decisions concerning all important affairs of the Faculty.
Members of the Faculty Council according to the constitution of LMU Munich:

- Dean
- Vice-Dean
- Dean for Student Affairs
Members of the Faculty Council according to Article 34 of Bavarian Higher Education Act (Bayerisches Hochschulgesetz):

- Heads of the following institutes and clinics:
  - Comparative Tropical Medicine and Parasitology
  - Clinic of Small Animal Medicine
  - Clinic of Small Animal Surgery and Reproduction
  - Clinic for Swine
  - Clinic for Horses
  - Institute of Veterinary Pathology
  - Representatives of the institutes:
    - Infectious Diseases and Zoonoses
    - Clinic for Ruminants with Ambulatory and Herd Health Services

The following members of the Faculty Council are representatives of the respective groups. They are to be elected every two years by their peer groups. Re-election is possible.

- Professors: 12 seats
- Non-professorial academic staff: 4 seats
- Students: 4 seats
- Non-academic staff: 2 seats
- Women’s Representative: 2 seats

**Dean**

The Dean is elected among the professors of the Faculty by the Faculty Council for a two-year term, always commencing on the 1st of October. The Dean can be re-elected for an unlimited number of terms. In case of premature leave, a successor for the remaining term has to be elected immediately. The University Executive Board is capable of recalling the Dean from office according to Article 28 of Bavarian Higher Education Act. The Dean acts as the chairman and the executive of current affairs of the Faculty Council. He carries out plans and decisions made by the Faculty Council and suggests actions for improvement of the Faculty relating to all aspects of the Faculty. The Dean is a member *ex officio* of the Faculty Council.

**Vice-Dean**

The Dean proposes the candidate(s) for the Vice-Dean among the professors of the Faculty for election by the Faculty Council. The term of duty is two years and lasts until the successor has been elected. The Vice-Dean takes over the tasks of the Dean if the Dean should leave his duty prematurely until a new election takes place. The Vice-Dean is a member *ex officio* of the Faculty Council.
Dean for Student Affairs

Any Member of the Faculty Council can propose a candidate for the Dean for Student Affairs among the professors of the Faculty for election by the Faculty Council. The Dean for Student Affairs has a three-year term, always commencing on the 1st of October. Re-election is possible for an unlimited number of times. In case of premature leave, a successor for the remaining term has to be immediately elected. Voting out of office is not possible. The main duties of the Dean for Student Affairs are:

- to ensure that teaching provided complies with the official curriculum
- to guarantee that the curriculum can be completed within the minimum time set by the TAppV
- to make sure that the students get adequate support
- to organize the evaluation of teaching.

The Dean for Student Affairs is a member *ex officio* of the Faculty Council.

Dean for Research

Any member of the Faculty Council can propose a candidate for the Dean for Research among the professors of the Faculty for election by the Faculty Council. The term lasts three years, always commencing on the 1st of October. Re-election is possible for an unlimited number of times. In case of premature leave, a successor for the remaining term has to be immediately elected. Voting out of office is not possible. The Dean for Research coordinates research activities within the Faculty.

Women’s Representative

The Women’s Representative is elected among the female full-time academic staff of the Faculty by the Faculty Council. All female professors, academic staff and students of the Faculty entitled to vote may propose candidates. The term lasts two years, always commencing on the 1st of October. In case of premature leave, a successor for the remaining term has to be elected. The Women’s Representative ensures that no actions or decisions to the detriment of female scientists, teaching staff and students occur. Additional Representatives can be elected to deputise and support the Women’s Representative.

Student Council

The Student Council consists of eight student representatives elected in general elections organised by the University. Any student who is willing to represent her/his classmates can stand for election. The Student Council and its speakers take care of all affairs of students concerning the Faculty. The meetings of the Student Council take place every Monday afternoon and are open to all students of the Faculty.
Faculty Committees

The Faculty Council can establish Faculty Committees for certain assignments and problems. Currently there are three main committees:

- Curriculum Committee (see Ch. 4)
- Research Committee (see Ch. 12)
- Organisation and Development Committee (see Chapter)

![Diagram of the internal administrative structures of the Veterinary Faculty](image)

Fig. 2.1 Diagram of the internal administrative structures of the Veterinary Faculty

2.1.3 Faculty’s Relation to the University and Other Ministerial Structures

Concerning all legal matters, financial affairs and employment of staff, the University and the Faculty are under the supervision by the Bavarian State Ministry of Sciences, Research and the Arts (Bayerisches Staatsministerium für Wissenschaft, Forschung und Kunst).

The University is a public corporation with the right of self-governance within the confines of the law. At the same time, it is a state entity divided into a central administration and various faculties. The faculties house various academic bodies as well as managing units. In order to strengthen interdisciplinary collaboration, members of these academic bodies can merge to form crossdisciplinary centres or departments.

University Council (Hochschulrat)

The Council has members of the University as well as high-ranking and experienced representatives from the private sector, the professional world and academia. The President and Vice-Presidents are elected by the Council, which can also remove such individuals from office. The Council enacts the university constitution, decides
upon matters relating to university development. The University Council has a four-year term.

**University Executive Board (Hochschulleitung)**

The University Executive Board is composed of six members: the President and five Vice-Presidents. The University Executive Board consults with the University Council.

**University Governing Board (Erweiterte Hochschulleitung)**

The University Governing Board consists of members of the Executive Board, the deans of the 18 faculties, the representatives of the academic staff, the Women’s Representative and the student representatives. The University Governing Board is responsible for the university development plan and decides upon the organization of the university into faculties.

**Board of University Representatives (Senat)**

The Board of University Representatives consists of 16 members as well as the Women’s Representative. The six members of the University Executive Board attend the meetings in an advisory capacity. The University Representatives vote on fundamental questions of research, the promotion of young academics, and the fulfilment of gender equality as well as exam and degree regulations. The Board of University Representatives gives a recommendation to the University Executive Board on the short list for the appointment of new professors which is submitted by the faculties’ search committees.

![Diagram of the administrative structures between the Faculty and the University](image)

**Fig. 2.2 Diagram of the administrative structures between the Faculty and the University**
2.1.4 **Institutions of the Faculty**

Members of the academic bodies of the Faculty of Veterinary Medicine merge to form the following three administrative bodies:

- Department of Veterinary Sciences
- Centre for Clinical Veterinary Medicine
- Livestock Centre Oberschleissheim

**Department of Veterinary Sciences**

Director: Prof. Dr. Gerd Sutter  
Vice-Director: Prof. Dr. Dr. h.c. Erwin Märtlbauer  
Head of Office: Dr. Werner Eichhorn  
Telephone: 089 / 2180-2531  
E-mail: geschaeftsstelle@vetwiss.vetmed.uni-muenchen.de

The Department of Veterinary Sciences is to ensure a more effective and flexible cooperation among the institutes. The Department Council is entitled to decide on all matters of staff as well as financial and building resources.

The members of the Department Council are:

- all professors (Chair-holders W3/C4 and Associate Professors W2/C3)  
- one representative of non-professorial academic staff  
- one Women’s Representative

The Department Council elects the Director (1 seat) and the Vice-Director (1 seat) among the professors of the Department Council. The Director of the Department has a two-year term, always commencing on the 1st of October. One re-election is allowed. The Dean of the Faculty shall not be the Director or the Vice-Director of the Department. The Director of the Department acts on current affairs of the Department and carries out decisions made by the Department Council. The Director is the representative of the Department in other university bodies.

**Institutes belonging to the Department of Veterinary Sciences**

1. **Veterinary Anatomy, Histology and Embryology**

Chair: N. N.  
Associate: Prof. Dr. Cordula Poulsen Nautrup  
Telephone: 089 / 2180-2563  
E-mail: f.sinowatz@anat.vetmed.uni-muenchen.de
2. Physiology
Chair: Prof. Dr. Manfred Stangassinger
Associate: Prof. Dr. Thomas Goebel
Associate: Prof. Dr. Bernd Kaspers
Telephone: 089 / 2180-2552
E-mail: m.stangassinger@tiph.vetmed.uni-muenchen.de

3. Physiological Chemistry
Chair: Prof. Dr. Dr. h.c. Hans-Joachim Gabius
Telephone: 089 / 2180-2290
E-mail: gabius@tiph.vetmed.uni-muenchen.de

4. Fishery Biology and Fish Diseases
Chair: Prof. Dr. Dusan Palic, PhD
Telephone: 089 / 2180-2282
E-mail: d.palic@fisch.vetmed.uni-muenchen.de

5. Animal Nutrition and Dietetics
Chair: Prof. Dr. Ellen Kienzle
Telephone: 089 / 2180-78700
E-mail: kienzle@tiph.vetmed.uni-muenchen.de

6. Food Safety
Chair: Prof. Dr. Manfred Gareis
Telephone: 089 / 2180-78500
E-mail: m.gareis@ls.vetmed.uni-muenchen.de

7. Hygiene and Technology of Milk
Chair: Prof. Dr. Dr. h.c. Erwin Märtlbauser
Telephone: 089 / 2180-78600
E-mail: milchhygiene@mh.vetmed.uni-muenchen.de

8. Animal Genetics and Husbandry
Chair: Prof. Dr. Martin Förster
Telephone: 089 / 2180-2548
E-mail: tierall.secretary@gen.vetmed.uni-muenchen.de
9. Molecular Animal Breeding and Biotechnology
Chair: Prof. Dr. Eckhard Wolf
Associate: Prof. Dr. Bernhard Aigner
Telephone: 089 / 2180-76800
E-mail: ewolf@lmb.uni-muenchen.de

10. Animal Welfare, Ethology, Animal Hygiene and Animal Housing
Chair: Prof. Dr. Michael Erhard
Telephone: 089 / 2180-78302
E-mail: m.erhard@tierhyg.vetmed.uni-muenchen.de

11. Palaeoanatomy, Domestication Research and History of Veterinary Medicine
Chair: Prof. Dr. Joris Peters
Telephone: 089 / 2180-5711
E-mail: joris.peters@palaeo.vetmed.uni-muenchen.de

12. Bacteriology and Mycology
Chair: Prof. Dr. Reinhard Straubinger, PhD
Telephone: 089 / 2180-2528
E-mail: r.straubinger@lmu.de

13. Virology
Chair: Prof. Dr. Gerd Sutter
Telephone: 089 / 2180-2610
E-mail: gerd.sutter@lmu.de

14. Comparative Tropical Medicine and Parasitology
Chair: Prof. Dr. Kurt Pfister
Telephone: 089 / 2180-3622
E-mail: kurt.pfister@tropa.vetmed.uni-muenchen.de

15. Pharmacology, Toxicology and Pharmacy
Chair: Prof. Dr. Heidrun Potschka
Associate: Prof. Dr. Hermann Ammer
Telephone: 089 / 2180-2663
E-mail: potschka@pharmtox.vetmed.uni-muenchen.de
CENTRE FOR CLINICAL VETERINARY MEDICINE

Director: Prof. Dr. Katrin Hartmann
Vice-Director: Prof. Dr. Holm Zerbe
Head of Office: Robert Oestreich
Telephone: 089 / 2180-6351
E-mail: geschaeftsstelle@vetklin.vetmed.uni-muenchen.de

The Centre for Clinical Veterinary Medicine was established in order to achieve an effective and flexible use of all resources (personnel, finances, facilities)

The members of the Centre Council are:

- eight heads (Chair-holders or Directors of the belonging institutes)
- five representatives of W2/C3 (associate) professors elected among peers
- one representative of non-professorial academic staff
- one Women’s Representative

The Centre Council elects the Director (1 seat) and the Vice-Director (1 seat) among the professors of the Centre Council. The Director of the Centre has a two-year term, always commencing on the 1st of October. Re-election is possible for an unlimited number of times. Voting out of office is possible at any time by a 2/3 majority of the Centre Council members. The Dean of the Faculty shall not be the Director or the Vice-Director of the Centre. The Director of the Centre acts on current affairs of the Centre and carries out the decisions made by the Centre Council. The Director is the representative of the Centre in other university bodies.

Clinics and Institutes belonging to the Centre for Clinical Veterinary Medicine

1. Clinic of Small Animal Medicine

Head: Prof. Dr. Katrin Hartmann
Associate: Prof. Dr. Johannes Hirschberger
Associate: Prof. Dr. Ralf Müller
Telephone: 089 / 2180-2651
E-mail: vorstandsassistenz@medizinische-kleintierklinik.de

2. Clinic of Small Animal Surgery and Reproduction

Head: Prof. Dr. Andrea Meyer-Lindenberg
Associate: Prof. Dr. Joachim Braun
Associate: Prof. Dr. Roberto Köstlin
Telephone: 089 / 2180-2628
E-mail: vorstand@chirurgische-kleintierklinik.de

3. Clinic for Ruminants with Ambulatory and Herd Health Services

Executive Director: Prof. Dr. Holm Zerbe

3a. Internal Medicine and Surgery of Ruminants

Chair: Prof. Dr. Gabriela Knubben-Schweizer
Telephone: 089 / 2180-78850
E-mail: G.Knubben@lmu.de

3b. Physiology and Pathology of Reproduction

Chair: Prof. Dr. Holm Zerbe
Associate: Prof. Dr. Rolf Mansfeld
Telephone: 089 / 2180-78830
E-mail: h.zerbe@lmu.de

4. Clinic for Swine

Head: Prof. Dr. Mathias Ritzmann
Telephone: 089 / 2180-78900
E-mail: Ritzmann@med.vetmed.uni-muenchen.de

5. Clinic for Horses

Executive Director: Prof. Dr. Hartmut Gerhards

5a. Surgery and Internal Medicine

Chair: Prof. Dr. Hartmut Gerhards
Telephone: 089 / 2180-3747
E-mail: kontakt@pferd.vetmed.uni-muenchen.de

5b. Internal Medicine of Horses (including reproduction)

Chair: N.N.

6. Clinic for Birds, Reptiles, Amphibians and Ornamental Fish

Head: Prof. Dr. Rüdiger Korbel
Telephone: 089 / 2180-76070
E-mail: verwaltung@vogelklinik.vetmed.uni-muenchen.de
7. Institute of Veterinary Pathology

Head: Prof. Dr. Walter Hermanns
Associate: Prof. Dr. Kaspar Matiasek
Associate: Prof. Dr. Ruediger Wanke
Telephone: 089 / 2180-2530
E-mail: hermanns@patho.vetmed.uni-muenchen.de

The heads of these institutes are responsible for patient care, financial management, and teaching.

**LIVESTOCK CENTRE OBSERSCHLEISSHEIM**

Executive Director: Prof. Dr. M. Erhard
Executive Board: Prof. Dr. M. Förster, Prof. Dr. M. Ritzmann,
                Prof. Dr. H. Zerbe, the Dean (Prof. Dr. J. Braun)
Centre Administrator: Prof. Dr. Armin Scholz
Telephone: 089 / 2180-76040
E-mail: armin.scholz@lvg.vetmed.uni-muenchen.de

After the Department of Veterinary Sciences and the Centre for Clinical Veterinary Medicine had been established, the Executive Board of the Livestock Centre Oberschleissheim has been remodelled in order to strengthen the ties between these organisations. Two professors from each of the administrative bodies are delegated into the Executive Board. The Dean is also a member of the Board.

**2.2 COMMENTS**

A number of organisational changes have been implemented since the last site visit by EAEVE. Two departments have been established in order to streamline administrative procedures, to strengthen interdisciplinary collaboration, to enable a more flexible allocation of resources and to improve organisation of teaching.

The structure of the veterinary clinics has been changed from a disciplinary approach to a strictly species-oriented structure. With this move, the excellent new facilities for ruminants and pigs in Oberschleissheim encompass all disciplines (internal medicine, surgery and reproduction) within the respective species clinic.

The new executive board of the Livestock Centre is a logical consequence to the formation of departments. The Clinics for Ruminants and Swine are now represented in the executive board which will enhance the use of the Livestock Centre for our clinical education programme.

The implementation of a central IT-group has greatly improved the service for students and employees as well and increased tremendously the standard of all IT-matters in the Faculty. Likewise, the Students Office offers a broad range of services to students which are greatly appreciated.
2.3 SUGGESTIONS

The Faculty will continue to develop these institutions in order to increase their efficiency. The Livestock Centre will play an important role in our clinical education programme.

NOTES

........................................................................................................................................
........................................................................................................................................
........................................................................................................................................
........................................................................................................................................
........................................................................................................................................
........................................................................................................................................
3 FINANCES

3.1 FACTUAL INFORMATION

3.1.1 GENERAL INFORMATION

Allocation of funding (including public funding) to the Faculty

Funding is provided by the State of Bavaria, more precisely by the Bavarian State Ministry of Sciences, Research and the Arts to the University. The amount of funding is laid down by the State Budget. Funding of the clinics is dealt with by a separate chapter of the State Budget. Within the University, funds are decided by the University Executive Board. In theory, parts of the funding, both from the State and within the University are linked to parameters of financial burden and achievements. But this has not been implemented yet. Details can be found in the Bavarian Higher Education Act.

Funding in comparison with other courses

Not applicable

Allocation of funds within the Faculty

There is no single budget for the entire Faculty. The University provides financial support separately for the Department of Veterinary Sciences, Centre for Clinical Veterinary Medicine, the Livestock Centre Oberschleissheim, and the Dean’s office. In addition, these are no global budgets which cover all expenditures of those institutions. In fact, the University pays for a number of expenses directly, so that these items do not show up in the budget. The most important items are:

- salaries of budgeted posts
- power and water supply, heating
- building work
- maintenance of buildings, roads and public spaces on the campus
- household inspectorate: cleaning, workshop, porters office and mail room

The system of allocating funds to the Faculty’s institutions is complex. In the case of the Department of Veterinary Sciences, a basic budget is provided which is independent of potential revenues. The Dean’s office, which is also responsible for the Faculty’s IT-Group, receives a lump sum per year. In contrast, the Centre for Clinical Veterinary Medicine and the Livestock Centre Oberschleissheim have to generate revenues by clinical service or production of agricultural goods which in turn can be used to cover expenditures. Details are given in the corresponding sections below.
Construction and maintenance of buildings

Major building projects (costs exceeding 1 Mill €) are financed by the Bavarian State Budget. The Faculty can forward a request for new buildings to the University. In case of a mutual agreement, this request is forwarded to the Bavarian State Ministry of Sciences, Research and the Arts. The final decision on these projects is taken by the Bavarian State Parliament. Major building projects completed since the last evaluation in 2002 are described in Chapter 6.

The procedure for funding of minor building projects (costs below 1 million €) are different among the institutions. In the case of the Department of Veterinary Sciences, the University provides a budget for all faculties. The Department has to apply for specific projects. The Centre for Clinical Veterinary Medicine has a separate budget for minor building projects and building maintenance at its disposal. Quite often, new regulations concerning fire prevention, laboratory safety and safety of work places, waste management etc. are the underlying reason which make such projects necessary. Additionally, there are special funds for building maintenance provided by the government (e.g. federal programme to enhance economic activity in 2011).

In 2011, the University spent a total of 3,439,504 € for minor building projects and building maintenance (including expenses for energy, water, concierge service etc.) at the Veterinary Faculty (see details in corresponding sections below). This varies considerably between years but gives an idea about the extent of support from the University.

The household inspectorate at the Faculty is an institution paid for by the University. The inspectorate is divided into the following sections: cleaning (inside and outside), workshop, porter’s office and mail room. Additionally, private firms are contracted for cleaning and are also paid by the University.

Mechanisms for funding major equipment, capital expenditure

New professors (chairs) can negotiate additional support from the University during the appointment procedure. This may include personnel allocated to this chair and paid for by the University for the first 2 to 5 years. In most cases, there is an additional lump sum which can be used for the purchase of new equipment as well as refurbishment of labs and offices. The idea is to provide a new professor with a start-up fund which in turn enables him/her to attract grant money as soon as possible after the appointment.

Institutions or individual scientists can also apply to the Federal Ministry of Education and Research or the State of Bavaria for funding of special equipment (see list below). Major items of equipment valued above 125,000 € are jointly financed by federal funds (50%) and university funds (50%). Application procedures for large items of equipment are as follows: The application is forwarded to the university administration, which then decides on the granting of university funds. Furthermore, the justification of the application is discussed at the Bavarian State Ministry of Science, Research and the Arts, which also receives reports from the German Research Foundation (DFG). In case of the application is
seen as justified, funds are released by the Bavarian Ministry of Sciences, Research and the Arts. Federal funding (50%) is transferred after completion of financing.

**IT funds**

Special programmes are provided by the University to renew IT-equipment in labs and offices (see below), as well as for students’ IT-workplaces (see Chapter 8).

**Research grants**

All scientists of the Faculty can apply for money from national and international grants. Grant money contributes considerably to the research performance of the Faculty (see Tables 3.1. and 3.2). For grants from the German Research Foundation, from federal ministries, or from the European Union, an overhead of 20% is available to the University. The researcher responsible for the grant will receive 50% of the overhead in addition to the grant money.

**Tuition fee**

In 2007, the Bavarian Government introduced tuition fees for the attendance of state-run universities. About 80% of this money is distributed by the university to the faculties according to the number of students. This budget is allocated by a special faculty committee to institutes of the faculties to improve teaching quality (see 3.1.5).

### 3.1.2 Financing of the Department of Veterinary Sciences

Funding requirements for research and teaching are calculated on the level of the University by the following formulas:

- Funding requirements for the course of study = Basic amount for the course of study + per capita requirement of the course of study x number of first time students within the average study duration
- Funding requirements of the institutes not linked to the course of study = Basic amount for the institute + per capita requirement of the institute x number of scientific positions at the institute

75% of the financial requirements calculated in this manner are allocated from the budget as basic funding. The remainder of the budget is divided among additional funding for the course of study and extra funding of the institutes. Additional funds are allocated depending on achievements.

Performance criteria for the course of study are mainly teaching achievements, especially the number of graduates in comparison to the number of students within the average study duration.

Performance criteria applying to the institutes are:

- the successes achieved in research, including the specific amount of research funds attracted
FINANCES

- Logarithms of (1 + research funds)
- 2/3 of additional funding of the institutes
- the outcome of fostering young scientists
  - (number of doctorates + number of habilitations) per number of professorial positions
- 1/6 of additional funding of the institutes
- the advances made in achieving equal opportunities.
  - Proportion of women holding non-professorial academic positions in relation to the proportion of female graduates
- 1/6 of additional funding of the institutes

Annual budget

The annual basic budget provided by the University to the Department of Veterinary Sciences is around 835,000 €. The basic budget is distributed by the Board of the Department to the chairs according to performance and teaching load. The chairs have to meet the expenses for running offices and laboratories with this budget. As already explained, salaries, energy (electricity, heating, water), maintenance of buildings including janitor service, maintenance of roads, lawns etc. on the campus (cleaning, snow clearance etc.) are covered by the University.

The start-up funds for newly appointed professors usually are paid over a period of 3 to 5 years. These funds are given to the department along with the basic budget (see Table 3.1)

Funding of new IT-equipment

A regular programme to renew IT-equipment in labs and offices brought 203,000 € in 2006/2007 and 181,000 € in 2011/2012 to the Department. Since all academic staff members have a teaching obligation, this programme supports teaching and research equally. The money was spent to expand the central IT-infrastructure and to add local work places as well. Projects which require high data speed or very large data storage units (3D/4D-computations, computations of heritability, video-based behaviour analysis) specifically benefit from these programmes.

Mechanisms for funding major equipment, capital expenditure

Start-up funds for new professors were a substantial source of income for the Department during the last years. Five new chair-holders have been appointed between 2006 and 2012, bringing more than 3.7 Mill € to the Department.

A significant number of major equipment items had been funded by the Federal Ministry of Education and Research or the State of Bavaria. The following major items of equipment could be acquired since 2003 (total 2,330,346 €):

- Confocal Laser microscope (2003) 371,000 €
- Liquid chromatography (2005) 109,765 €
Table 3.1 Income/Revenue of the Department of Veterinary Sciences in €

<table>
<thead>
<tr>
<th>Year</th>
<th>State (government)</th>
<th>Income generated by the Department</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>To university administered outside the Faculty</td>
<td>Directly to the Department</td>
<td>Income from service provided</td>
</tr>
<tr>
<td>2011</td>
<td>Not applicable</td>
<td>1,623,763</td>
<td>1,391,812</td>
</tr>
<tr>
<td>2010</td>
<td>Not applicable</td>
<td>1,657,510</td>
<td>1,187,987</td>
</tr>
<tr>
<td>2009</td>
<td>Not applicable</td>
<td>1,377,832</td>
<td>979,070</td>
</tr>
</tbody>
</table>

# Basic budget + start-up funds; * Grant + Overhead
Salaries for all budgeted posts, paid directly by the university to employees:

- 2011: 18,638,047 €
- 2010: 17,796,920 €
- 2009: 17,796,920 €
3.1.3 Financing of the Centre for Clinical Veterinary Medicine

Institutes of the Centre for Clinical Veterinary Medicine have to generate revenues from clinical and diagnostic services. In the years 2009 - 2011, a minimum revenue of 3,745,000 € was set by the State Government.

Minor building projects and building maintenance

The annual budget of the Centre for building maintenance and minor building projects, provided by the University, is 957,480 €.

In recent years this budget has been used for the following projects:

Clinic of Small Animal Medicine, Radiotherapy

- Building for the Linear accelerator: 1,000,000 €

Clinic of Small Animal Medicine (general refurbishment)

- 2004 – 2010; due to appointment of Prof. K. Hartmann): 1,900,000 €

Clinic for Swine and Clinic for Ruminants

- New seminar rooms, storage facilities for hay, straw etc.: 1,500 000 €
  (Financed by a special programme for enhancing the economic activity)

Clinic for Birds, Reptiles, Amphibians and Ornamental Fish

- Extension for Reptiles, Amphibians and Ornamental Fish: 1,000,000 €

Livestock Centre Oberschleissheim

- Barn and seminar rooms within the Livestock Centre for teaching in reproduction medicine (to be finished in 2012)

From 2012: Refurbishment of the Clinic for Surgery and Reproduction

Funding of new IT-equipment

The regular programme to renew computers and IT-equipment for labs and offices is available every 5 years. The latest programme in 2011 provided 212,497 € for new IT-equipment in the Centre for Clinical Veterinary Medicine.

Mechanisms for funding major equipment, capital expenditure

One lump sum is provided annually to all clinics by the University (2011: 406,350 €). This budget is primarily meant to renew equipment in the institutions of the Centre. It also supports newly appointed professors with a start-up fund. Chair-
holders appointed since 2005 received additional funds from the University or the ministry (around 1,440,000 €).

A significant number of major equipment items had been funded by the Federal Ministry of Education and Research or the State of Bavaria. The following major items of equipment could be acquired since 2002:

**Clinic of Small Animal Medicine**
- Linear accelerator Precise: 995,921 €
- Ultrasound VIVID 7 Console: 160,000 €

**Clinic of Small Animal Surgery and Reproduction**
- X-ray Luminos drf: 450,000 €
- Computer tomography (planned for 2012): 850,000 €

**Clinic for Horses**
- X-ray (planned for 2012): 210,000 €

**Table 3.2 Income and expenditure of the Centre for Clinical Veterinary Medicine**

<table>
<thead>
<tr>
<th></th>
<th>Income from clinical service</th>
<th>- 15% of surplus revenues</th>
<th>Actual Expenditure</th>
<th>Research grants*</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>4,981,605 €</td>
<td>185,451 €</td>
<td>4,843,770 €</td>
<td>1,221,789 €</td>
</tr>
<tr>
<td>2010</td>
<td>5,129,640 €</td>
<td>207,696 €</td>
<td>4,869,831 €</td>
<td>1,072,661 €</td>
</tr>
<tr>
<td>2009</td>
<td>5,284,014 €</td>
<td>230,852 €</td>
<td>4,805,870 €</td>
<td>1,908,520 €</td>
</tr>
</tbody>
</table>

Since the revenues exceeded the minimum revenue of 3,745,000 €, 15% of the surplus was retained by the financial authorities;* Grant + overhead

Salaries for all budgeted posts, paid directly by the University to employees:
- 2011: 12,342,949 €
- 2010: 12,443,361 €
- 2009: 12,581,278 €
3.1.4 **FINANCING OF THE LIVESTOCK CENTRE OBERSCHELISSHEIM**

**Table 3.3** Income/Revenue of Livestock Centre Oberschleissheim in €

<table>
<thead>
<tr>
<th>Year</th>
<th>State (government)</th>
<th>Income generated by the Centre</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>University housing*</td>
<td>Directly to Faculty*</td>
<td>Income from agricultural products</td>
</tr>
<tr>
<td>2011</td>
<td>103,500</td>
<td>1,606,525</td>
<td>746,912</td>
</tr>
<tr>
<td>2010</td>
<td>184,140</td>
<td>1,582,517</td>
<td>642,277</td>
</tr>
<tr>
<td>2009</td>
<td>45,328</td>
<td>1,163,003</td>
<td>784,569</td>
</tr>
</tbody>
</table>

* Income from company housing and leasehold (must be paid back to the financial authorities; *including salaries

**Table 3.4** Expenditure of Livestock Centre Oberschleissheim in €

<table>
<thead>
<tr>
<th>Year</th>
<th>Pay</th>
<th>Non Pay</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Salaries</td>
<td>Research support (Drittmittel)</td>
<td>Teaching &amp; clinical support</td>
</tr>
<tr>
<td>2011</td>
<td>915,187</td>
<td>317,473</td>
<td>33,921</td>
</tr>
<tr>
<td>2010</td>
<td>924,160</td>
<td>-</td>
<td>330,362</td>
</tr>
<tr>
<td>2009</td>
<td>892,804</td>
<td>-</td>
<td>70,295</td>
</tr>
</tbody>
</table>
3.1.5 Tuition Fee

In the summer semester of 2007, the Bavarian State introduced a tuition fee for the attendance of state-run universities. Initially, students had to pay 300 € per semester. Since the summer semester, 2008, they have to pay 500 € per semester.

In a number of cases, students are exempt from tuition fee. These are for example:

- students raising or tending a child that is seriously disabled, or being under 18 at the beginning of the semester;
- students whose parents receive child benefit (or a similar benefit in the European Union) for three or more children;
- students whose parents have another child, that is enrolled at a university in the European Union and has to pay tuition fee;
- foreign students enrolled in the scope of (1) intergovernmental contracts and those under international law, or (2) agreements between universities, which guarantee exemption from tuition;
- students who receive a grant from the German Academic Exchange Service.

A retrospective exemption with back payment of the complete tuition fee is possible for students of the LMU that completed their studies at the LMU in the minimum number of years if they were among the upper 10% of their class.

The Development Loan Corporation (Kreditanstalt für Wiederaufbau) offers tuition fee loans. Thus, students have the possibility to finance the tuition fee during their studies and pay back the loan afterwards.

The Faculty receives only approximately 80% of the whole tuition fee from the University because the University also supports projects for university institutions (central library etc.). The following table shows the amount of tuition fee the Faculty received from the University in the past three years. The amount of the tuition fee available to the Faculty decreased between 2009 and 2011 because additional regulations came into effect, leading to more students being exempt from payment. As from 2011, the amount of the tuition fee is expected to be unchanged.

The Veterinary Faculty was able to allocate all funds available without any delay.

Table 3.5. Tuition fee to be used by the Faculty

<table>
<thead>
<tr>
<th>Year</th>
<th>Tuition fee in €</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>753,315</td>
</tr>
<tr>
<td>2010</td>
<td>809,610</td>
</tr>
<tr>
<td>2009</td>
<td>962,233</td>
</tr>
</tbody>
</table>
The Tuition Fee Rules regulate the financial administration of the tuition fee. The members of the Tuition Fee Committee are also determined by the Rules:

- Dean
- Dean for Student Affairs
- Women’s Representative
- one representative of the professors
- one representative of the academic staff
- one representative of the non-academic staff
- six representatives of the students

The Office for Student Services prepares for the meetings of the Tuition Fee Committee and later informs the applicants of the decisions. The composition of this committee is unique because it is the only committee where students hold 50% of seats. Nevertheless, almost all decisions are taken unanimously.

The Faculty has to write an annual report to the University that explains how the tuition fee was spent. The Faculty has also published the detailed expenditure of the tuition fee in every institution of the past years (see Annex).

The following projects were supported in 2011:

- Teaching material, textbooks, protective wear for the Clinical Rotation, one ultrasound machine, expenses for maintaining animals for practical training, welcome package for freshmen and around 40 posts for diverse courses provided by the Institutes, in the Office for Student Services and in the IT-Group.

### 3.2 Comments

Teaching establishments never have enough funding. Nevertheless we feel rather privileged in comparison to establishments in other federal states of Germany. The allocation of funds to the Faculty may look rather complicated because of the lack of an overall budget. On the other hand, this offers a remarkable long-term security for the Faculty. A good example is the fact that salaries of all employees are paid directly by the state. With a volume of salaries in the range of 30 Mill € per year, any pay-rise would cut tremendously into the faculty’s resources if salaries were part of a fixed global budget of the Faculty.

Specific budgets for IT-items, capital expenditure, building maintenance, start-up funds etc. provide good opportunities to maintain a good level of equipment and facilities. The Faculty is, however, as any other governmental institution, bound to apply for major construction work. Although the University supports the plans for new buildings for the Faculty, we compete with projects of other faculties on a university level and other building projects of the Bavarian State Ministry of Sciences, Research and the Arts. The decision of the Faculty to establish the entire Faculty on the new Campus Oberschleissheim has definitely stimulated the discussion about the future of the Faculty. Our decision led the University to plan a
new campus for parts of the Faculty of Physics on the grounds of our main campus. We expect to benefit greatly from this development. The decision of the University to finance facilities for the Institute for Infectious Diseases and Zoonoses and to build a lecture hall with adjoining cafeteria in Oberschleissheim is certainly part of these plans.

Under the current rules of admission and enrolment, any additional academic staff would automatically lead to an increase in the student number to be admitted with the notable exception of staff paid by either tuition fees or clinic income. We therefore appreciate this opportunity very much and in fact, the major part of the tuition fees is spent for additional academic staff in institutions where teaching in small groups is essential.

In general, the institutions of the Faculty are free to retain and use revenues from services with the exception that only 85 % of income from clinical services exceeding the minimum revenue set by the State Government can be retained. This holds also true for the Livestock Centre Oberschleissheim. Although both institutions would certainly prefer to retain the full amount of revenues, this is not a critical issue and certainly not a disincentive to strive for more income. It is, however, a matter of concern that all clinics in the Centre for Clinical Veterinary Medicine rely exclusively on revenues from clinical service.

The Faculty is successful in attracting money from grants. We expect this to continue since a number of new professors have been appointed just recently who do have the capacity to attract more grant money.

3.3 SUGGESTIONS

In the case of the Centre for Clinical Veterinary Medicine, a basic budget for teaching and research would provide more independence from revenues. Especially the Food Animal Clinics can experience problems when the occurrence of regulated diseases leads to a temporary closure of the facilities. Likewise, unfavourable economic developments of the dairy industry or the pig production industry can have a severe impact on revenues. The Faculty is already discussing these problems with the University.

NOTES

--------------------------------------------------------------------------------

--------------------------------------------------------------------------------

--------------------------------------------------------------------------------

--------------------------------------------------------------------------------
4 CURRICULUM

4.1 FACTUAL INFORMATION

National curriculum

In Germany, the curriculum for the veterinary undergraduate is regulated by Federal Law in the Ordinance of Veterinary Licensure (Tierärztliche Approbationsverordnung; TAppV; see Annex). The current TAppV came into effect in 2007. Basically, the requirements for veterinary education laid down in the TAppV correspond well with the European law (Council Directive 2005/36/EC).

The curriculum is described in the TAppV in detail with respect to

- the goal of veterinary education
- types of teaching
- subjects to be taught
- hours per subject
- extent of elective teaching
- type and volume of extramural training.

The basic chronology of exams, the respective subjects and the knowledge and skills to be examined are also described in the TAppV.

The basic division of the curriculum is a semester. There are two semesters per year lasting 14 - 15 weeks each. New students are only admitted for the winter semester, which runs from Mid-October through the first or second week of February. The summer semester starts in April and terminates at the end of July. Another important unit is a “semester weekly hour” (SWH), corresponding to 14 teaching units of 45 minutes duration within a semester.

Freedom of the Faculty to change the curriculum

The allocation of hours to each subject as laid down in the TAppV is mandatory with the exception that up to 20 % of teaching volume in subjects comprising at least 42 hours may be used for other subjects, provided that the total volume of teaching hours is not changed. The Faculty has made use of this option by reducing the amount of lectures in Zoology and Botany. These hours were used for establishing new lectures in Pathophysiology (4th semester) and Epidemiology (5th semester).

In comparison with the former Ordinance (Tierärztliche Approbationsordnung; TAppO), the new TAppV allows more flexibility in organising teaching and examination according to the specific options and profiles of the establishments. Based on this regulation, parts of the topics formerly taught during the clinical part were moved to the pre-clinical period (Parasitology I, General Bacteriology, General Virology and Introduction to Food and Meat Hygiene). Moreover, the period until the first examinations in botany and physics (first stage of the preclinical exam) was shortened to one semester.
These regulations are further detailed in the Teaching and Examination Rules. The Teaching and Examination Rules have been developed, extensively discussed and approved by the Faculty Committee of Study Affairs. The Faculty Council discussed and forwarded this regulation to the Board of University Representatives which finally approved the rules.

**Procedure of decisions on curriculum matters and course content**

Curriculum matters are discussed in the Committee of Study Affairs, which is also responsible for the Teaching and Examination Rules. The teaching schedule for the specific semesters is developed by the Dean for Student Affairs in consensus with the respective lecturers. The lecturers are responsible for the content of their lectures with respect to the demands laid down in the TAppV. The Dean for Student Affairs is primarily responsible for an appropriate organisation of the teaching schedules.

**Procedure of decisions on the allocation of hours between the various subjects**

The TAppV regulates that up to 20% of hours may be allocated to other subjects, if the curtailed subject is assigned a contingent of at least 42 hours. The TAppV does not regulate the balance between theoretical and practical teaching. This fact was used to completely change the hours allocated for clinical education from demonstrations in a lecture hall to hands-on experience in small groups during the Clinical Rotations. The allocation of hours to lectures, seminars, or practical training for each subject is detailed in the Teaching and Examination Rules.

### 4.1.1 Categories of subjects and types of training

#### Categories of subject

As laid down in the TAppV, the curriculum (total 5020 hrs) consists of:

- “core” subjects taken by every student (3542 hrs)
- “elective” subjects, to be selected from a list of offered subjects (308 hrs)
- obligatory extramural work (1170 hrs)

#### Types of training

Generally speaking, the types of training at the Faculty of Veterinary Medicine in Munich concur with the definitions of EAEVE types of training methods.

#### Theoretical training

- **Didactic lectures** offer theoretical knowledge. Lectures are given to the total or a subset of a class.
- **Seminars** (tutorials or supervised group work) are teaching sessions directed at a smaller group of students during which they work on their own, or as a team, on part of the theory.
• **Self-directed learning** is a type of teaching where individual students use defined teaching materials provided by the Faculty (e.g. e-learning). For this purpose, a study platform containing e-learning material for each subject is accessible for every student.

**Supervised practical training**

• **Laboratory and desk based work** includes teaching sessions, in which students themselves actively perform laboratory experiments or use microscopes for the examination of histological or pathological specimens. Essay work, clinical case studies or handling of herd-health monitoring programmes are also filed under this category.

• **Non-clinical animal work.** These are teaching sessions where students work on normal animals, objects, products, carcasses etc. (e.g. dissections in anatomy, food inspection).

• **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

In general, the national curriculum consists of a pre-clinical and a clinical part. The pre-clinical studies take place in the first two years, ending with a pre-clinical veterinary examinations of two stages after the 1\textsuperscript{st}/2\textsuperscript{nd} semester and the 2\textsuperscript{nd} year. The clinical studies take place in the 3\textsuperscript{rd}, 4\textsuperscript{th}, and 5\textsuperscript{th} year including extramural training. Exams in different subjects are scheduled during semester breaks after the 5\textsuperscript{th}, 6\textsuperscript{th} and 7\textsuperscript{th} Semester. The 11\textsuperscript{th} Semester is reserved for final exams.
### Table 4.1 General overview of curriculum hours taken by all students

<table>
<thead>
<tr>
<th>Semester</th>
<th>Theoretical training</th>
<th>Supervised practical training</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(A) Lectures</td>
<td>(B) Seminars</td>
<td>(C) Self-directed learning</td>
</tr>
<tr>
<td>1&lt;sup&gt;st&lt;/sup&gt; &amp; 2&lt;sup&gt;nd&lt;/sup&gt;</td>
<td>588</td>
<td>34&lt;sup&gt;#&lt;/sup&gt;</td>
<td>8</td>
</tr>
<tr>
<td>3&lt;sup&gt;rd&lt;/sup&gt; &amp; 4&lt;sup&gt;th&lt;/sup&gt;</td>
<td>434</td>
<td>34&lt;sup&gt;#&lt;/sup&gt;</td>
<td>8</td>
</tr>
<tr>
<td>5&lt;sup&gt;th&lt;/sup&gt; &amp; 6&lt;sup&gt;th&lt;/sup&gt;</td>
<td>728</td>
<td>60&lt;sup&gt;##&lt;/sup&gt;</td>
<td>24</td>
</tr>
<tr>
<td>7&lt;sup&gt;th&lt;/sup&gt;</td>
<td>336</td>
<td>44&lt;sup&gt;###&lt;/sup&gt;</td>
<td>12</td>
</tr>
<tr>
<td>8&lt;sup&gt;th&lt;/sup&gt; &amp; 9&lt;sup&gt;th&lt;/sup&gt;</td>
<td>28</td>
<td>28</td>
<td>110</td>
</tr>
<tr>
<td>10&lt;sup&gt;th&lt;/sup&gt; &amp; 11&lt;sup&gt;th&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>2114</td>
<td>200</td>
<td>162</td>
</tr>
</tbody>
</table>

<sup>#</sup> Elective subjects; Extramurals: *clinical training, <sup>##</sup>agricultural training, <sup>###</sup>veterinary public health

Self-directed learning is an integral part of many elective subjects. An average of about 25% for self-directed learning during electives has been used to allocate these hours to category C (semester 1 to 7). About one hour per day is allocated for self-directed learning during the 8<sup>th</sup> and 9<sup>th</sup> semester (Clinical Rotation: 22 weeks, 110 days).
Table 4.2 Curriculum hours in EU-listed subjects taken by each student

<table>
<thead>
<tr>
<th>Subject (local curriculum)</th>
<th>Theoretical training</th>
<th>Supervised practical training</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th>Other Extra-mural</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(A)</td>
<td>(B)</td>
<td>(C)</td>
<td>(D)</td>
<td>(E)</td>
<td>(F)</td>
<td>(G)</td>
<td></td>
</tr>
<tr>
<td><strong>Theoretical training</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lectures</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seminars</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-directed learning</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Laboratory and desk based work</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Non-clinical animal work</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Clinical training</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Other Extra-mural</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Basic Subjects

<table>
<thead>
<tr>
<th>Subject</th>
<th>Lectures</th>
<th>Seminars</th>
<th>Self-directed learning</th>
<th>Laboratory and desk based work</th>
<th>Non-clinical animal work</th>
<th>Clinical training</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zoology (incl. biology of infectious organisms)</td>
<td>70</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Botany of forage crops, pharmaceutical and poisonous plants</td>
<td>56</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physics (incl. basics of physical radiation protection)</td>
<td>56</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Biometrics</td>
<td>28</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chemistry</td>
<td>84</td>
<td></td>
<td>28</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1 Total number of hours 294 28 322

2. Basic Sciences

<table>
<thead>
<tr>
<th>Subject</th>
<th>Lectures</th>
<th>Seminars</th>
<th>Self-directed learning</th>
<th>Laboratory and desk based work</th>
<th>Non-clinical animal work</th>
<th>Clinical training</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anatomy, histology and embryology</td>
<td>168</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>42 112</td>
</tr>
</tbody>
</table>

322
<table>
<thead>
<tr>
<th>Subject (local curriculum)</th>
<th>Theoretical training</th>
<th>Supervised practical training</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(A) Lectures</td>
<td>(B) Seminars</td>
<td></td>
</tr>
<tr>
<td>Physiology, incl.</td>
<td>98</td>
<td>70</td>
<td>168</td>
</tr>
<tr>
<td>Pathophysiology</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Biochemistry</td>
<td>56</td>
<td>70</td>
<td>126</td>
</tr>
<tr>
<td>Genetics</td>
<td>28</td>
<td></td>
<td>28</td>
</tr>
<tr>
<td>Pharmacology, toxicology</td>
<td>98</td>
<td></td>
<td>98</td>
</tr>
<tr>
<td>and pharmacy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Virology, bacteriology</td>
<td>112</td>
<td>28</td>
<td>140</td>
</tr>
<tr>
<td>and mycology</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Immunology</td>
<td>14</td>
<td></td>
<td>14</td>
</tr>
<tr>
<td>Epidemiology</td>
<td>14</td>
<td></td>
<td>14</td>
</tr>
<tr>
<td>2 Total number of hours</td>
<td>588</td>
<td>210</td>
<td>910</td>
</tr>
</tbody>
</table>

3. Clinical Sciences

<table>
<thead>
<tr>
<th></th>
<th>(C) Self-directed learning</th>
<th>(D) Laboratory and desk based work</th>
<th>(E) Non-clinical animal work</th>
<th>(F) Clinical training</th>
<th>(G) Other Extra-mural</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Parasitology</td>
<td>56</td>
<td>14</td>
<td></td>
<td></td>
<td></td>
<td>70</td>
</tr>
<tr>
<td>Pathology</td>
<td>70</td>
<td>56</td>
<td>56</td>
<td></td>
<td></td>
<td>182</td>
</tr>
<tr>
<td>Manufacture and</td>
<td>14</td>
<td>14</td>
<td></td>
<td></td>
<td></td>
<td>28</td>
</tr>
<tr>
<td>prescription of medicine</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Laboratory animals</td>
<td>14</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>14</td>
</tr>
<tr>
<td>Reproductive medicine</td>
<td>154</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>154</td>
</tr>
<tr>
<td>and livestock</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subject (local curriculum)</td>
<td>Theoretical training</td>
<td>Supervised practical training</td>
<td>Total</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>----------------------------</td>
<td>----------------------</td>
<td>-------------------------------</td>
<td>-------</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(A)</td>
<td>(B)</td>
<td>(C)</td>
<td>(D)</td>
<td>(E)</td>
<td>(F)</td>
</tr>
<tr>
<td>management all species</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internal medicine all species</td>
<td>154</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Surgery and anaesthesia</td>
<td>168</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clinical examination</td>
<td>70</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>28</td>
</tr>
<tr>
<td>Radiology</td>
<td>42</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clinical Rotations</td>
<td></td>
<td>110</td>
<td></td>
<td></td>
<td></td>
<td>604</td>
</tr>
<tr>
<td>Extramural practical work</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Forensic veterinary medicine and veterinary professional legislation</td>
<td>28</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Veterinary state medicine and public health</td>
<td>28</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Theoretical training

<table>
<thead>
<tr>
<th>Subject (local curriculum)</th>
<th>Lectures (A)</th>
<th>Seminars (B)</th>
<th>Self-directed learning (C)</th>
<th>Laboratory and desk based work (D)</th>
<th>Non-clinical animal work (E)</th>
<th>Clinical training (F)</th>
<th>Other Extra-mural (G)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 Total number of hours</td>
<td>798</td>
<td>110</td>
<td>84</td>
<td>56</td>
<td>632</td>
<td>1680</td>
<td>4 Total number of hours</td>
<td>238</td>
</tr>
</tbody>
</table>

#### 4. Animal Production

<table>
<thead>
<tr>
<th>Subject</th>
<th>Lectures (A)</th>
<th>Seminars (B)</th>
<th>Self-directed learning (C)</th>
<th>Laboratory and desk based work (D)</th>
<th>Non-clinical animal work (E)</th>
<th>Clinical training (F)</th>
<th>Other Extra-mural (G)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Animal breeding</td>
<td>42</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>56</td>
</tr>
<tr>
<td>Feed science and animal nutrition</td>
<td>42</td>
<td></td>
<td></td>
<td></td>
<td>56</td>
<td></td>
<td></td>
<td>98</td>
</tr>
<tr>
<td>Agronomy and rural economics</td>
<td>28</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>28</td>
</tr>
<tr>
<td>Animal husbandry</td>
<td>28</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>28</td>
</tr>
<tr>
<td>Veterinary hygiene</td>
<td>28</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>28</td>
</tr>
<tr>
<td>Ethology and animal welfare</td>
<td>70</td>
<td>14</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>84</td>
</tr>
<tr>
<td>Extramural practical work</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>70</td>
</tr>
<tr>
<td>4 Total number of hours</td>
<td>238</td>
<td>14</td>
<td></td>
<td>56</td>
<td>14</td>
<td></td>
<td></td>
<td>392</td>
</tr>
</tbody>
</table>

#### 5. Food Hygiene/Public Health

<table>
<thead>
<tr>
<th>Subject</th>
<th>Lectures (A)</th>
<th>Seminars (B)</th>
<th>Self-directed learning (C)</th>
<th>Laboratory and desk based work (D)</th>
<th>Non-clinical animal work (E)</th>
<th>Clinical training (F)</th>
<th>Other Extra-mural (G)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food science and food hygiene</td>
<td>154</td>
<td>14</td>
<td></td>
<td>28</td>
<td>70</td>
<td></td>
<td></td>
<td>250</td>
</tr>
</tbody>
</table>

**43**
### CURRICULUM

<table>
<thead>
<tr>
<th>Subject (local curriculum)</th>
<th>Theoretical training</th>
<th>Supervised practical training</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(A)</td>
<td>(B)</td>
</tr>
<tr>
<td></td>
<td>Lectures</td>
<td>Seminars</td>
</tr>
<tr>
<td>a) food science</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b) meat hygiene</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c) milk science</td>
<td></td>
<td></td>
</tr>
<tr>
<td>d) extramural work</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 Total number of hours</td>
<td>154</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>28</td>
<td>70</td>
</tr>
<tr>
<td></td>
<td>250</td>
<td>516</td>
</tr>
</tbody>
</table>

#### 6. Professional Knowledge

<table>
<thead>
<tr>
<th>Medical terminology, history of veterinary medicine, professional issues</th>
<th>42</th>
<th></th>
<th>42</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 – Total number of hours</td>
<td>42</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| 7. Electives | 172 | 52 | 84 | 308 |

44
Electives

As indicated in the TAppV, at least 84 hours of elective courses should be completed (e.g. 6 electives with 1 hour per week) to take the Second Preclinical Veterinary Examination. The Final Examinations (semester 11) can be entered only if a minimum of additional 224 hours of electives (e.g. 16 electives with 1 hour per week) have been taken.

The Faculty offered a total of 283 different topics for electives during the summer term of 2011 and the winter term of 2011/2012. This figure is representative for the number of electives offered to students. The electives cover the entire range of disciplines and subjects of the curriculum. During semester 1 to 7, electives are taught as seminars with variable group size whereas electives during the Clinical Rotation are usually hands-on clinical work (e.g. special techniques in cattle reproduction etc.).

4.1.3 FURTHER INFORMATION ON THE CURRICULUM

In the days before new students start their studies, the Student Council organises an orientation course. Students are offered a Faculty tour, get to know the Student Council and receive written information about the entire Faculty and the course. All students have time-tables for their respective semester which facilitates orientation and organisation. Students are provided with a starter pack (lab-coats, instruments for dissections in anatomy etc.) by the Alumni Club.

The Office for student affairs is run by the Dean for Student Affairs and manned with 1.5 posts (fulltime equivalents). This office is the first address for all questions regarding the curriculum. Likewise questions dealing with fellowships, scheduling
problems, applications, extramural exercises etc. are answered. Moreover, it organises the evaluation of teaching. The office is open weekdays from 8 a.m. to 5 p.m.

A software tool called “Course Registration Management Tool – Coremato” has been developed for our students. This tool is used to organise elective courses, the Clinical Rotation and many other compulsory courses. This very complex tool is accessible worldwide via Internet and allows an optimal distribution of students to the different courses, taking into account individual preferences and other criteria. It also provides information on the current status of all students.

**Important notice for pregnant and nursing students**

Pregnant or nursing students are admitted to most of the lectures and courses. In some exceptions, however, the risk assessment that is mandatory according to German laws, leads to an exclusion of pregnant students. In these cases, a theoretical training is offered to the students as an alternative. During the Clinical Rotation, a theoretical training is not possible and also undesirable for the students, since they would miss an important part of the practical training. Therefore, students with a baby are treated with highest priority according to their individual requirements and the different rotations are adapted individually. With these measures, a pregnancy does not result in a considerable loss of time.

### 4.1.4 Pre-clinical Training

The first semester is dedicated to provide sufficient understanding and knowledge in biology, chemistry, zoology and physics. This is essential for students to participate in the subsequent semesters. With the second part of the pre-clinical exams after the 4th semester (anatomy, histology and embryology, physiology, physiological chemistry, animal husbandry and genetics) the training in basic sciences is completed.

### 4.1.5 Clinical Training

Clinical education prior to the Clinical Rotation

The courses in clinical examination are scheduled from the 4th through the 6th semester. At the start of the 6th semester, students have to take a written exam on theoretical aspects of clinical examination of all species covered in the curriculum. Having acquired all the necessary theoretical knowledge, students attend an obligatory practical course during the 6th semester (hands-on training in diagnostic and therapeutic procedures). The propaedeutics course is completed with an OSCE-examination after the 6th semester.

The majority of lectures in clinical and paraclinical subjects is scheduled during the 5th through 7th semester. In addition, students attend laboratory and desk-based work in pathology, parasitology, microbiology, and animal nutrition.
After the 6th and 7th semesters, exams are scheduled in:
- Clinical examination,
- Parasitology,
- Pharmacology and toxicology,
- Virology
- Bacteriology and Mycology
- Radiology
- Animal housing and hygiene
- Animal nutrition

**Clinical Rotation**

In the summer semester of 2005, the Faculty of Veterinary Medicine introduced the Clinical Rotation. The aim was to provide hands-on experience in a clinical setting across all clinical disciplines in all animal species. The Clinical Rotation is part of the training given to all undergraduate students. Its cycle is regulated in §6 of the Teaching and Examination Rules. It takes place in the 8th and 9th semester of the veterinary course. Each student has to complete the blocks listed in the table 4.3.

**Tab. 4.3: Blocks in Clinical Rotation**

<table>
<thead>
<tr>
<th>Block</th>
<th>Weeks</th>
<th>Number of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinic of Small Animal Medicine</td>
<td>6</td>
<td>30 – 36</td>
</tr>
<tr>
<td>Clinic of Small Animal Surgery and Reproduction</td>
<td>3</td>
<td>18 - 20</td>
</tr>
<tr>
<td>Clinic for Ruminants</td>
<td>6</td>
<td>30 – 36</td>
</tr>
<tr>
<td>Clinic for Horses</td>
<td>3</td>
<td>15 – 18</td>
</tr>
<tr>
<td>Clinic for Swine</td>
<td>2</td>
<td>10 – 12</td>
</tr>
<tr>
<td>Clinic for Birds, Reptiles, Amphibians and Ornamental Fish</td>
<td>2</td>
<td>10 - 12</td>
</tr>
</tbody>
</table>

To accommodate all students, the clinics have to offer blocks all the year round (except a break of 2 or 3 weeks around Christmas and New Year).

Along with these 22 weeks of hands-on training in the various clinics, students have to attend a 7-week course which features mainly supervised practical work in Pathology (see 4.1.5) and Food Hygiene (see 4.1.6). A two-hour weekly seminar on Animal Welfare and Manufacture and Prescription of Medicines is included in this programme.

The intramural Clinical Rotation is complemented by the 16 week extramural clinical work which directly follows the Clinical Rotation. Whereas the intramural section is aimed to provide clinical knowledge and competencies across all species...
and disciplines in an academic setting, students can now choose a place in a veterinary practice or clinic according to their specific needs.

As examples, a detailed description of the Clinical Rotation in the Clinic of Small Animal Medicine and the Clinic for Ruminants is presented below.

**Clinical Rotation in the Clinic of Small Animal Medicine**

Students spend a total of six weeks in the Clinic of Small Animal Medicine. During these six weeks, a minimum of 30 and a maximum of 40 students, are scheduled in this clinic. Students spend three weeks in each of two blocks. One half of the students spend the first three weeks with the general internal medicine team, the other half with one of the specialty teams (oncology, dermatology, cardiology, neurology and emergency and intensive care). After three weeks they switch.

During their time in the general internal medicine team, students are either in one of the two teams that undergoes consultation hours and looks after new patients after the primary care is done. Each of the specialty teams can only take four students at a time. Thus, students have to choose in which specialty team they would like to work before the six weeks begin. They can give a first and a second choice.

The students have their own patients and work them up together with one of the veterinarians of the clinic. Every day (weekends and public holidays included), the students inform the owners of their patients about the condition and the results of the procedures performed after having talked to the primary veterinarian. This communication with the owners, as well as all diagnostic and therapeutic procedures, has to be documented in detail in the clinic’s computer programme (**Vetera**) daily.

In the general internal medicine team, students have to write a so-called SOAP (**S**ubjective – **O**bjective – **A**ssessment – **P**lan) about each of their patients every day. The SOAP is marked by the primary veterinarian and then discussed with the student. This form of problem-oriented approach is an important documentation of the clinical case, and a great training for problem-orientated work-up of (often very complex) cases. The SOAP shows if the students have properly looked into their cases, and if they have fully understood them.

The first examination of the patients and the morning drug administration by the students take place before 7:30 a.m. From 7:30 to 8 a.m., new patients that arrived overnight and the appointments of the day are presented to veterinarians and students. Additionally, students give a short comment on how their patients developed overnight.

Students also take part in seeing appointments that are arranged from 10 a.m. to 1 p.m. They take the history of the patient and do a detailed physical examination. Afterwards, the patient’s problems are discussed with the primary veterinarian and the responsible senior veterinarian of the team. If the patient stays in the clinic for further diagnostics or therapy, the students continue to be responsible.

From 4 p.m. to 5:30 p.m., all students of the general internal medicine teams attend the so-called patient round that is hosted by one of the senior veterinarians. In the
patient round, every student presents all of his patients on the basis of his or her SOAP. Important patient data, sonograms, and radiographs have to be ready for presentation.

Within these six weeks, every student must complete two night shifts during the week (5 p.m. - 8:30 a.m. next day) while they are with a specialty team as well as another two during the weekend or holiday (12 p.m. - 8:30 a.m.) with a general internal medicine team. Every night shift, one student with one veterinarian work in the Intensive Care Unit and watch over the hospitalised patients, as some patients need 24-hour monitoring or treatment. However, students are allowed to get one day off directly after the night shift during the week or are allowed to take another day off in case of weekends or holidays night shift.

On weekends or holidays, half of the students of the general internal medicine team have shifts in the daytime. At 9 a.m., all hospitalised patients and new patients that were admitted overnight are presented to veterinarians and students. New diagnostic plans and treatments for the day are discussed and organised. These are usually done before midday as the veterinarians and the students of the night shift take over the patients at 12 p.m.

Table 4.4 Weekly schedule in the general internal medicine team of Clinic of Small Animal Medicine

<table>
<thead>
<tr>
<th>Time</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
<th>Saturday /Sunday</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:00-7:30</td>
<td>Care for hospitalised patients (30 min.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7:30-8:00</td>
<td>Takeover new patients / Day plan (30 min.)</td>
<td></td>
<td></td>
<td></td>
<td>By arrangement care for hospitalised patients ca. 8:00–12:00 (240 min.)</td>
<td></td>
</tr>
<tr>
<td>8:00-8:30</td>
<td>Morning discussion of hospitalised patients (30 min.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8:30-9:30</td>
<td>Topic rounds (60 min.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10:00-16:00</td>
<td>Further diagnostic procedures for hospitalised patients (60 min.), Appointments of new patients</td>
<td>Work on SOAPs, self-study</td>
<td>Lunch break 60 min.</td>
<td></td>
<td>15:00 – 16:30 Afternoon discussion of patients (90 min.)</td>
<td></td>
</tr>
<tr>
<td>16:00-17:30</td>
<td>Afternoon discussion of patients (90 min.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Clinical Rotation in the Clinic for Ruminants with Ambulatory and Herd Health Service

About 30 - 36 students rotate through the clinic every six weeks. They are divided into four groups (A/B= Section of Internal Medicine/Surgery, R1/R2= Section of Reproduction and Ambulatory Service), so that each group consists of about 10 students. They spend three weeks each in those sections.

On the first day of the rotation, students assemble in the lecture hall of the clinic, Sonnenstrasse 16, 85764 Oberschleissheim at 8 a.m. Protective clothing (rubber boots with steel-capped toes, overalls or scrubs), stethoscope, writing utensils and scissors are required. The clinic supplies waterproof aprons to all students during the length of the rotation. Changing rooms are available including lockers where the students can leave their belongings during the rotation. There is a lunch room with limited storage space and a stove, microwave, coke and coffee vending machines are available. There is a cafeteria in the nearby Bavarian Authority on Health and Food Safety (about 300 meters from the clinic).

In the Section of Internal Medicine and Surgery, students are exposed to a broad spectrum of cattle diseases and their treatment, e.g. neonatal calf diarrhoea, umbilical surgery, general abdominal surgery (including endoscopic approach), orthopaedics (including fracture repair) and ophthalmology. In the Section of Reproduction, all clinical aspects of ruminant andrology, obstetrics, gynecology (including udder problems) and neonatology are covered. Half of the time in this section will be spent in the clinic in Oberschleissheim (OSH), whereas the other half is held mainly at the university facility in Oberwiesenfeld. Beginning in the winter semester of 2012, new facilities in the Livestock Centre Oberschleissheim will be available for these courses, making the facilities in Oberwiesenfeld redundant. A limited number of students (about eight) rotate through the Ambulatory Service for three weeks instead of attending the regular reproduction block.

Daily physical exams of all in-patients are performed independently by the students between 8:00-9:45 a.m. Adult animals may be examined by a group of two students. Findings are documented by the students in the patient records and are discussed with the staff veterinarian responsible for the group. Treatment plans are discussed with the students and written down to be presented in rounds. Animals will be examined by the group leader with the students if findings are unclear or specific findings are of interest to all students.

Between 9:45 and 11:15 a.m. all staff veterinarians and a senior clinician go on rounds. Two students from each group can attend daily rounds. The person on duty (on-call veterinarian) is responsible for the documentation of the treatments that are being decided on. During rounds, all other students meet in the lecture hall. Each day, a different clinical subject is presented and discussed with the students.

Students’ lunch break is scheduled for 11:15 a.m.-12:00 noon but may vary according to planned surgeries or other procedures. Half of the students spend their afternoon with daily changing hands-on courses (for example claw trimming, claw surgery, teat endoscopy, fetotomy, exploration of the forestomachs in a rumen-fistulated cow, suturing, cesarean section, sperm evaluation, vaginal and rectal
examinations, endocrinology, small ruminant herd health), while the other half of the students report for clinic duty after lunch break. Groups switch halfway through the rotation. Daily treatments are carried out by the students scheduled for clinic duty starting at noon. Doctoral students and staff veterinarians provide assistance.

Surgeries are scheduled during the afternoon hours if possible, so that one to two students can assist and the rest of the group can observe. Non-emergency diagnostic procedures, such as ultrasound, radiography or endoscopy are also scheduled during the afternoon.

New patients admitted are assigned to one of the three groups and are being examined by the students (assisted by doctoral students or staff veterinarians). Students assist during history taking if time permits. Apart from a physical exam, routine admission examinations include venous blood sampling, rectal examination, ruminal fluid sampling and further diagnostic procedures depending upon the case.

Between 3:00 and 5:00 p.m., students will have time for self-study. A library and a study room equipped with standard textbooks and internet access (5 computers and WLAN) are available.

### Table 4.5  Week schedule in the Clinic for Ruminants

<table>
<thead>
<tr>
<th>Time</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
<th>Saturday /Sunday</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:00-9:45</td>
<td>Examination &amp; treatment including an adjustable break (30 min.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Shift by arrangement</td>
</tr>
<tr>
<td>9:45-11:15</td>
<td>Case demonstration: reproduction, internal medicine or surgery, herd health management/production medicine</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11:15-14:30</td>
<td>Patients handling (including adjustable lunch break of 45 min.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14:30-16:30</td>
<td>Self-study (preparation of case demonstration etc.)</td>
<td></td>
<td></td>
<td></td>
<td>Optional admission &amp; handling of new patients including an adjustable break (30 min.)</td>
<td></td>
</tr>
</tbody>
</table>

(Courses for surgery, e.g. caesarean sections in sheep or training on organs, and other seminars are not listed in this schedule)

Students scheduled for the **Ambulatory Service** will ride with the clinicians and accompany them on their farm calls. Herd health is also part of this rotation and students will not only work on individual animals but also work with the staff veterinarians on herd health issues. Seminars will also be offered to provide the
students with necessary information (for example nutrition, fertility, udder health, claw health).

**Night duty** starts at 5:00 p.m. every day. Two students are assigned each night and stay in the clinic over night (the clinic is equipped with a student’s on-call room adjacent bathroom and shower). They help with evening treatments, assist with surgeries, take the temperature of all patients at night and in the morning, check animals due to calve and assist with calvings. The students on night duty stay in the clinic but may help the ambulatory veterinarian with night calls as well. If the students did not have a minimum of six hours rest per night, they are requested to take the following day off. If this is not the case, the students may choose a different day off instead, but are requested to inform the clinic.

Allocation of the students to both **night and weekend duty** is decided by the students at the beginning of the rotation. Each Saturday and Sunday, a student of each group should be present. Duty begins at 8:00 a.m. and ends at 5:00 p.m., when the night students start. For all students working on a weekend day, one day of the following week may be taken off in compensation. The group leaders are to be informed about those off-days.

**4.1.6 Training in Veterinary Pathology**

General and special pathology is lectured during the third year of the studies. During the Clinical Year (Rotation) students gain further practical and theoretical knowledge during a block of 7 weeks. Students are trained two and a half days during those 7 weeks in the Institute of Veterinary Pathology. During this period, a total of 42 hours of seminars of special and infectious pathology, 28 hours of pathohistology, 14 hours of case demonstrations, and 6 hours of post-mortem examination practice are provided.

The seminar on infectious pathology covers about 60 infectious diseases in horses, cattle, pigs, small ruminants, dogs, cats, and rabbits with pathogens like prions, viruses, bacteria, fungi and parasites. Diseases regulated by law in Germany are given priority. The main goal of the seminar is to present each disease across all organ systems.

Selected slides used for the pathohistology courses offer the most important morphological changes of general and special pathology. The basic knowledge of the tissue and cellular variations in different pathological processes should enable students to analyze cases in a comprehensive manner.

Demonstrations of isolated organs take place as an organ rally. Students have the chance to interpret and make diagnoses under instruction based on the organ changes, especially changes relevant for meat inspection. Students have to write post-mortem examination reports to learn how to describe results objectively and in a well-structured way.
4.1.7 **Specific Information on the Practical Training in Food Hygiene/Public Health**

**Arrangements for practical training**

**Slaughterhouse Munich:**

Courses at the slaughterhouse are organised by the Institute of Food Science. Obligatory courses in meat inspection as well as slaughtering technology are carried out in the beef and pork slaughtering halls. The carcases and accompanying offal needed for the courses are rented for the duration of the course. In addition, courses on laboratory tests pertaining to meat hygiene take place in course rooms which are rented by the University in the premises of the Munich slaughterhouse.

**Food production facilities of the Institute of Food Science:**

The production of different varieties of meat products is demonstrated as part of the obligatory course in food hygiene. These demonstrations are carried out in the fully equipped small-scale meat processing facilities of the Institute of Food Science.

**Poultry slaughtering and processing plant:**

For students in the 6th and 8th semester, an elective on poultry meat production is offered by the Institute of Food Science. After a theoretical introduction, the main part of this course consists in an excursion to a poultry slaughtering and processing plant.

**Courses in meat inspection**

The obligatory practical course in meat inspection is part of the Pathology/Food Hygiene Block of the Clinical Rotation (8th or 9th semester). During this block (7 weeks), the students spend 4 hours (of 45 min) at the slaughterhouse on Tuesday (12:15 to 15:30 p.m.). The slaughterhouse is located about 5 kilometres from the main Campus of the Faculty and can be reached by public transport in about 25 minutes. One course unit is reserved for a visit to the cattle slaughtering hall, on which the students are accompanied by 4 trainers (resulting in a group size of 15-17), who demonstrate and explain the different processes along the slaughter line as well as the post-mortem inspection of cattle carcases, head, pluck set, liver and gastrointestinal tract. On the remaining 6 dates, the block is divided into 2 groups of 30-35 students. While the first group is instructed in swine post-mortem inspection, the second group takes part in laboratory courses; after 2 hours the groups are switched. Depending on the topic of the laboratory course, 2 to 3 trainers are present in the course room. Instead of a laboratory course, the students are given a tour of the slaughterhouse, especially the swine slaughtering hall on the first date of the meat inspection course in order to make them familiar with slaughter technology. The instruction in swine post-mortem inspection is carried out by 3 trainers, thus resulting in a group size of 10-12 students. On each of the dates, the main emphasis is placed on different aspects of meat inspection (examination of
curcase, pluck set, gastrointestinal tract, identification/classification/health marking, evaluation of proper dressing), while the final date is reserved for an oral and practical exam.

Courses in food hygiene

The obligatory course in food hygiene is part of the Pathology/Food Hygiene Block of the Clinical Rotation (8th or 9th semester). During the 7 weeks of the block, the students take part in 6 hours of food hygiene courses every Wednesday (9:00 a.m. to 14:00 p.m.). The courses are held in the course room and the food production facilities of the Institute of Food Science in Oberschleissheim. During this course, 2 to 3 trainers instruct the students (groups of 60 to 70) in examination methods, as well as technological and hygienic aspects in the production of different categories of food of animal origin. Practical exercises, e.g. in microbiological, histological and sensory evaluation are carried out in smaller groups of 5 to 7 students. In addition, the production of different meat products is demonstrated in the meat processing facilities of the institute (group size 30 to 35; at least twice during the course).

Courses in Hygiene and Technology of Milk

The obligatory course in milk science is held in the 7th semester. During the 14 weeks, the students take part in 28 hours of milk science courses every Thursday (10:00 a.m. to 18:00 p.m., the course is repeated three times). The courses are held in the course room of the Institute of Food Science in Oberschleissheim. During this course, 3 to 4 trainers instruct the students (groups of 60 to 70) in examination methods, as well as technological and hygienic aspects in the production of milk and milk products. Practical exercises, e.g. cytological, microbiological and chemical or biochemical methods, as well as sensory evaluation are carried out in groups of 2 to 3 students.

Table 4.6 Weekly schedule of the courses in Pathology/Food Hygiene/Meat inspection

<table>
<thead>
<tr>
<th>Time</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:00-9:00</td>
<td>Post-mortem examination</td>
<td>Animal welfare seminar</td>
<td></td>
<td>Post-mortem examination</td>
<td>Post-mortem examination</td>
</tr>
<tr>
<td>9:00-10:00</td>
<td></td>
<td></td>
<td></td>
<td>Food hygiene course</td>
<td></td>
</tr>
<tr>
<td>10:00-11:00</td>
<td>Pathology seminar</td>
<td>Self-study</td>
<td></td>
<td>Pathology seminar</td>
<td>Pathology seminar</td>
</tr>
<tr>
<td>11:00-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### 4.1.8 Obligatory Extramural Work

Extramural work is obligatory for each student with a fixed number of hours as stipulated by the TAppV. During extramural work, students have the opportunity to apply their theoretical knowledge and skills in practice and to learn and gain experience within various professional environments. Table 4.7 shows the nature of work and period of time of obligatory extramural work during the course.

#### Guidelines pertaining to extramural work

Except for the agricultural extramural training which all students must complete at the Livestock Centre Oberschleissheim, students organise their extramural work on their own. For the veterinary public health area, a list of institutions that offer extramural work is available at the Institute of Food Science.

The directives regarding obligatory extramural work are laid down in the TAppV. It regulates possible training posts and the duration (§ 55, 57, 60, 61) as well as the general content (§ 56, 62) of the extramural work. It also defines the prerequisites for veterinarians in a veterinary practice to be a supervisor of the students (§ 58). These are:

- having worked independently in a practice for at least two years
- running a veterinary pharmacy
- having had no conflict with professional legislation.

Based on the new Teaching and Examination Rules, students have to evaluate the 700-hour clinical training in order to improve the training programmes provided. Questionnaires developed by the Faculty are applied to allow standardised evaluation of the training programmes by students. A considerable number of students choose to do their extramural clinical education abroad. In the years 2010 and 2011, 39 (20.6%) and 51 (19.5%) students, respectively, went to countries like Australia, France, USA etc. for their clinical training programme.
As it is outlined in § 60 of TAppV, up to 350 hours of the 700-hour clinical training can be spent in a research institution. The questionnaires of 2010 and 2011 showed that 9.0% and 4.2%, respectively, of students completed parts of the training programme in research institutions.

**Table 4.7 Obligatory extramural work that students must undertake as part of their course**

<table>
<thead>
<tr>
<th>Nature of Work</th>
<th>Minimum period of time</th>
<th>Time during curriculum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture§</td>
<td>70 h</td>
<td>after the 1st pre-clinical exam</td>
</tr>
<tr>
<td></td>
<td>in 2 weeks</td>
<td></td>
</tr>
<tr>
<td>Veterinary public health¹</td>
<td>75 h</td>
<td>after the 2nd pre-clinical exam</td>
</tr>
<tr>
<td></td>
<td>in 2 weeks</td>
<td></td>
</tr>
<tr>
<td>Clinical training (veterinary practice or veterinary clinic)</td>
<td>150 h</td>
<td>after the 2nd pre-clinical exam</td>
</tr>
<tr>
<td></td>
<td>in a minimum of 4 weeks</td>
<td></td>
</tr>
<tr>
<td>Food hygiene and food examination²</td>
<td>75 h</td>
<td>after the 5th semester</td>
</tr>
<tr>
<td></td>
<td>in 2 weeks</td>
<td></td>
</tr>
<tr>
<td>Meat inspection³</td>
<td>100 h</td>
<td>after the 8th semester</td>
</tr>
<tr>
<td></td>
<td>in a minimum of 3 weeks</td>
<td></td>
</tr>
<tr>
<td>Clinical training (veterinary practice or veterinary clinic)</td>
<td>700 h</td>
<td>during the 10th semester</td>
</tr>
<tr>
<td></td>
<td>in a minimum of 16 weeks</td>
<td></td>
</tr>
</tbody>
</table>

§ All students do this extramural at the Livestock Centre Oberschleissheim;¹,²,³ used to calculate Ratio 10
4.1.9 Ratios

4.1.9.1 General Indicators Types of Training

<table>
<thead>
<tr>
<th>Ratio</th>
<th>Description</th>
<th>Number</th>
<th>Denominator</th>
</tr>
</thead>
<tbody>
<tr>
<td>R6</td>
<td>Theoretical training</td>
<td>A+B+C</td>
<td>2476</td>
</tr>
<tr>
<td></td>
<td>Supervised Practical Training</td>
<td>D+E+F</td>
<td>1276</td>
</tr>
<tr>
<td>R7</td>
<td>Clinical Work</td>
<td>F</td>
<td>716</td>
</tr>
<tr>
<td></td>
<td>Laboratory work and non-clinical work</td>
<td>D+E</td>
<td>658</td>
</tr>
<tr>
<td>R8</td>
<td>Self directed learning</td>
<td>C</td>
<td>162</td>
</tr>
<tr>
<td></td>
<td>Teaching load</td>
<td>A+B+C+D+E+F+G</td>
<td>5020</td>
</tr>
</tbody>
</table>

Ratios are delineated from Table 4.1.

4.1.9.2 Special Indicators of Training in Food Hygiene/Public Health

<table>
<thead>
<tr>
<th>Ratio</th>
<th>Description</th>
<th>Number</th>
<th>Denominator</th>
</tr>
</thead>
<tbody>
<tr>
<td>R9</td>
<td>Food Hygiene/Public Health</td>
<td>516</td>
<td>9.73</td>
</tr>
<tr>
<td></td>
<td>Total No. Curriculum Hours</td>
<td>5020</td>
<td></td>
</tr>
<tr>
<td>R10</td>
<td>Hours obligatory extramural work in veterinary meet inspection</td>
<td>250</td>
<td>0.48</td>
</tr>
</tbody>
</table>

* taken from Table 4.7: 1+2+3

4.2 Comments

Our approach to veterinary education is to provide students with a broad knowledge of all aspects of the veterinary profession. In Germany, only two thirds of the graduates will go into clinical practice and this percentage is decreasing. It is also well-known that many students and even a good part of the graduates are ready to change plans for their future professional life for a variety of reasons.

The need to prepare students for lifelong learning is a common-place albeit true. However, continuing education (or professional development) is not a structured course leading veterinary surgeons safely through a fast developing professional environment. During professional life, individuals must choose from a vast array of courses, seminars or workshops offered and there are certainly different or even conflicting theories and concepts presented. Academic education should not try to mimic this situation but it also should not avoid by all means that students are confronted with conflicting theories by teachers who look at problems from different
angles or perspectives. We do believe that students in a higher academic institution must learn (and are certainly able) to connect theories from different subjects when offered in a well structured order. We therefore do not aim at a streamlined course where redundancies as well as contrary concepts are completely eliminated.

The aim of our recent changes in the curriculum was to present subjects in a well-structured and logical order with an extensive hands-on clinical education as the final step. The strong research background of our teaching staff certainly influences the way of teaching and hopefully will encourage students to apply a scientific approach to professional problems later in their careers.

Graduates in Veterinary Medicine will work in a variety of fields, and the course cannot fully prepare them for any possible career path. Wherever veterinarians work, in research, in the pharmaceutical industry, in government agencies, or the food industry, they should be able to relate to the core of their education that is clinical reasoning. We therefore restructured the clinical education during the last years to provide students with a thorough understanding of clinical work as well as basic clinical skills.

4.3 SUGGESTIONS

At present, the Faculty is about to develop the fields of e-learning and e-assessment. We do have the equipment and facilities to set up a comprehensive course in e-learning. Along with this development, we try to provide more time for self-directed learning to maximise the use of new media.

We are currently applying for funds from the University to improve teaching. Within the framework of this concept, we would like to establish profiles (e.g. Vet Public Health, Food Animal Medicine etc.) among the vast array of topics offered as electives (Wahlpflichtfach). If students are committed to a certain profile for up to 308 hours during the entire curriculum, they could gain considerable expertise in a given field during the course. This could be a way to implement some form of specialisation during undergraduate studies.

NOTES
5 TEACHING AND LEARNING: QUALITY AND EVALUATION

5.1 FACTUAL INFORMATION

5.1.1 THE TEACHING PROGRAMME

The teaching programme is embedded into the framework given by the TAppV, which regulates the topics to be taught as well as the time allocated to each subject. The philosophy of the TAppV is based on the traditional paradigm of medical education, i.e. stepwise introduction of subjects, rather than problem-oriented education. In order to give a structured and detailed overview regarding subjects taught in each semester, an addendum to the Teaching and Examination Rules (Studien- und Prüfungsordnung) has been developed that allows quick and easy orientation.

The teaching programme is based on a strictly systematic approach. Entering students do not have a uniform background of natural sciences and this fact has to be taken into consideration for the first year of education. Therefore, a focus is put on basic subjects such as physics, chemistry, botany and zoology. Although repetitive for some students, teaching these subjects has been very important for students who have not had any natural sciences late in secondary school. The subject of chemistry sets an important foundation for physiology and physiological chemistry as well as clinical subjects such as pharmacology or laboratory diagnostics. Likewise, a new curriculum in the subject zoology has been developed to achieve broader understanding of biological subjects. In contrast to the systematical zoological approach taught before, it now focuses on principles in biology and it is supplemented by lectures in genetics. The lectures in physics are strictly focused on the needs of medical students and include novel topics such as physics of modern diagnostic imaging procedures and radiology. The first year also includes various lectures and courses in anatomy, ethology and radiology. Due to a strong demand of our students we have re-established a basic course of histology in the first semester that sets the basis for advanced histology and pathohistology.

The 3rd and 4th semesters are mainly dedicated to physiology, physiological chemistry and anatomy and set the foundation for the clinics. We have also included a novel subject “pathophysiology” that is meant to connect basic physiological subjects with a clinical outlook, and thus should particularly motivate students. In order to introduce the wide spectrum of veterinary medicine as early as possible, we have included quite a range of introductory lectures in the second year, including basic theories in animal breeding, propaedeutics, microbiology, and food hygiene.

Semesters 5, 6, and 7 are dedicated to clinical and paraclinical subjects as well as food hygiene. These lectures and courses are essential to set a basis for the Clinical Rotation. In many of these subjects, mandatory examinations close to the courses help the students to focus and to learn in a directed manner.

The Clinical Rotation takes place in the 8th and 9th semesters. The idea is to provide hands-on experience for each student with a high degree of self-directed learning.
and responsibility for the patients. The rotation includes small animal internal medicine, small animal surgery, horses, pigs, birds including reptiles and fishes, ruminants and a block concerning pathology and food hygiene. Each student has an individual time-table and this also considers extramural practical experience to complement the subjects taught. The Clinical Rotation is also set at a time just before the main clinical extramural experience (16 weeks) during the 10th semester. While the Clinical Rotations give a broad overview and also enable students to start working independently and to critically judge their abilities, the clinical extramural is a chance to specialize and to experience a novel setting. Finally, the 11th and last semester is dedicated to exams without any further lectures.

**Measures to ensure co-ordination**

Co-ordination is mainly the responsibility of the chairs of different disciplines. They are encouraged to compare the content of their lectures with those of others that may overlap. Due to the collection of lecture notes within the Studienportal basically covering all lectures, it is quite easy to get an overview over the topics taught by each lecturer. It should be emphasized that repetitions are necessary to highlight important topics from different perspectives. Moreover, practical courses are always used as an important consolidation of previously acquired theoretical knowledge. The same is true for e-learning tools. As outlined above, the basic subjects are interconnected in the first two years making it easier for students to draw connections between histology, physiology, embryology and physiological chemistry. Whenever possible, clinical cases and problems are introduced to offer the students a wider perspective. This was the reason to introduce pathophysiology in the 4th semester and also to offer courses in sonography at a time when basic physiology, anatomy and clinics are taught.

Teaching in clinical subjects during semesters 5 to 7 is strictly organised by disciplines. Since these subjects are taught in parallel during a very short period of time (3 semesters), students at this stage of education on a university level are able to make connections between subjects easily.

**Didactic approach**

With a yearly intake of 290 students, it is a great challenge to face individual needs, especially given the fact that paedagogy distinguishes at least four primary learning styles: visual, auditory, read-write, and kinaesthetic.

Didactic lectures are considered to be an indispensable teaching tool on the university level. The lectures should set the basis and are thus an important framework in the systematic teaching approach. They are supplemented by various practical courses whenever possible. These courses also are essential to allow a more personal contact between students and teachers.

Other very important teaching tools are the elective courses that each student has to choose throughout the curriculum. These electives can be seen as a first possibility to specialize. In addition, due to their variety and quality, they are now an indispensable addendum to the standard subjects. Sometimes only two or three students can learn together with teachers and all kinds of learning environments
from lectures to internet-based classes, from excursions to lab experience can be found.

“I never teach my pupils. I only attempt to provide the conditions in which they can learn.” (Albert Einstein). To meet the needs of all different kinds of students, we also provide a huge collection of different learning material (see course notes) that range from simple PDF files to interactive tutorials, teaching programmes and movies covering many aspects of veterinary medicine.

A comprehensive approach of teaching is not possible and will ultimately lead to frustration of the students. Therefore, we encourage all teachers to focus on exemplary teaching, thus providing students with the basic tools to continue with life-long learning. This aspect of self-directed learning is emphasized throughout the course. We provide excellent facilities, especially computer rooms that are essential for self-directed learning.

The most important factor for the quality of teaching are the teachers themselves and we are very happy to have highly dedicated teachers that take pride in teaching and invest a lot of time for students.

**Course notes**

All lecturers provide at least PDFs of the powerpoint files prior to their respective lectures. Students can access these files in the "Studienportal" and download them (see Chapter 8). This is generally appreciated by the students, as it saves students lots of time and money to gather all the required teaching materials.

Students are thus able to decide if they want to bring hardcopies of the PDFs to the lectures in order to add notes or to ask questions if an issue remains misunderstood.

Currently, almost all institutions participate in this service for the students and make their respective documents available for download (number of files: 1347 PDFs).

In addition lecturers can post additional information, literature etc. within the context of the respective virtual room of their course. This can also be used to offer online tests for repeating the topics of lectures. For the computer access the CIP pool is run by the Faculty’s IT-Group (“Rechnerbetriebsgruppe”) pertaining to the Veterinary Faculty. There are 35 computers in the central campus and another 50 in Oberschleissheim available for students during the opening hours (8 a.m. to 8 p.m.).

All clinics have published syllabi of examination topics, ranked according to importance.

We recently have acquired a microscope scanner and are currently building up a virtual microscopy service. A first programme dealing with food microscopy has already been launched and as next steps the histology and pathohistology slides will follow.

Part of the teaching material used by the lecturers can also be purchased at a copy-shop located nearby. There is also a “Script-Club” organised by students.
Established arrangements between the Faculty and outside bodies

There are several subjects where the Faculty relies on the expertise of lecturers from outside bodies:

- Physics: Prof. Dr. Otmar Biebel and PD Walter Assmann from the Faculty of Physics (LMU University of Munich)
- Botany: Prof. Günther Heubl from the Faculty of Biology (LMU)
- Veterinary professional legislation (in parts): Prof. Theo Mantel, President of the Federal and Bavarian Chambers of Veterinary Surgeons
- Radiology: Dr. Michael Peller from the Institute for Clinical Radiology at the Klinikum University Munich
- Dr. Knieriem, the Director of the Munich Zoo, holds seminars and electives on zoo animal medicine. In addition there is a regular cooperation between the Munich Zoo and the Clinic for Birds as well other units of the Faculty.

5.1.2 The teaching environment

Staff development facilities

The University offers many different courses in didactic and personnel management. The programme “PROFIL” is meant for young lecturers to improve their skills in the fields of language, rhetorics and didactics. The personnel management programme offers a wide variety of seminars available for all lecturers that cover essentially every aspect of teaching, but also various additional soft skill seminars such as leadership seminars, time management, leading discussion groups and so on.

Since the University has been successful in gaining a 23 Million Euro grant solely devoted to the improvement of teaching, there will be novel offers that not only extend the previous offers, but also will attempt to adapt teaching seminars to the needs of individual faculties.

Systems for reward of teaching excellence

There are nationwide as well as Bavarian prizes for teaching excellence, however they are highly competitive. In the new grant mentioned above there will be additional prizes available.

5.1.3 The examination system

Central examination policy

The examinations are regulated in detail in Chapter 2 of the TAppV. The Faculty defines the forms of examination in the Teaching and Examination Rules. Currently different types of examinations are used: written, oral, Objective Structured Clinical Examinations, single or multiple choice, or a combination of these. The ranks for single/multiple choice tests, the timetable for taking the examinations in the various
disciplines, the prerequisites for admittance of the students to the examinations, and the maximum of time to pass the examination in a discipline after admittance are all laid down in the Teaching and Examination Rules which are published on the website of the Faculty (http://www.vetmed.uni-muenchen.de/index.html).

The examinations in veterinary medicine are state examinations and thus are under the supervision of the District Government of Upper Bavaria and not of the University or the Faculty itself. The examinations are carried out by members of the Board of Examiners, one for the Preclinical Veterinary Examinations (Vorphysikum and Physikum) and one for the Veterinary Examinations (Tierärztliche Prüfung). The members of these Boards are professors of the subjects included or very experienced staff members. They are chosen by the University and then confirmed by the District Government of Upper Bavaria. The running matters of examinations are organised by the chairmen of the Board of Examiners with support of the local Examination Office.

- Chairman Preclinical Veterinary Examination: Prof. Dr. Fred Sinowatz
- Chairman Veterinary Examination: Prof. Dr. Joachim Braun

**Examination periods**

The examinations are held during the lecture-free time between two semesters (time without teaching). The final exams are scheduled during the 11th semester.

**External examiners.**

Some subjects are taught and then also examined by external professors. These are:

- Physics: Prof. Dr. Otmar Biebel and PD Walter Assmann from the Faculty of Physics (LMU)
- Botany: Prof. Günther Heubl from the Faculty of Biology (LMU)
- Veterinary professional legislation (in parts): Prof. Theo Mantel, President of the Bavarian Chamber of Veterinary Surgeons

**Retakes, time of examination, admission to examinations, and start of other courses**

According to § 17 of the TAppV, a maximum of two retakes of each examination in a subject is allowed. An additional member of the Board of Examiners must be present at the second retake.

Students have to pass all examinations of a period (Preclinical Veterinary Examination and Veterinary Examination) including retakes within one year after admittance to the examination period. This duration may only be extended in case of illness upon medical certificate. In case of composite exams, each component of the exam must be passed.
According to § 8 of the Teaching and Examination Rules of the Faculty, students can only participate in the courses of the following semester if they have passed the preceding examinations as follows:

- Admission to the First Preclinical Veterinary Examinations is granted after the first year.
- Participation in seminars and practicals in physiology, physiological chemistry (biochemistry) is only possible for students who have successfully passed at least three exams of the First Preclinical Veterinary Examinations, including chemistry.
- Admission to the Second Preclinical Veterinary Examinations is permitted when all seminars and practicals in physiology, physiological chemistry and anatomy have been passed.
- Admission to the clinical part of studies is permitted when a minimum of three out of five examinations of the Second Preclinical Veterinary Examinations have been passed.
- Admission to Semester 6th requires that all examinations of the Second Preclinical Veterinary Examinations have been passed.
- Admission to Semester 8th requires that at least 6 out of 8 examinations during the clinical part (according to §29 TAppV) have been passed.
- Admission to the Final Veterinary Examinations (Semester 11th) requires that all lectures, seminars, electives, clinical work and extramural work during the clinical part (according to §29 TAppV) had been attended.

Format of examinations

The format of the examinations is regulated in § 9 and 10 of the Teaching and Examination Rules of the Faculty. Table 5.4 summarizes the exams (see below):

Table 5.4 Subjects and format of examinations

<table>
<thead>
<tr>
<th>Topic</th>
<th>Semester</th>
<th>Percentage</th>
<th>Form</th>
<th>Part of Exam</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physics</td>
<td>1</td>
<td>100</td>
<td>written</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; Preclinical Veterinary Examinations</td>
</tr>
<tr>
<td>Botany</td>
<td>1</td>
<td>100</td>
<td>oral</td>
<td></td>
</tr>
<tr>
<td>Chemistry</td>
<td>2</td>
<td>100</td>
<td>oral</td>
<td></td>
</tr>
<tr>
<td>Zoology</td>
<td>2</td>
<td>100</td>
<td>multiple-choice</td>
<td></td>
</tr>
<tr>
<td>Topic</td>
<td>Semester</td>
<td>Percentage</td>
<td>Form</td>
<td>Part of Exam</td>
</tr>
<tr>
<td>-------------------------------------------------</td>
<td>----------</td>
<td>------------</td>
<td>------------</td>
<td>--------------</td>
</tr>
<tr>
<td>Anatomy</td>
<td>4</td>
<td>100</td>
<td>oral</td>
<td></td>
</tr>
<tr>
<td>Histology and embryology</td>
<td>4</td>
<td>100</td>
<td>oral</td>
<td></td>
</tr>
<tr>
<td>Biochemistry</td>
<td>4</td>
<td>100</td>
<td>oral</td>
<td></td>
</tr>
<tr>
<td>Physiology</td>
<td>4</td>
<td>100</td>
<td>oral</td>
<td></td>
</tr>
<tr>
<td>Animal breeding and genetics</td>
<td>4</td>
<td>100</td>
<td>oral</td>
<td></td>
</tr>
<tr>
<td>Clinical propaedeutics Part A</td>
<td>6</td>
<td>50</td>
<td>multiple-choice</td>
<td></td>
</tr>
<tr>
<td>Clinical propaedeutics Part B</td>
<td>6</td>
<td>50</td>
<td>OSCE#</td>
<td></td>
</tr>
<tr>
<td>Radiology</td>
<td>6</td>
<td>100</td>
<td>multiple-choice</td>
<td></td>
</tr>
<tr>
<td>Pharmacology and toxicology</td>
<td>6</td>
<td>100</td>
<td>multiple-choice</td>
<td></td>
</tr>
<tr>
<td>Internal medicine Part A</td>
<td>6</td>
<td>25</td>
<td>multiple-choice</td>
<td></td>
</tr>
<tr>
<td>Internal medicine Part B</td>
<td>7</td>
<td>25</td>
<td>multiple-choice</td>
<td></td>
</tr>
<tr>
<td>Internal medicine Part C</td>
<td>1</td>
<td>50</td>
<td>OSCE#</td>
<td></td>
</tr>
<tr>
<td>Animal husbandry and animal hygiene</td>
<td>6</td>
<td>100</td>
<td>oral</td>
<td></td>
</tr>
<tr>
<td>Poultry diseases Part A</td>
<td>6</td>
<td>50</td>
<td>multiple-choice</td>
<td></td>
</tr>
<tr>
<td>Poultry diseases Part B</td>
<td>1</td>
<td>50</td>
<td>oral</td>
<td></td>
</tr>
<tr>
<td>Meat hygiene Part A</td>
<td>6</td>
<td>50</td>
<td>multiple-choice</td>
<td></td>
</tr>
<tr>
<td>Meat hygiene Part B</td>
<td>1</td>
<td>50</td>
<td>oral</td>
<td></td>
</tr>
<tr>
<td>Food sciences and food hygiene Part A</td>
<td>6</td>
<td>70</td>
<td>multiple-choice</td>
<td></td>
</tr>
<tr>
<td>Food sciences and food hygiene Part B</td>
<td>1</td>
<td>30</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>Topic</td>
<td>Semester</td>
<td>Percentage</td>
<td>Form</td>
<td>Part of Exam</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>----------</td>
<td>------------</td>
<td>-----------------------</td>
<td>--------------</td>
</tr>
<tr>
<td>Manufacture and prescription of medicine Part A</td>
<td>7</td>
<td>50</td>
<td>multiple-choice</td>
<td></td>
</tr>
<tr>
<td>Manufacture and prescription of medicine Part B</td>
<td>8/9</td>
<td>50</td>
<td>written</td>
<td></td>
</tr>
<tr>
<td>Bacteriology and mycology</td>
<td>7</td>
<td>100</td>
<td>oral</td>
<td></td>
</tr>
<tr>
<td>Milk sciences Part A</td>
<td>7</td>
<td>80</td>
<td>multiple-choice</td>
<td></td>
</tr>
<tr>
<td>Milk sciences Part B</td>
<td>1</td>
<td>20</td>
<td>written</td>
<td></td>
</tr>
<tr>
<td>Parastitology</td>
<td>7</td>
<td>100</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>Reproduction medicine Part A</td>
<td>7</td>
<td>50</td>
<td>multiple-choice</td>
<td></td>
</tr>
<tr>
<td>Reproduction medicine Part B</td>
<td>1</td>
<td>50</td>
<td>oral</td>
<td></td>
</tr>
<tr>
<td>Animal nutrition</td>
<td>7</td>
<td>100</td>
<td>oral</td>
<td></td>
</tr>
<tr>
<td>Virology</td>
<td>7</td>
<td>100</td>
<td>oral</td>
<td></td>
</tr>
<tr>
<td>Pathology and pathological histology</td>
<td>1</td>
<td>100</td>
<td>oral</td>
<td></td>
</tr>
<tr>
<td>Surgery and anaesthetics Part A</td>
<td>1</td>
<td>50</td>
<td>multiple-choice</td>
<td></td>
</tr>
<tr>
<td>Surgery and anaesthetics Part B</td>
<td>1</td>
<td>50</td>
<td>oral</td>
<td></td>
</tr>
<tr>
<td>Forensic veterinary medicine and veterinary professional legislation</td>
<td>1</td>
<td>100</td>
<td>oral</td>
<td></td>
</tr>
<tr>
<td>Animal protection, welfare, and ethology</td>
<td>1</td>
<td>100</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>Epizootic control and epidemiology of infectious diseases</td>
<td>1</td>
<td>100</td>
<td>oral</td>
<td></td>
</tr>
</tbody>
</table>

*Objective Structured Clinical Examination, * combination of multiple-choice and written parts
Guidelines for examiners in oral exams

- The Faculty has developed guidelines for oral examinations which are published on the website.
- The examiner must not discriminate on the basis of gender or nationality of the candidate.
- The examiner must not favour individual candidates or put them to a disadvantage.
- The examiner must not be biased on the basis of prior events (e.g. failed previous exams).
- The examiner should communicate with all candidates equally both verbally and non-verbally. This concerns in particular: friendliness, level of questions, reaction to wrong or missing answers, kind of assistance.
- The examiner must not be influenced by language difficulties or speech impediments of candidates, but must take them into account.
- During the entire exam, the examiner must avoid to consciously unsettle a candidate in any way or to create anxiety (e.g. by ironic remarks, looking at the watch during the pauses of the candidate, table drumming, arranging papers, etc.).
- The examiner must not be unfair or insulting, or create such an impression.
- The examiner must devote his undivided attention to every candidate.
- In group exams, questions not answered by one candidate should not be passed on.
- Unnecessary waiting periods before or during exams are to be avoided.
- If possible, the examiner should be changed for repeat exams.
- The examiner is encouraged to comply with set minimum or maximum times for examining individual candidates.

5.1.4 Evaluation of Teaching and Learning

According to Article 30 of the Bavarian Higher Education Act (Bayerisches Hochschulgesetz), the Dean for Student Affairs is in charge of the Faculty-wide evaluation of teaching and learning. Since winter semester 2007/2008, the Office for students services organises the planning, the distribution of evaluation sheets, and - after the evaluation - the generation of ranking scales. Furthermore, the Dean for Student Affairs writes a teaching report once a year for the Faculty Council and the University Executive Board.

There is no obligation for students to evaluate, but if they want, they can evaluate:

Lectures and obligatory courses

Evaluation of lectures takes place many times a semester with varying subjects and professors. Evaluation of obligatory courses (e.g. biochemistry, bacteriology and
mycology, food stuff, physiology, anatomy, chemistry, and parasitology) takes place once a year.

**Clinical Rotation**

Evaluation of the Clinical Rotation takes place once a year. The students evaluate all parts of the Rotation. For every clinical part, there is one evaluation form (2 pages). Students have to evaluate the different kinds of trainings (e.g. clinical case studies, clinical trainings, and seminars), organisation and quality of assistance by giving marks. They also have the possibility of making comments and suggestions. Every clinic gets its own results, so that the responsible persons can react.

The professors come to know their rank within an anonymous (due to data privacy) scale. As a follow-up to the evaluation, the professors are asked on a voluntary basis to discuss the critical points with the students.

Independently from the Faculty-wide evaluation, the different clinics and sometimes institutes and chairs conduct internal evaluations with students, making use of questionnaires, written suggestions and direct discussions.

Since the „Studienportal“ (see Chapter 8) provides the technical framework to simplify data collection, storage and analysis, measures have been taken in order to implement a Faculty-wide standardized evaluation system. In a first step, pilot evaluations within the “Studienportal” have been performed using open source software (paper and pen evaluation). The ease of handling was appreciated and proof of principle has been shown. However, meanwhile the University bought a campus-wide license of a commercial Software package (EvaSys®) which is already paid for until 2017. Moreover, the Faculty will receive free of charge two scanning Systems with EvaSys® software, allowing for high throughput scanning of hardcopy evaluation sheets.

The division e-learning & assessment of the IT-Group will continue to support Faculty-wide evaluation systems. EvaSys® will be compared with the open source solution within the “Studienportal”. Depending on the outcome either the open source solution will be recommended or for those preferring to use paper and pen evaluation EvaSys® will be integrated into the “Studienportal”. The main goal is to speed up the process of evaluation and the feedback to students.

### 5.1.5 STUDENT WELFARE

Assistant in finding accommodation, sports activities, organisation of leisure time, or catering is offered by the Munich Student Administration, a central unit of the LMU University of Munich.

- Munich Student Administration *(Studentenwerk München)*
- Leopoldstrasse 15
- 80802 München
- Telephone: 089/ 38196 - 0
- Website: www.studentenwerk-muenchen.de
Sports/Recreation

The Sport Centre of Munich Technical University (Zentraler Hochschulsport der Technischen Universität München, ZHS) offers students and employees of all universities in Munich, Freising, and Landshut a varied programme. With a clientele of about 90,000 students and over 15,000 active participants, the ZHS is the biggest establishment for university sport in Germany.

All the recreation activities and courses are published in a leaflet twice yearly. Over 100 different sports and over 600 single activities are offered. The main sport centre is located out of the campus at the Olympic Park. It has 11 sports halls, generously spaced sports facilities with 15 football pitches, 7 beach volleyball fields, a climbing tower, 22 tennis courts, and a golf course.

Additionally, the Olympic swimming pool as well as a water sports area at the Starnberger See can be used for sailing and surfing and in parts the Olympic regatta facility in Oberschleissheim for canoeing and rowing. Courses and tours in the Bavarian Alps are organised in summer and in winter.

There are many other leisure activities that are organised by the LMU, such as an university choir, an university orchestra, a theatre group, protestant and catholic societies.

Canteens/cafeterias

On the main campus of the Faculty, there are no canteens or cafeterias. The main canteen of the University is located within walking distance at Leopoldstrasse 13a. It is run by the Munich Student Administration (Studentenwerk München). Opening hours are Mon.-Thu. 9:00 a.m. to 5:00 p.m. and Fri. 9:00 a.m. to 3:00 p.m. throughout the year. Integrated into the main canteen is a cafeteria that serves smaller dishes. Another cafeteria very close to the campus is located at the seminar building of the Munich Law School of the University.

Foreign students/Studying abroad

Special care is given to foreign students from the Munich Student Administration. Not only are they guaranteed a place in one of the dormitories, but also dedicated tutors are provided to make their settling-in easier. This is a contribution by the Munich Student Administration to attract more foreign students to German universities.

The Faculty has partnerships with the following veterinary educational institutions:
Table 5.5  Cooperation with establishments abroad

<table>
<thead>
<tr>
<th>Country</th>
<th>Establishment</th>
<th>Contact person(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>Faculty of Veterinary Medicine, University of Sydney</td>
<td>Prof. Müller</td>
</tr>
<tr>
<td>France</td>
<td>Ecole Nationale Vétérinaire de Toulouse</td>
<td>Dr. S. von Rosenberg</td>
</tr>
<tr>
<td>Japan</td>
<td>Obihiro University of Agriculture and Veterinary Medicine</td>
<td>Prof. Braun</td>
</tr>
<tr>
<td></td>
<td>Faculty of Veterinary Medicine, Sapporo University</td>
<td></td>
</tr>
<tr>
<td>Spain</td>
<td>Faculty of Veterinary Sciences, University of Zaragoza</td>
<td>Dr. S. von Rosenberg</td>
</tr>
<tr>
<td>Taiwan</td>
<td>Department of Veterinary Medicine, National Chung Hsing University</td>
<td>Prof. Braun</td>
</tr>
<tr>
<td>Turkey</td>
<td>Istanbul Üniversitesi Veteriner Fakültesi</td>
<td>Prof. Korbel</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Prof. Erhard</td>
</tr>
</tbody>
</table>

Around eight to thirteen Erasmus students from mainly other European countries come to the Munich Faculty every semester (e.g. Austria, Czech Republic, France, Hungary, Italy, Poland, Portugal, Spain, Slovenia). Likewise, each year about 13-16 students from Munich spend their 5th semester abroad, mainly in France and Spain. Since students going abroad have usually an excellent proficiency of the foreign language in question, they are able to follow lectures and even take exams.

The society Veterinarians without Borders (Tierärzte ohne Grenzen) offers students opportunities to get involved in foreign aid projects. Problems and experiences are discussed at seminars and lectures.

**Advising**

The Munich Student Administration (Studentenwerk München) offers advice about scholarship possibilities, offers general study advice, career guidance, psychosocial, and psychotherapeutic advice (including free consultations and short therapies for study related problems and personal conflict situations; advice on work assignment and study techniques), advice for handicapped students, and legal advice (free of charge for German and foreign students).

The Office of Federal Training Assistance (Bafög) answers general questions on the topic of subsidised student loan.

Specific study advice is given from the Faculty itself. Study advice and career guidance are given to veterinary students enrolled and graduated from the
University. It is recommended to make an appointment with one of the responsible professors.

Six female permanent staff members serve as Women’s Representatives at the Veterinary Faculty:

- Prof. Dr. Cornelia Poulsen-Nautrup
- Prof. Dr. Katrin Hartmann
- PD Dr. Cornelia Deeg
- Dr. Britta Dobenecker
- Dr. Birgit Viertlböck
- Dr. Beate Walter

The Dean for Student Affairs helps students who encounter problems and facilitates a trouble-free running of the Faculty.

The students nominate two Ombudsmen in case they want to discuss confidential matters with a trusted third party. Presently these are:

- Prof. Dr. Heidrun Potschka
- Prof. Dr. Manfred Stangassinger

Students may also turn to their Student Council (Tel: 089 / 2180 – 3744 [http://www.derkabu.de/]) when encountering questions or problems. The Student Council of the Veterinary Faculty consists of 8 representatives elected each year. Its main responsibility lies in taking care of students’ concerns on a daily basis and in the Faculty Council. Furthermore, they organise tutorial groups for freshmen and various other events.

5.2 COMMENTS

One demand of the new curriculum was that subjects ought to be taught as applied as possible, resulting in more practical work in smaller groups. Undoubtedly, this has been implemented successfully into the Clinical Rotation resulting in an extraordinary improvement of teaching quality, but also in an immense additional burden on teaching personnel.

Although some of the other German veterinary faculties have chosen to use teaching modules (e.g. circulation, respiration, each including all aspects, i.e. anatomy, physiology, pharmacology, clinical aspects, and pathology), we believe that the concept and inherent structure of a given subject (e.g. bacteriology) is lost by teaching in modules. In addition, experiences from other establishments have shown that teaching in “patchwork” modules is accompanied with an extraordinary increase in coordination and organisational workload. Our approach to teaching hopefully enables students to interconnect disciplines through parallel courses. There are more or less three blocks of teaching during the course. The first block (4 semesters) concentrates on basic subjects. The second block (semester 5 – 7) provides the theoretical (mainly clinical) knowledge required to enter the third block (intra- and extramural clinical education). Within each block, with a maximum of 4
semesters, students on a university level should be able to connect information of related subjects.

Our current curriculum is a mix of innovative concepts (clinical rotation, e-learning) and more traditional ways of teaching (lectures, seminars). We are very positive that this mix allows students to acquire all the necessary knowledge and skills. Traditionally, lectures have not been very interactive and sometimes have had too high a content of information. This is, however, highly dependent on the personality of the lecturer as well as the equipment available in the lecture hall. In two of our lecture halls, mainly used for lectures in clinical fields, new equipment has been installed providing the option of interactive lectures that integrate diverse media and provide multiple means for interactive courses (voting system, video transmission from surgical theatres etc.).

We have established a faculty-wide system of evaluation which gives students a chance to evaluate all lectures, seminars, obligatory courses and the clinical rotation at least once a year. They also have the possibility of making comments and suggestions. Every teacher and all clinics get their own results, so that the responsible persons can react. Due to federal regulations, the results of evaluation concerning individual persons cannot be published. However, the constant use of evaluations has certainly had a positive effect.

Since the last evaluation by EAEVE in 2002, we have introduced quite a number of written examinations to provide for more objectivity in examinations. In two subjects, we now use OSCE (Objective Structured Clinical Examination) to improve examination of clinical skills. We have also introduced split exams to schedule part of an exam (e.g. Internal Medicine, Reproduction) close to the end of the semester in which the relevant lectures are given, while the other part is used to examine complex clinical knowledge and skills at the end of the course (11th semester. The Faculty has developed guidelines for oral examinations which are published on the website. These guidelines give a thorough instruction to avoid many pitfalls of oral exams.

5.3 SUGGESTIONS

We will continue to develop the system of written examinations. In addition, we will implement e-assessment in the near future.
6 FACILITIES AND EQUIPMENT

6.1 FACTUAL INFORMATION

6.1.1 PREMISES IN GENERAL

Main Campus of the Veterinary Faculty (Fig. 6.1, Number 1, Enlargement on right side Buildings A to Z)

- Veterinärstrasse 13, 80539 Munich
- Public transportation:
  - Metro station: “Universität” (line U3 und U6)
  - Bus station: “Universität” (bus 154)

This is the historic site where the Faculty was established in 1790. Due to restriction in space, satellite facilities (see below) were established after the war. In 1985, the Faculty decided to move all clinics to the new Campus in Oberschleissheim. Meanwhile, this decision has been revised so that the official goal of the Faculty is now to establish the entire Faculty on the Oberschleissheim Campus. This is in accordance with suggestions made by EAEVE after the visitation in 2002.

Comparative Tropical Medicine and Parasitology (Fig. 6.1, Number 2)

- Leopoldstrasse 5, 80802 Munich
- Public transportation:
  - Metro station: “Giselastrasse” (line U3 und U6)
  - Bus station: “Georgenstrasse” (bus 154)
  - ca. 8 minutes walk from main campus

Palaeoanatomy, Domestication Research and History of Veterinary Medicine and Fishery Biology and Fish Diseases (Fig. 6.1, Number 37 on right side)

- Kaulbachstrasse 37, 80539 Munich
- Public transportation:
Metro station: “Universität” (line U3 und U6)
Bus station “Universität” (bus 154)
ca. 1 minute from main campus

Fig. 6.2 Facilities Schwere-Reiter-Strasse „Oberwiesenfeld”

Facilities Schwere-Reiter-Strasse „Oberwiesenfeld“ (Fig. 6.2:)

- Schwere-Reiter-Strasse 9, 80797 Munich
- Public transportation:
  - Bus/Tram station: “Leonrodplatz” (tram 12, 20 und 21 and bus 53)
  - ca. 30 minutes by public transport from the main campus

During World War II, most buildings on the main campus were destroyed. Since a number of military horse barns and a military horse hospital from nearby barracks had been accommodated here, these facilities were used to start the veterinary course in the post-war period. Later on, these facilities were used mainly for experimental animals (Physiology, Animal Nutrition, Reproduction Medicine etc.).

Molecular Animal Breeding and Biotechnology (not shown on a map)

This institution is split on two sites for good reasons. One part is located within the Gene Centre of the University in Grosshadern (subway U6, 20 minutes from main campus). The Laboratory for Functional Genome Analysis (LAFUGA; www.lafuga.de) provides cutting-edge technology in the fields of genome analysis, transcriptomics and proteomics. The biotechnology and EU-accredited Embryo Transfer Station of this chair is located in Badersfeld, about 3 kilometres from the Campus Oberschleissheim. The Bavarian Government made a major investment of 5 Mio € to build a new facility for genetically tailored pig models in Badersfeld.
Campus Oberschleissheim

Public transportation from Main Campus:

- Suburban train station: “Oberschleissheim” (line S1)
- ca. 15 minutes walk

Fig. 6.3 Campus Oberschleissheim

- Livestock Centre Oberschleissheim (Fig. 6.3, Number 1), St.-Hubertus-Strasse 12, 85764 Oberschleissheim
- Clinic for Birds, Reptiles, Amphibians and Ornamental Fish (Fig. 6.3, Number 2), Sonnenstrasse 18, 85764 Oberschleissheim
- Clinic for Ruminants, Clinic for Swine (Fig. 6.3, Number 3), Sonnenstrasse 16, 85764 Oberschleissheim
- Institute of Food Science, Chair for Animal Nutrition and Dietetics (Fig. 6.3, Number 4), Schönleutnerstrasse 8, 85764 Oberschleissheim

The Bavarian Authority for Health and Food Safety is located north of the Campus Oberschleissheim, just across Veterinärstrasse (see map). A formal cooperation has been agreed on with this institution in the field of Veterinary Public Health and related fields.
### 6.1.2 Premises Used for Clinics and Hospitalisation

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

<table>
<thead>
<tr>
<th>Species</th>
<th>Clinic</th>
<th>No. places</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Regular hospitalisation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cattle</td>
<td>Clinic for Ruminants</td>
<td>31 cows</td>
</tr>
<tr>
<td></td>
<td></td>
<td>55 calves</td>
</tr>
<tr>
<td>Small ruminants</td>
<td>Clinic for Ruminants</td>
<td>20</td>
</tr>
<tr>
<td>Camelids</td>
<td>Clinic for Ruminants</td>
<td>2</td>
</tr>
<tr>
<td>Horses</td>
<td>Clinic for Horses</td>
<td>28</td>
</tr>
<tr>
<td>Pigs</td>
<td>Clinic for Swine</td>
<td>56</td>
</tr>
<tr>
<td>Dogs</td>
<td>Clinic of Small Animal Medicine</td>
<td>11; 10 (ICU)</td>
</tr>
<tr>
<td></td>
<td>Clinic of Small Animal Surgery and Reproduction</td>
<td>43; 6 (ICU)</td>
</tr>
<tr>
<td>Cats</td>
<td>Clinic of Small Animal Medicine</td>
<td>12; 10 (ICU)</td>
</tr>
<tr>
<td></td>
<td>Clinic of Small Animal Surgery and Reproduction</td>
<td>29; 4 (ICU)</td>
</tr>
<tr>
<td>Small mammals</td>
<td>Clinic of Small Animal Surgery and Reproduction</td>
<td>28</td>
</tr>
<tr>
<td>Birds</td>
<td>Clinic for Birds, Reptiles, Amphibians and Ornamental Fish</td>
<td>57 boxes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>7 aviaries</td>
</tr>
<tr>
<td>Reptiles</td>
<td>Clinic for Birds, Reptiles, Amphibians and Ornamental Fish</td>
<td>25</td>
</tr>
<tr>
<td><strong>Isolation facilities</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Farm animals and horses</td>
<td>Clinic for Ruminants</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Clinic for Swine</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Clinic for Horses</td>
<td>1</td>
</tr>
<tr>
<td>Small animals</td>
<td>Clinic of Small Animal Medicine</td>
<td>37</td>
</tr>
<tr>
<td></td>
<td>Clinic of Small Animal Surgery and Reproduction</td>
<td>6</td>
</tr>
</tbody>
</table>
Isolation facilities of the Clinic for Swine

The Clinic for Swine only admits pigs for the diagnostic work-up of herd problems. These animals are all euthanized without exception and then submitted to post-mortem examination.

If animals are referred with a suspicion of an infectious disease, they are housed in the isolation facility. This facility is only accessible from the outside and has an area of 16.8 square metres and has two boxes with about 5.5 square metres each with solid floor, trough and nipple waterer. The floor and entire walls are covered with tiles. Ventilation is separate from the outside. Room temperature is regulated with a radiator. There is a sink with warm and cold water and dispensers for soap and disinfection solution. There is also a connection to the central disinfection system.

The effluents of the isolation facility are collected in the slurry pit of the clinic. In case of suspicion of a highly contagious infectious disease, the pit is not emptied, until the suspicion has been cleared. During this time separate clothing remains in the facility, no patients are admitted, and no visitors are allowed. The examination, sample collection, and euthanasia all take place in the isolation facility. In case of reportable diseases, the state veterinarians are involved and give directions.

Isolation facilities of the Clinic for Ruminants with Ambulatory and Herd Health Services

The Clinic for Ruminants with Ambulatory and Herd Health Services in the Centre for Clinical Veterinary Medicine of the LMU Munich has 8 isolation stalls of 17 – 20 m\(^2\) each. One isolation stall has an electrical hoisting crane. Each stall has room for two cows, but only one cow or two calves from one farm are housed in any one of the stalls. Each stall is only accessible from outside, and can be secured with a lattice door. Of course, there is a firm steel door, as well.

Each isolation stall has a protective “cage” with a sink, washing lotion and disinfection solution, a faucet for a water hose, a connection to the central steam cleaning system, and a connection to the central disinfection system. Each stall is also connected to the video and computer system of the clinic.

Ventilation is by vacuum created by ventilators integrated in a window. Each stall also has a connection to the central milking vacuum. Cows are milked with individual bucket milking equipments. The liquid manure from four of the eight isolation stalls can be collected, treated, and disposed of separately from the liquid manure from the others.

The isolation stalls were designed to deal with infectious diseases like IBR, BVD, salmonellosis, and Johne’s disease, but not with highly contagious diseases like FMD. If isolation of an animal is necessary, access to its stall will be limited to authorized personnel, and specific SOPs will be followed, a print-out of which is attached to the stall door. In cooperation with the local state veterinarians, a concept for disposal of animal excretions and carcases has been worked out.
Isolation facilities of the Clinic for Horses

The Clinic for Horses has several horse barns which are suitable for isolation of horses. In case an animal is isolated, disposable protective clothing is used by anyone entering the facility. A plastic container with a disinfectant solution for the disinfection of rubber boots is placed in front of the facility.

Presently, the professorships for internal medicine as well as reproduction in Horses are vacant. As a consequence a Chair for Internal Medicine in Horses (including reproduction) has been created and the appointment procedure with our prime candidate is already under way. It will be the responsibility of the new chairholder to adjust and develop protocols for prevention of introduction, and spread, of infectious diseases like EHV infection or EIA.

Isolation facilities of the Clinic of Small Animal Medicine

The Clinic of Small Animal Medicine in the Centre for Clinical Veterinary Medicine of the LMU Munich has five separate isolation wards that are used for patients carrying infectious diseases.

Isolation ward 1 is used for highly infectious diseases in cats, such as Herpes- and Calicivirus infections. It has a hermetically sealed hygiene lock as well as a negative pressure ventilation system and a separate waste water collecting system. Besides, this isolation ward has an extra entrance from outside. Thus, it can also be used for severe outbreaks of dangerous epidemic or zoonotic diseases (such as highly pathogenic influenza-virus infection in cats). Isolation ward 1 has space for nine small to medium sized animals. It has its complete own equipment, such as fluid pumps, shaver, venous catheters, syringes, etc. After animals have been hospitalized in this ward, all disposable material is completely changed. Isolation ward 1 is separated into two areas, one cage area and one treatment and storage area.

Isolation ward 2 is mostly used for canine and feline patients suffering from parvovirosis. It also has a hygiene lock and offers space for up to six animals. Disposables are also renewed after infectious patients are discharged. Isolation wards 3 and 4 are used for dogs suffering from infectious diseases other than parvovirosis, such as distemper. Both wards have an own indoor walk that can easily be cleaned, to keep these patients separated from the environment. Isolation ward 3 offers space for two large dogs and five medium-sized or small dogs, and isolation ward 4 has five boxes for large dogs. Isolation ward 5 is used for cats and small dogs with infectious diseases of any other origin. It has space for ten animals. Every isolation ward is completely disinfected after a patient has been hospitalized. This includes not only disinfection of the cage, but also of floors, tables, walls, and indoor walks.

Everybody entering one of the isolation wards has to wear special hygiene coats, over-shoes, and gloves that have to remain inside the isolation ward and must not be taken outside. When leaving an isolation ward, people have to step on a disinfection mat. People dealing with patients carrying infectious diseases are allocated to these animals only and do not get in contact with other patients. All
kinds of infected material (blankets, faeces, etc.) are collected separate from the rest of the clinic waste.

The Clinic of Small Animal Surgery and Reproduction has a small number of isolation boxes for emergency cases. Usually cases with suspected infectious diseases are referred to the Clinic for Small Animal Medicine. New isolation boxes will be added for wild animals and cats in the near future.

**Isolation facilities Clinic for Birds, Reptiles, Amphibians and Ornamental Fish**

There are isolation and quarantine facilities that serve to avoid the spread of infectious and zoonotic agents and to isolate poisonous reptiles and amphibians:

- Wild birds: Quarantine for Avian Influenza: Isolation room 11,2 m²
- Avian patients: Isolation room 14,8 m²; Aviary for wild birds and birds of prey: 19,4 m²
- 11 rooms for experiments with infectious agents 88,7 m²
- Poultry: 9 rooms 122,4 m²
- Reptiles, amphibians, and ornamental fish: 9 rooms 122,4 m²
- Isolation of poisonous reptiles and amphibians: 1 room 19,1 m²

The most important infectious diseases for the classes of vertebrates the clinic serves are salmonellosis, pasteurellosis (fowl cholera), tuberculosis, psittacosis, ornithosis, avian influenza, Newcastle disease, infections by herpesviruses and Borna disease virus.

In the working area for reptiles, amphibians, and ornamental fish, several highly poisonous animals are examined and treated. In accordance with specific legislation, there is a separate room including a safety lock, and glass doors for full views. The specially trained and authorized personnel includes seven veterinarians and technicians.

**6.1.3 Premises for Animals for Teaching Purpose**

**Animals kept within clinical facilities for teaching purposes**

All clinics, except the Small Animal Clinics, keep clinic-owned animals for teaching purposes (see also 7.1.3).

- Clinic for Swine: 11 sows and litter
- Clinic for Birds: 800 animals
- Clinic for Ruminants: 80-100 sheep, 20 cows, 2 bulls
- Clinic for Horses: 5 mares, 1 stallion
Livestock Centre Oberschleissheim

Fig. 6.4 Aerial photograph of the Livestock Centre Oberschleissheim

The Livestock Centre covers an area of approx. 390 ha of which 303 ha are agricultural area. It has a maximum capacity for keeping 422 heads of cattle and 996 pigs. In December, 2011, the bovine herd counted 296 and the number of pigs was 882. Within the barns of the LVC, animals are kept under different housing conditions:

Cattle

- loose barn (cow shed) – milking cows
- stanchion barn \(\rightarrow\) for calving and cows under veterinary treatment
- loose barn with fully slatted units \(\rightarrow\) beef cattle and other growing cattle
- loose barn with partly and fully slatted floor \(\rightarrow\) heifers
- loose barn with partly slatted floor \(\rightarrow\) cattle for reproduction training (new)
- separate calf hutches (calf tels) \(\rightarrow\) newborn calves
- open calf barn (deep litter straw)

Pigs

- breeding barn -- piggery (fully slatted floor); AI centre; farrowing units
- multi purpose barn for growing pigs (fully slatted floor)
- multi purpose barn for boars and other pigs (concrete floor with straw)
FACILITIES AND EQUIPMENT

- outer climate barn for pregnant sows and growing pigs (deep straw, partly slatted floor)
- outdoor range with shelter units
- additionally: small pasture for cattle and alpacas (with special shelter)

Anatomy, Histology and Embryology

In the so-called ultrasound lab, students can bring their own pets and be trained in diagnostic ultrasound techniques. Four ultrasound machines are available.

Animal Nutrition and Dietetics

At the Oberwiesenfeld satellite, 50 dogs (beagles-foxhound mixture), 31 cats, 4 ponies, 200 quails and chickens are kept and used for research and teaching. A number of other institutions of the Faculty (e.g. clinics, anatomy, ethology, small animal reproduction unit) have access to these animals for teaching purposes.

Molecular Animal Breeding and Biotechnology

Students participating in the Clinical Rotation of the Clinic for Swine do have access to 300 pigs kept on the Experimental Farm in Badersfeld. Additionally, up to 12 bulls and 70 cows at the EU-standard bovine Embryo Transfer Station on the same farm can be used for the compulsory course in Reproduction Medicine.

Animal Welfare, Ethology, Animal Hygiene and Animal Housing

This institution has facilities on the Oberwiesenfeld satellite for laying hens (1180), European minks (180), chinchillas (20), and horses (2). On the main campus there are 40 cages for laying hens and a multipurpose room for rodents.
6.1.4 Premises Used for Theoretical, Practical, and Supervised Teaching

### Table 6.2 Lecture halls

<table>
<thead>
<tr>
<th>Location</th>
<th>Seats</th>
</tr>
</thead>
<tbody>
<tr>
<td>Building “Mittelbau”</td>
<td>96</td>
</tr>
<tr>
<td>Veterinary Anatomy, Histology and Embryology</td>
<td>180</td>
</tr>
<tr>
<td>Institute of Infectious Diseases and Zoonoses/Institute of Veterinary Pathology</td>
<td>146</td>
</tr>
<tr>
<td>Building Zoology (Kaulbachstr. 37)</td>
<td>230</td>
</tr>
<tr>
<td>Clinic of Small Animal Medicine</td>
<td>173</td>
</tr>
<tr>
<td>Clinic of Small Animal Surgery and Reproduction</td>
<td>176 (Koeniginstr. 12)</td>
</tr>
<tr>
<td></td>
<td>155 (Koeniginstr. 14)</td>
</tr>
<tr>
<td>Clinic for Ruminants/Clinic for Swine</td>
<td>90</td>
</tr>
<tr>
<td>Livestock Centre Oberschleissheim</td>
<td>120</td>
</tr>
</tbody>
</table>

### Table 6.3 Premises for clinical work and student training

<table>
<thead>
<tr>
<th>Dogs, cats, other pets</th>
<th>No. consulting rooms</th>
<th>Clinic of Small Animal Surgery and Reproduction</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Clinic of Small Animal Medicine</td>
<td>11</td>
</tr>
<tr>
<td>No. surgical suites</td>
<td>Clinic of Small Animal Surgery and Reproduction</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>No. diagnostic imaging examination and radiation therapy area</td>
<td>Clinic of Small Animal Medicine</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Clinic of Small Animal Surgery and Reproduction</td>
<td>10</td>
</tr>
<tr>
<td>Equine and food animals</td>
<td>No. examination areas</td>
<td>Clinic for Horses</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Clinic for Ruminants</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Clinic for Swine</td>
<td>1</td>
</tr>
<tr>
<td>No. surgical suits</td>
<td>Clinic for Horses</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>No. diagnostic imaging</td>
<td>Clinic for Ruminants</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>
### Table 6.4  Premises for non-practical supervised group work

<table>
<thead>
<tr>
<th>Location</th>
<th>No. of rooms</th>
<th>Seats</th>
</tr>
</thead>
<tbody>
<tr>
<td>Veterinary Anatomy, Histology and Embryology</td>
<td>1</td>
<td>30</td>
</tr>
<tr>
<td>Physiology, Physiological Chemistry</td>
<td>6</td>
<td>10 to 25</td>
</tr>
<tr>
<td>Institute of Food Science</td>
<td>2</td>
<td>10 / 20</td>
</tr>
<tr>
<td>Animal Genetics and Husbandry, Molecular Animal Breeding and Biotechnology</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Animal Ethology, Animal Hygiene and Animal Housing</td>
<td>1</td>
<td>40</td>
</tr>
<tr>
<td>Palaeoanatomy, Domestication Research and History of Veterinary Medicine</td>
<td>1</td>
<td>25</td>
</tr>
<tr>
<td>Institute of Infectious Diseases and Zoonoses</td>
<td>1</td>
<td>24</td>
</tr>
<tr>
<td>Comparative Tropical Medicine and Parasitology</td>
<td>1</td>
<td>20</td>
</tr>
<tr>
<td>Pharmacology, Toxicology and Pharmacy</td>
<td>1</td>
<td>24</td>
</tr>
<tr>
<td>Clinic of Small Animal Medicine</td>
<td>3</td>
<td>20 each</td>
</tr>
<tr>
<td>Clinic of Small Animal Surgery and Reproduction (Radiology)</td>
<td>1</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>10 / 20</td>
</tr>
<tr>
<td>Clinic for Ruminants</td>
<td>3</td>
<td>15/20</td>
</tr>
<tr>
<td>Clinic for Swine</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>Clinic for Birds, Reptiles, Amphibians and Ornamental Fish</td>
<td>3</td>
<td>6 / 25 / 25</td>
</tr>
</tbody>
</table>

Rooms for non-practical supervised group work are mostly used for electives. They may be equipped with a beamer and computers. In several cases, the library of the institution is used for seminars or group work. In the clinics these rooms are also used for students who work up cases etc. during the Clinical Rotation (self-study). In some cases these rooms are equipped with microscopes (cytology samples etc.). In the Clinic of Small Animal Surgery and Reproduction a room (Radiology) for
demonstrating digital x-rays is used for clinical rounds, electives and group work during the Clinical Rotation.

**Table 6.5 Premises for non-diagnostic practical group work used by all students**

<table>
<thead>
<tr>
<th>Location</th>
<th>Purpose</th>
<th>Seats</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anatomy, Histology and Embryology</td>
<td>Anatomic theatre</td>
<td>250</td>
</tr>
<tr>
<td></td>
<td>Course in Histology</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>Ultrasound lab</td>
<td>8</td>
</tr>
<tr>
<td>Physiology, Physiological Chemistry</td>
<td>Courses in Physiology, Physiological Chemistry</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td></td>
<td>40</td>
</tr>
<tr>
<td>Institute of Food Science</td>
<td>Examination of meat, meat products and milk products</td>
<td>80</td>
</tr>
<tr>
<td>Animal Nutrition and Dietetics</td>
<td>Course in Animal Nutrition and Dietetics</td>
<td>60</td>
</tr>
<tr>
<td>Institute of Infectious Diseases and Zoonoses</td>
<td>Examination of microorganisms</td>
<td>56</td>
</tr>
<tr>
<td>Comparative Tropical Medicine and Parasitology</td>
<td>Examination of parasites</td>
<td>60</td>
</tr>
<tr>
<td>Pharmacology, Toxicology and Pharmacy</td>
<td>Manufacturing of drugs</td>
<td>24</td>
</tr>
<tr>
<td>Clinic of Small Animal Surgery and Reproduction</td>
<td>Surgery Course (cadavers)</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>Surgery Course (cadavers)</td>
<td>15</td>
</tr>
<tr>
<td>Clinic for Horses</td>
<td>Surgery Course</td>
<td>15</td>
</tr>
<tr>
<td>Clinic for Ruminants</td>
<td>Necropsy Room</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>Surgery course (cadavers)</td>
<td>10</td>
</tr>
<tr>
<td>Institute of Veterinary Pathology</td>
<td>Course Pathohistology</td>
<td>75</td>
</tr>
<tr>
<td></td>
<td>Necropsy room</td>
<td>80</td>
</tr>
<tr>
<td>Livestock Centre Oberschleissheim</td>
<td>Semen evaluation</td>
<td>12</td>
</tr>
<tr>
<td>Slaughterhouse Munich</td>
<td>Meat hygiene</td>
<td>40</td>
</tr>
</tbody>
</table>

These rooms are used for obligatory practical group work. Due to the capacity of these rooms, a class of students has to be split into 4 or more sub groups to accommodate all students.
Health and safety measures

Safety measures of the rooms comply with the regulations for the corresponding safety levels. In laboratories dealing with chemicals, a bed, flues, emergency showers, eye rinsing equipment and first aid sets are installed. Designated first aid staff in every institute and clinic ensures that the relevant regulations are followed.

6.1.5 Diagnostic Laboratories and Clinical Support Services

Diagnostic laboratories not used for student practical work

Due to the high research activity in all institutions, labs primarily used for research are a part of almost every institution. However, a number of electives deal with very specific topics where those labs are used to demonstrate and teach specific techniques.

Central clinical support services

A clinical laboratory for the Small Animal clinics as well as the Clinic for Horses is available on the main campus. This lab provides diagnostic services like haematology, urine and faeces examinations, clinical chemistry, enzyme examinations, hormone investigations, cytological examinations and cell cultivation. The Clinic for Ruminants and the Clinic for Swine in Oberschleissheim run a common diagnostic laboratory.

The Institute of Infectious Diseases and Zoonoses and the Chair for Comparative Tropical Medicine and Parasitology have diagnostic labs which offer services to the institutions of the Faculty as well as external institutions and practitioners.

The Institute of Veterinary Pathology offers service to all clinics of the Faculty and private veterinarians.

Central diagnostic imaging

MRI, Scintigraphy and 3-D ultrasonography are used both by the equine and small animal clinics on the main campus. X-ray equipment and fluoroscopy, digital luminescent radiography, computer tomography and ultrasound are available.

Other services offered by the Veterinary Faculty

Chair for Animal Nutrition and Dietetics

The following services are offered to practising veterinary surgeons, veterinarians active in the industry, and to animal owners:

- Control of rations of healthy animals, especially of puppies for the prevention of nutritional skeletal damages
- Dietary consultations for sick animals, in co-operation with the veterinary surgeon treating the patient
FACILITIES AND EQUIPMENT

- Problem analyses in potentially nutrition-induced diseases
- Hygiene quality control of feedstuff
- Feedstuff analysis
- Control and correction of food rationing. Calculation of rations
- Dietary consultations for special performances, or in case of diseases
- Problem analyses in potentially nutrition-induced diseases
- Contact address for nutritional enquiries:
  ernahrungsberatung@tiph.vetmed.uni-muenchen.de

Chair for Animal Welfare, Ethology, Animal Hygiene and Animal Housing

The institute provides a consulting service for practitioners and animal owners, veterinary authorities, other governmental and private institutions on aspects of animal welfare, animal behaviour and of animal hygiene including barn design, barn climate and environmental hygiene.

Individual behavioural therapy consulting and training hours (also by phone) are held for owners of domestic and companion animals (dogs, cats, small mammals like guinea pigs, rabbits and rats, birds and horses) by appointment. The institute can be contacted Monday through Friday from 8:00 a.m. to 4:00 p.m. (089-21 80 78300).

Behaviour tests are offered to characterise dogs and to categorise dogs with increased aggression and dangerous nature (Landesstraf- und Verordnungsgesetz, LStVG about dogs with increased aggression and dangerousness). The institute offers veterinary students behavioural therapy consulting free of charge for their pet animals.

6.1.6 Slaughterhouse Facilities

The slaughterhouse in Munich is an EU approved private slaughtering and cutting plant with separate slaughtering halls for cattle and pigs. Approximately 75,000 cattle and 270,000 pigs/piglets are slaughtered per year. The cattle slaughtering hall has a daily slaughtering capacity of 200 tonnes, on average 70 animals are slaughtered per hour. On the premises of the slaughterhouse, various associated businesses like coldstores, wholesale markets and meat processing operations are located. The distance from the main campus of the Faculty to the slaughterhouse is 5 kilometres. For courses on laboratory tests pertaining to meat hygiene, a course room with 40 places is available within the premises of the Munich slaughterhouse.

6.1.7 Foodstuff Processing Unit

For further information on meat inspection and foodstuff courses see Chapter 4.1.6: Specific information on the practical training in food hygiene/public health.
6.1.8 WASTE MANAGEMENT

The Institute of Veterinary Pathology takes care of the central carcase disposal of the Faculty. Outside office hours a cold storage room of the institute with limited capacity may be used after contacting the gatekeeper. Rendering of cadavers is done by a commercial company, which used to be an official rendering plant (Tierkörperverwertungsanstalt).

The Clinic for Ruminants stores carcases and animal parts that are not kept for necropsy in a container. These cadavers are then taken care of either by the Bavarian Authority for Health and Food Safety (Bayerisches Landesamt für Gesundheit und Lebensmittelsicherheit) or from a commercial rendering plant. The municipal composting plant manages solid faeces, while specialized companies collect and dispose liquid manure and waste milk.

Waste from laboratories and other chemical substances are collected in separate containers and then disposed of as special waste, if required by law. All waste from laboratories or any materials contaminated by infectious and/or genetically modified organisms are autoclaved. This includes bedding and excrements of animals used in infection experiments. Waste is usually sorted according to its main consistency such as paper/carton, PVC, glass or metal. It gets collected by a private recycling firm. Remaining waste is disposed by the municipal refuse collection.

6.1.9 MAJOR BUILDING WORK SINCE 2002 AND FUTURE CHANGES

At the time of the last evaluation in 2002, the Clinic for Ruminants, the Clinic for Swine and the facilities for Food Science as well as Animal Nutrition and Dietetics were still under construction.

After extensive restoration of an historic building on the main campus, the Chair of Animal Welfare, Ethology, Animal Hygiene and Animal Housing could move from provisional facilities on a satellite campus (Oberwiesenfeld) back to the main campus in 2010 (4.5 Mill €).

The Bavarian Government has granted 5.0 Mill Euros to build a new pig experimental station in Badersfeld for the Chair for Molecular Animal Breeding and Biotechnology.

The Ministry for Sciences, Research and the Arts has decided in April, 2012, to finance a new facility for the Institute of Infectious Diseases and Zoonoses (Bacteriology and Mycology; Virology) on the new campus in Oberschleissheim. In addition, a lecture hall with a capacity of 300 seats and a cafeteria will be added to that Campus.

6.2 COMMENTS

With the decision, in 2010, to move the entire Faculty to the New Campus, the Faculty has set an ambitious goal. Although the realisation of this plan will lie in the indefinite future, this decision marks an important signal to the university and the competent authorities. The move of institutions from the old to the new campus will
FACILITIES AND EQUIPMENT

Further improve the standard of our facilities. A single campus will increase the efficiency of collaboration among institutions and facilitate teaching.

The number of lecture halls is sufficient. Unfortunately, there is no lecture hall that seats an entire class (maximum 290 students). We use video-cameras to transmit lectures in Gross Anatomy to an adjacent room. A new multi-purpose video system which allows questions and interactions from all sites connected has been acquired recently. We appreciate the fact that construction of a lecture hall with 300 seats will start in 2013 on the Campus Oberschleissheim. This facility will be used to the maximum extent to alleviate this problem.

The buildings are adequate for undergraduate teaching. Although the layout of buildings for the clinics on the Campus Englischer Garten does not allow implementation of certain central services (e.g. common reception for clients), the clinics are equipped with the latest technology (see Chapter 7) and conform to the standards of a university animal hospital. The operation theatres of the Clinic for Small Animal Surgery and Reproduction will be modernized and expanded starting in 2012. Maintenance of buildings and rebuilding works are done regularly so that buildings conform to the guidelines for fire prevention and safety measures.

6.3 SUGGESTIONS

As soon as the new lecture hall in Oberschleissheim can be used, we will organise blocks to be taught entirely in Oberschleissheim on a given day to minimize the need for students and teachers to commute between sites.

NOTES

........................................................................................................................................

........................................................................................................................................

........................................................................................................................................

........................................................................................................................................

........................................................................................................................................

........................................................................................................................................
7 ANIMALS AND TEACHING MATERIAL OF ANIMAL ORIGIN

7.1 FACTUAL INFORMATION

7.1.1 ANATOMY

Table 7.1 Material used in practical anatomical training

<table>
<thead>
<tr>
<th></th>
<th>Dogs / cats</th>
<th>small ruminants / pigs</th>
<th>equine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cadavers</td>
<td>126</td>
<td>132</td>
<td>23</td>
</tr>
<tr>
<td>limbs from cadavers</td>
<td>176</td>
<td>190</td>
<td>28</td>
</tr>
<tr>
<td>feet</td>
<td>0</td>
<td>0</td>
<td>80</td>
</tr>
</tbody>
</table>

Around 20 private-owned dogs and 10 clinic-owned horses are used for palpation and ultrasound practice. Approximately 200 hens euthanatized for medical reasons are used regularly for anatomical training. In addition, around 30 mice, rats, hamsters, rabbits are used in elective subjects.
### 7.1.2 Pathology

Table 7.2 Number of necropsies over the past 3 years

<table>
<thead>
<tr>
<th>Species</th>
<th>Number of necropsies</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2011</td>
<td>2010</td>
</tr>
<tr>
<td><strong>Food-producing animals</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cattle</td>
<td>45</td>
<td>45</td>
</tr>
<tr>
<td>Small ruminants</td>
<td>56</td>
<td>29</td>
</tr>
<tr>
<td>Pigs</td>
<td>324</td>
<td>326</td>
</tr>
<tr>
<td><strong>Other farm animals</strong></td>
<td>27</td>
<td>24</td>
</tr>
<tr>
<td><strong>Equine</strong></td>
<td>71</td>
<td>69</td>
</tr>
<tr>
<td><strong>Companion animals</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dogs</td>
<td>153</td>
<td>171</td>
</tr>
<tr>
<td>Cats</td>
<td>259</td>
<td>252</td>
</tr>
<tr>
<td><strong>Other pets</strong></td>
<td>106</td>
<td>284</td>
</tr>
</tbody>
</table>
### ANIMALS AND TEACHING MATERIAL OF ANIMAL ORIGIN

<table>
<thead>
<tr>
<th>Species</th>
<th>Number of necropsies</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2011</td>
<td>2010</td>
</tr>
<tr>
<td>Poultry</td>
<td>1200</td>
<td>1100</td>
</tr>
<tr>
<td>Reptiles/fish</td>
<td>60</td>
<td>72</td>
</tr>
<tr>
<td>Zoo animals</td>
<td>132</td>
<td>107</td>
</tr>
<tr>
<td>Laboratory animals</td>
<td>204</td>
<td>207</td>
</tr>
</tbody>
</table>

**Additional sources of material for the teaching of necropsies and pathological anatomy**

An average of 3055 biopsy samples has been sent to the pathology during the years 2009 through 2011. Twice a week teaching material, such as livers, lungs etc., is collected from the slaughterhouse. The abattoir provides all materials free of charge.

The **Bavarian Authority for Health and Food Safety** is located adjacent to the Campus Oberschleissheim. This Authority runs a pathology department where cadavers from farm animals are inspected. There is a formal collaboration with this institution which includes the use of the pathology department for students during their clinical education at the Clinic for Ruminants and Clinic for Swine. Since 2012, an experienced staff member of the Institute of Pathology is delegated to this institution to teach necropsies to those students attending the Clinical Rotation. In 2011, 293 cattle and 15 small ruminants were sent to the Pathology Department of the Bavarian Government Agency for Health and Food Safety.
7.1.3 ANIMAL PRODUCTION

On the site of the institutions

Table 7.3 Food-producing animals available for practical teaching of students on the site of the Faculty

<table>
<thead>
<tr>
<th>Clinic for Ruminants</th>
<th>80-100 sheep, 20 cows, 2 bulls</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinic for Swine</td>
<td>11 sows and litter, 2 boars</td>
</tr>
<tr>
<td>Clinic for Birds, Reptiles, Amphibians and Ornamental Fish</td>
<td>800 animals</td>
</tr>
<tr>
<td>Livestock Centre Oberschleissheim</td>
<td>300-350 cattle, 900-950 pigs</td>
</tr>
<tr>
<td>Molecular Animal Breeding and Biotechnology – Embryo Transfer Station Badersfeld</td>
<td>82 cattle, 250 pigs</td>
</tr>
</tbody>
</table>

7.1.4 FOOD HYGIENE / PUBLIC HEALTH

For the courses in meat inspection, swine carcasses are rented, while pluck sets and gastrointestinal tracts are provided free of charge. Each group of 10-12 students is supplied with two carcase halves, one pluck set and one gastrointestinal tract.

The Institute of Food Science acquires and provides foodstuff and diagnostic material for the courses in food hygiene. In each course unit, the students have the opportunity to examine 10 to 20 samples of different meat products, fishery products, honey and eggs, depending on the topic of the course unit. The Institute of Food Science also provides foodstuff and diagnostic material for the courses in milk science. In the specific course units, the students have the opportunity to examine different samples of milk, fermented milk products, butter and cheese.

7.1.5 CONSULTATIONS AND PATIENT FLOW SERVICES

7.1.5.1 CONSULTATION

The clinics of the Faculty operate all year round. In clinics, there are specific consultation hours listed (e.g. Small Animal Reproduction 8:15 – 10:00 a.m.), additional individual appointments are scheduled to accommodate all clients’ requests.
### Table 7.4 Consultations hours and emergency service of the clinics

<table>
<thead>
<tr>
<th>Clinic</th>
<th>Consultations</th>
<th>Emergency service</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Clinic of Small Animal Medicine</strong></td>
<td>Mon-Thu 8:00-18:30</td>
<td>24h/day/year</td>
</tr>
<tr>
<td></td>
<td>Fri 8:00-16:30</td>
<td></td>
</tr>
<tr>
<td><strong>Clinic of Small Animal Surgery and Reproduction</strong></td>
<td>Surgery and orthopaedics Mon-Fri 10:00-12:00 Thu-Fri 14:00-15:00</td>
<td>24h/day/year</td>
</tr>
<tr>
<td></td>
<td>Ophthalmology Mon &amp; Wed 14:00-15:30</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Small mammals and dentistry Mon-Thu 8:15-9:45</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Reproduction Mon-Fri 8:15-10:00</td>
<td></td>
</tr>
<tr>
<td><strong>Clinic for Ruminants</strong></td>
<td>Mon-Fri 8:00-17:00</td>
<td>24h/day/year*</td>
</tr>
<tr>
<td><strong>Clinic for Swine</strong></td>
<td>Mon-Fri 8:00-17:00</td>
<td>on-call: 24h/day/year</td>
</tr>
<tr>
<td><strong>Clinic for Horses</strong></td>
<td>Mon-Fri 8:00-17:00</td>
<td>on-call: 24h/day/year</td>
</tr>
<tr>
<td><strong>Clinic for Birds, Reptiles, Amphibians and Ornamental Fish</strong></td>
<td>Birds Mon, Tue, Thu and Fri 14:00-16:00 Wed 16:00-18:00</td>
<td>on-call: 24h/day/year*</td>
</tr>
<tr>
<td></td>
<td>Ornamental Fish Thu 14:00-16:00</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Reptiles and amphibians Mon, Tue and Thur 15:00-17:00 Wed 16:00-18:00 Fri 14:00-16:00</td>
<td></td>
</tr>
<tr>
<td><strong>Institute of Veterinary Pathology</strong></td>
<td>Mon-Fri 8:00-17:00</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sat 10:00-12:00</td>
<td></td>
</tr>
</tbody>
</table>

* both in the clinic and for ambulatory service
### 7.1.5.2 Patient Flow

Table 7.5 Numbers of cases: a) received for consultation, and b) hospitalised in the Faculty clinics

<table>
<thead>
<tr>
<th>Species</th>
<th>Number of cases</th>
<th></th>
<th></th>
<th></th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>2011</td>
<td>2010</td>
<td>2009</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>a</td>
<td>b</td>
<td>a</td>
<td>b</td>
</tr>
<tr>
<td><strong>Species</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Food-producing animals</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bovine</td>
<td></td>
<td>42</td>
<td>1096</td>
<td>56</td>
<td>1362</td>
</tr>
<tr>
<td>Ovine, caprine</td>
<td></td>
<td>25</td>
<td>358</td>
<td>15</td>
<td>291</td>
</tr>
<tr>
<td>Porcine</td>
<td></td>
<td>85</td>
<td>380</td>
<td>100</td>
<td>477</td>
</tr>
<tr>
<td>Other farm animals*</td>
<td></td>
<td>1</td>
<td>21</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td><strong>Equine</strong></td>
<td></td>
<td>394</td>
<td>788</td>
<td>382</td>
<td>763</td>
</tr>
<tr>
<td><strong>Companion animals/ exotics</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Canine</td>
<td></td>
<td>11417</td>
<td>5466</td>
<td>10394</td>
<td>4878</td>
</tr>
<tr>
<td>Feline</td>
<td></td>
<td>5244</td>
<td>2493</td>
<td>4051</td>
<td>1918</td>
</tr>
<tr>
<td>Small mammals</td>
<td></td>
<td>2049</td>
<td>839</td>
<td>1318</td>
<td>382</td>
</tr>
<tr>
<td>Birds</td>
<td></td>
<td>1817</td>
<td>1365</td>
<td>1982</td>
<td>1245</td>
</tr>
<tr>
<td>Reptiles</td>
<td></td>
<td>644</td>
<td>326</td>
<td>877</td>
<td>405</td>
</tr>
<tr>
<td>Fish</td>
<td></td>
<td>35</td>
<td>3</td>
<td>45</td>
<td>4</td>
</tr>
</tbody>
</table>

*Camelids
7.1.6 VEHICLES FOR ANIMAL TRANSPORT

The Clinic for Ruminants possesses a lorry and a small cattle trailer. In the Clinic for Swine, two vans with a small trailer and one car are available. In most cases, farmers organise the transport of their animals to the clinic. The Institute of Veterinary Pathology and the Clinic for Birds, Reptiles, Amphibians and Ornamental Fish each have one VW van at disposal. The Clinic for Horses has a van and a trailer. Patients are transported to the clinic and transferred back to the owner on request.

7.1.7 ON-CALL EMERGENCY SERVICE

See Table 7.4.

7.1.8 ON-FARM TEACHING AND OUTSIDE PATIENT CARE

7.1.8.1 AMBULATORY (MOBILE) CLINIC

The Clinic for Ruminants, the Clinic for Swine and the Clinic for Birds provide ambulatory services. The Ambulatory Service in the Clinic for Ruminants is called to individual cases (Table 7.6a) as well as for herd visits (Table 7.6b). The Ambulatory Services of the Clinic for Swine and the Clinic for Birds perform herd visits only. 2-5 students take part in the Ambulatory Service in one vehicle for 6 to 8 hours. One Ford Mondeo and two VW transports are available. The Ambulatory Service in the Clinic for Ruminants usually runs 2 vehicles during weekdays whereas one vehicle is in operation during nights and on weekends.

Within the framework of the Clinical Rotation in the Clinic for Birds, the attendance of the Mobile Clinic to poultry farms in the average of 8 hours is obligatory. This is done with a VW bus. Students also visit the Munich Zoo for an elective offered by the clinic.
### Table 7.6a  Number of individual cases seen by the Ambulatory (Mobile) Clinic of the Clinic for Ruminants

<table>
<thead>
<tr>
<th>Species</th>
<th>Number of patients</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2011</td>
<td>2010</td>
</tr>
<tr>
<td>Food-producing animals</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cattle</td>
<td>7576</td>
<td>7560</td>
</tr>
<tr>
<td>Small ruminants</td>
<td>543</td>
<td>561</td>
</tr>
<tr>
<td>Other animals*</td>
<td>90</td>
<td>86</td>
</tr>
</tbody>
</table>

* Llamas, alpacas, circus animals, dogs and cats of farmers

#### 7.1.8.2  Other on-farm services and outside teaching

### Table 7.6b  Number of herds/flocks visited

<table>
<thead>
<tr>
<th>Species</th>
<th>Number of visits</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2011</td>
<td>2010</td>
</tr>
<tr>
<td>Cattle (no. of farms; range of herd size)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>53 (45-320 heads)</td>
<td>48</td>
<td>30</td>
</tr>
<tr>
<td>48 (40-300 heads)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pigs (no. of farms; range of herd size)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>45 (20-2000 sows)</td>
<td>40</td>
<td>40</td>
</tr>
<tr>
<td>40 (20-1000 sows)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poultry(^1) (no. of flocks; range of flock size)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 (100-15000)</td>
<td>9</td>
<td>8</td>
</tr>
<tr>
<td>6 (100-15000)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poultry(^2) (range of flock-size)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 (100-27000)</td>
<td>17</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>110</td>
<td>114</td>
</tr>
</tbody>
</table>

\(^1\) Visits on the basis of a contract that allows regular herd visits with students.

\(^2\) Visits because of herd problems
The cattle and the pig herd of the Livestock Centre in Oberschleissheim is another important source for teaching herd management and herd health to students during the Clinical Rotation and within the framework of special electives.

7.1.9 ADDITIONAL INFORMATION ON CLINICAL FACILITIES

Small Animal Clinics

These clinics were built for a discipline-oriented approach more than 50 years ago and this general design still influences the operation of these clinics. Access of patients in the Clinic of Small Animal Medicine to facilities for diagnostic imaging or surgery is not as easy as it should be due to the layout of the facilities. Vice versa, the services offered in the Clinic of Small Animal Medicine (e.g. Intensive Care Unit) require patients of the Clinic of Small Animal Surgery and Reproduction to be taken to the other clinic. Although these facilities were repeatedly refurbished to accommodate modern equipment, the basic layout of buildings and rooms cannot be changed.

Despite these sub-optimal conditions, installations and equipment are generally better than those of outside practices, resulting in superior patient care. The highly qualified staff in these clinics is another factor which gives our clinics an advantage over very well equipped private clinics which operate in the periphery of Munich. Another favourable factor is that the University Clinic can be contacted at any time and emergency shifts work around the clock.

Roughly 80 % of cases in the Clinic of Small Animal Medicine are first opinions and the remaining 20 % are referrals. In the Clinic of Small Animal Surgery and Reproduction approximately 30 % of all patients are primary and 70 % are referrals. The current proportion is adequate for teaching purposes since ‘standard’ cases as well as problem cases are available for teaching.

Fees are charged according to the Federal Regulation of Charges for Veterinarians (Gebührenordnung für Tierärzte - GOT). Owners are given an estimate of cost when admission to the stationary clinic proves necessary.

The relationship with outside practitioners is generally good. Outside practitioners are asked to inform the Clinic before referral either per telephone, fax or e-mail. Short introduction of patients, problems, completed examinations, the desired service and requested examinations should be given. While owners get information about results of examinations and recommendations to therapy, practitioners receive a more detailed report including all test results, interpretation and suggested therapeutic options after the patient has been discharged.

All clinics, the Institute of Pathology and the Institute of Infectious Diseases and Zoonoses (Virology, Bacteriology and Mycology) use a common computer programme for administration of patient data (VETERA). Data can be searched for scientific purposes according to patient number, owner, disease and laboratory results.

In the Clinic of Small Animal Medicine, more or less all specialisations are represented by diplomates of European Colleges or board certified national
ANIMALS AND TEACHING MATERIAL OF ANIMAL ORIGIN

specialists: Gastronenterology, Urology, Cardiology, Dermatology, Oncology, Infectious diseases, Neurology, Nutrition, Pneumology, Endocrinology, Emergency medicine, Internal medicine. All specialisations are equipped with the latest technology for diagnostic and therapeutic purposes. The latest addition is the Linear Accelarator for radiation therapy.

The level of specialisation, diagnostic and therapeutic equipment of the Clinic of Small Animal Surgery and Reproduction exceeds that of most private practitioners. Below is a list of services:

- Reproduction:
  - Artificial insemination (intrauterine endoscopic), semen cryopreservation, obstetrics, reproduction medicine

- Diagnostic imaging:
  - digital X-ray, computed tomography, sonography, scintigraphy, magnetic resonance imaging, mobile C-arm
  - Computerised gait analysis
  - Diagnosis of lameness, validation of orthopaedic therapies

- Diseases of pet animals:
  - Traumatology, soft tissue & bone surgery, dental diseases, micro and minimal invasive surgery
  - Neurosurgery
  - Orthopaedics, Traumatology:
    - Joint replacements, fracture treatment, reconstructive joint surgery, physiotherapy, arthroscopy

- Soft tissue surgery:
  - Thoracic & abdominal surgery, oncogenic surgery, plastic and reconstructive surgery

- Dental diseases:
  - Parodontology, dental preservation, dental prothesis (crown of tooth)

- Ophthalmology:
  - Full eye exams incl. gonioscopy, adnexal surgery, corneal surgery, phacoemulsification (ECLE/ICLE), IOL implants, vitrectomy, transscleral laser photocyclococagulation

Clinic for Horses

What has been said pertaining to the buildings of the Small Animal Clinics, similar conditions apply to the Clinic for Horses. Again, the facilities for the Clinic are distributed over three buildings, which previously hosted patients in the field of reproduction, surgery and internal medicine. Despite these unfavourable conditions, the Clinic for Horses is well equipped with the latest technology, especially in
diagnostic imaging. At present, the sections in internal medicine and reproduction do not run at full speed because the position for a new chair-holder (internal medicine including reproduction) is open. The appointment procedure with our prime candidate, an internationally recognized specialist working in the USA, is under way. Despite this temporary limitation, patients in surgery are admitted and treated so that the clinical education in horses can be arranged.

Clinics on the Campus Oberschleissheim

The Clinics in Oberschleissheim were built in 1992 (Clinic for Birds) or 2003 (Clinic for Ruminants, Clinic for Swine). In 2012, an extension to the former Clinic for Birds will be completed so that Reptiles, Amphibians and Ornamental Fish can be accommodated.

The Clinic for Ruminants is led by two chairs covering the areas of reproduction (Prof. Zerbe) as well as internal medicine and surgery (Prof. Knubben) for all ruminant species. Furthermore, the area of ambulatory and herd health medicine is supervised by an Associate Professor (Prof. Mansfeld). The Clinic serves as a referral institution for private practitioners. This service is not only welcomed by the veterinary surgeons but also by farmers, especially in cases where intensive or prolonged care or therapy is necessary. The main reason why patients are referred to the University Clinic is that we can offer specialised services that outside practitioners cannot perform themselves (e.g. certain surgical procedures, diagnostic imaging techniques). The Clinic for Ruminants (together with the Clinic for Swine) runs a specialized lab, which provides current diagnostic and analytical methods, both for routine diagnostics as well as specialized scientific assays (PCR, FACS).

The level of specialisation of senior staff at the Clinic exceeds that of an average private practitioner, the majority of them being diplomates or specialists of bovine and small ruminant medicine (e.g Dipl. ECBHM, Dipl. ECAR).

There are facilities for approximately 80 - 100 ruminants that may be hospitalized at any time point, including special barns for patients being referred from cow-calf operations, deep-bedded box stalls for downer cows including the possibility for the use of water bath, as well as isolation units for animals with suspected or confirmed contagious diseases. The hospital has three surgery theatres with modern technical equipment and an x-ray room equipped with a high performance radiograph unit. Necropsies can be performed by the students in a separate post-mortem examination room. A central video system is in place which can be used to broadcast video signals and sound from many locations throughout the Clinic (including the surgery theatres) to the central auditorium. Specially tailored computer software is used for record keeping that enables the handling of all data collected from previous and current patients and is used for the daily management of patients as well for scientific purposes (data analysis).

The Mobile Clinic holds the role of the farm veterinarian for about 60 dairy and beef cattle farms providing individual animal care, including artificial insemination. The ambulances are well equipped to the standard (e.g. modern car pharmacies, portable ultrasound and notebooks with herd management and administration
ANIMALS AND TEACHING MATERIAL OF ANIMAL ORIGIN

software) of a modern large animal practice, including herd health management and diagnostics. In the field of “Herd Health Management” recognized test procedures and modern measurement techniques and laboratory methods are used. The Clinic offers this service throughout Bavaria usually in cooperation with the farm veterinarians. The students are actively involved in all services and activities including development of herd problem solutions.

The **Clinic for Swine** is a highly specialised diagnostic centre. Many practising veterinarians refer cases to the clinic. Services offered by the Clinic for Swine to local veterinarians include support in herd health management and diagnostic analysis. For this purpose, the Clinic for Swine closely collaborates with other institutes such as the Institute of Pathology, the Institute of Infectious Diseases and Zoonoses and the Bavarian Authority for Health and Food Safety. In most cases a number of diseased pigs from a given herd are referred to the Clinic for in-depth diagnostics. Appointments for farm visits can be made. In both cases, advice to the farmer is only given in consultation with the local veterinarian in charge of the respective farm. Veterinarians receive a detailed medical report including all test results, an interpretation thereof, and suggested therapeutic options.

The **Clinic for Birds, Reptiles, Amphibians and Ornamental Fish** represents a Competence Centre covering all fields of non-mammalian exotics. With a focus on rapid and emergency diagnostics the Clinic includes: 1. hospital for pet birds, raptors, pigeons, zoological and feral birds, 2. poultry section, 3. hospital for reptiles, amphibians and ornamental fish, 3. pathology and histopathology, 4. bacteriology, 5. virology, 6. parasitology. The Clinic runs a 24/7 hour emergency on-call service and acts as a referral clinic for practitioners and zoological gardens on an international basis. Senior staff with a high level of specialisation in all fields of avian, herpetology and ornamental fish medicine is available. Most recently, a state-of-the-art facility for reptile medicine was opened which fulfils all requirements for handling dangerous and poisonous animals.

**7.1.10 Other Species**

In the 4th semester a lecture on diseases of fish and reptiles is scheduled (two hours per week). A new Chair for Fishery Biology and Fish Diseases has been filled from June 2012. We expect the new colleague to set up a teaching programme for farmed fish.
### 7.1.11 Ratios

Animals available for clinical work

**Table 7.7** Animals available for clinical training (in the Clinics of the Faculty or seen through the Ambulatory Clinic) as ratio to the number of students in last full year of clinical training

<table>
<thead>
<tr>
<th>Ratio</th>
<th>Number</th>
<th>Denominator</th>
</tr>
</thead>
<tbody>
<tr>
<td>R11</td>
<td>230</td>
<td>9.65</td>
</tr>
<tr>
<td></td>
<td>2220</td>
<td></td>
</tr>
<tr>
<td>R12</td>
<td>230</td>
<td>35.93</td>
</tr>
<tr>
<td></td>
<td>8265</td>
<td></td>
</tr>
<tr>
<td>R13</td>
<td>230</td>
<td>0.45</td>
</tr>
<tr>
<td></td>
<td>104.6</td>
<td></td>
</tr>
<tr>
<td>R14</td>
<td>230</td>
<td>5.22</td>
</tr>
<tr>
<td></td>
<td>1201</td>
<td></td>
</tr>
<tr>
<td>R15</td>
<td></td>
<td>Not applicable</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R16</td>
<td>230</td>
<td>63.37</td>
</tr>
<tr>
<td></td>
<td>14567</td>
<td></td>
</tr>
<tr>
<td>R17</td>
<td>230</td>
<td>0.08</td>
</tr>
<tr>
<td></td>
<td>19.3</td>
<td></td>
</tr>
</tbody>
</table>
Table 7.8 Animals available for necropsy

<table>
<thead>
<tr>
<th>Ratio</th>
<th>No. of students graduating annually</th>
<th>Denominator</th>
</tr>
</thead>
<tbody>
<tr>
<td>R18</td>
<td>no. of necropsies food producing animals + equine</td>
<td>230</td>
</tr>
<tr>
<td>R19</td>
<td>no. of necropsies poultry</td>
<td>230</td>
</tr>
<tr>
<td>R20</td>
<td>no. of necropsies companion animals</td>
<td>230</td>
</tr>
</tbody>
</table>

7.2 COMMENTS AND SUGGESTIONS

In general, the clinical facilities allow highly specialised services for patients and clients (e.g. linear accelerator for oncology service). The high number of animals admitted to our hospitals demonstrates that the services offered are in sufficient demand. We are very well aware of the fact that the layout of the clinics on the Campus Englischer Garten is outdated. Despite numerous refurbishments, the disadvantages of the old layout are obvious. It is our top priority to move these clinics to the Campus Oberschleissheim.

NOTES

........................................................................................................................................
........................................................................................................................................
........................................................................................................................................
........................................................................................................................................
........................................................................................................................................
........................................................................................................................................
8 LIBRARY AND LEARNING RESOURCES

8.1 FACTUAL INFORMATION

8.1.1 LIBRARY

General information

The University Library Munich (Universitätsbibliothek München, UB) is open to students of all faculties. It consists of one central library and 13 large peripheral specialised libraries (http://www.ub.uni-muenchen.de/bibliotheken), of which one is the Library of the Veterinary Faculty. Additionally, there are over 100 peripheral institute libraries; 13 of which are in the Faculty.

Furthermore, students have access to the Bavarian State Library Munich (Bayerische Staatsbibliothek München, BSB) and to the Library of the Technical University of Munich (Bibliothek der Technischen Universität München, TUB).

The Library Committee meets once a year and consists of the following people:

- Dean
- Dean for Student Affairs
- Director of the Department of Veterinary Sciences and Director of the Centre for Clinical Veterinary Medicine
- Heads of the Office of the Department of Veterinary Sciences and of the Centre for Clinical Veterinary Medicine
- Commissioner of Library Affairs (Prof. Joris Peters)
- Head of the IT-Group (Chris van der Meijden)
- 2 student representatives
- Executive Director of the University Library Munich
- Head of the Peripheral Libraries (Dr. André Schüller-Zwierlein)
- Head of the Library of the Veterinary Faculty (Nikola Trapp)

Library of the Veterinary Faculty

- Telephone: 089 / 2180-2671 or –2672
- E-mail: tiermed@ub.uni-muenchen.de
- Library opening hours:
  Mon.-Fri. 9:00 a.m. -20:00 p.m., Sat. 9:00 a.m. - 16:00 p.m. (during term-time and vacations)
Table 8.1  Overview of the Library of the Veterinary Faculty

| Specific to the veterinary training establishment | yes          |
| Common to two or more establishments            | no           |
| No. of full time equivalents of part time employees | 0.9         |
| No. of full time employees                      | 1            |
| No. of journals received as hard copy per year  | 13           |
| No. of full access electronic journals          | 20           |
| Availabilities for online literature search     | 10 places    |
| No. of textbooks                                | ca. 8,500 (+ ca. 2,500 journals and 10,000 dissertations) |
| No. of student reading places                   | 40           |

There were around 70,000 visitors and 20,000 sign-outs in 2011 at the Library of the Veterinary Faculty. The library provides a modern book scanner, where students can scan parts of books directly either to a USB stick or to their personal storage within the e-learning platform.

**Subsidiary libraries of the Faculty**

14 chairs and clinics of the Faculty have their own collections of specialised textbooks and journals. These subsidiary libraries are either opened during the general opening time of the institutions or by appointments with responsible personnel e.g. secretary. The availabilities of journals of the subsidiary libraries can be searched through the online catalogue of the University Library Munich (OPAC).

These libraries are of special significance in the institutions, which are part of the Clinical Rotation. Students have access to textbooks and monographs to work on cases or to prepare seminars.

Students can also retrieve information online via the homepage of the University Library Munich. The media available are:

- E-tutorials
- Databases
- Virtual microscopy
- E-books
- E-dissertations
- E-journals
- Open access LMU (a platform for scientific publications of all faculties of the LMU and of institutions cooperating with the LMU)
<table>
<thead>
<tr>
<th>Institute/Clinic</th>
<th>Ressources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Veterinary Anatomy, Histology and Embryology</td>
<td>ca. 4,200 textbooks 8 journals 14 reading places</td>
</tr>
<tr>
<td>Physiology, Physiological Chemistry and Animal Nutrition and Dietetics</td>
<td>ca. 6,100 textbooks 4 journals 5 reading places</td>
</tr>
<tr>
<td>Institute of Food Science</td>
<td>ca. 4,500 textbooks 16 journals 3 reading places</td>
</tr>
<tr>
<td>Molecular Animal Husbandry and Biotechnology</td>
<td>ca. 5,000 textbooks 10 journals audio visual media</td>
</tr>
<tr>
<td>Animal Welfare, Ethology, Animal Hygiene and Animal Husbandry</td>
<td>ca. 3,250 textbooks 4 journals 10 reading places</td>
</tr>
<tr>
<td>Palaeoanatomy, Domestication Research and History of Veterinary Medicine</td>
<td>ca. 14,750 textbooks 4 journals audio visual media</td>
</tr>
<tr>
<td>Institute of Infectious Diseases and Zoonoses</td>
<td>ca. 5,000 textbooks 24 journals 38 reading places</td>
</tr>
<tr>
<td>Comparative Tropical Medicine and Parasitology</td>
<td>ca. 1,200 textbooks 7 journals 20 reading places</td>
</tr>
<tr>
<td>Clinic of Small Animal Medicine</td>
<td>ca. 200 textbooks 1 journal 8 reading places</td>
</tr>
<tr>
<td>Clinic of Small Animal Surgery and Reproduction</td>
<td>ca. 1,850 textbooks 8 journals 20 reading places</td>
</tr>
<tr>
<td>Clinic for Ruminants</td>
<td>ca. 1,700 textbooks 9 journals 8 reading places</td>
</tr>
<tr>
<td>Clinic for Birds, Reptiles, Amphibians and Ornamental Fish</td>
<td>ca. 4,850 textbooks 9 journals 6 reading places</td>
</tr>
<tr>
<td>Fishery Biology and Fish Diseases</td>
<td>ca. 5,100 textbooks</td>
</tr>
<tr>
<td>Institute/Clinic</td>
<td>Ressources</td>
</tr>
<tr>
<td>--------------------------------------</td>
<td>-----------------------------------</td>
</tr>
<tr>
<td></td>
<td>4 journals</td>
</tr>
<tr>
<td></td>
<td>4 reading places</td>
</tr>
<tr>
<td>Institute of Veterinary Pathology</td>
<td>ca. 4,800 textbooks</td>
</tr>
<tr>
<td></td>
<td>14 journals</td>
</tr>
<tr>
<td></td>
<td>3 reading places</td>
</tr>
</tbody>
</table>

8.1.2 INFORMATION TECHNOLOGY SERVICES

The IT-Group of the Faculty is responsible for purchase of new hardware and software as well as maintenance of the local computers and the server. The locations with client computers of the Faculty are also managed by the IT-Group.

IT-Group of the Faculty of Veterinary Medicine

- Telephone: 089 / 2180-2523
- Fax: 089 / 2180-992523
- E-mail: v.d.Meijden@lmu.de

Funds from the University to expand students’ IT-work places are available regularly:

- 2006 Main Campus: 140,000 €
- 2009 Campus Oberschleissheim: 234,000 €
- 2011 Main Campus: 126,000 €

There are four locations with a total of 98 client computers with internet access for student use. A central terminal server cluster powers all client computers. Access to the rooms, authentication at the client computers, as well as payment for printing is based on the use of chip cards (SMART-Cards). The Student Council manages the distribution of the chip cards.

On the first floor of the IT-Building, there are 27 computers, two laser printers, a flatbed scanner and an additional computer with beamer allowing student instruction in groups. It is open on a 24-hour basis. During the office closing hours, students can get a key for the main entrance at the portal and access the room using their SMART cards.

Inside the Faculty Library, students can use 10 computers, one printer and a planetary scanner during the opening hours of the Library (see above).

In the buildings of Animal Nutrition and Dietetics and Clinics for Ruminants and Swine at the Oberschleissheim Campus, 56 computers (with an additional beamer) and 5 computers along with printers are available, respectively. The official opening hours are 9 a.m. to 5 p.m. However, students can have access as long as there are employees around who keep the main entrance open. Access to the computer rooms as well as authentication at the client computers is again based on the use of SMART cards.
E-learning platform “Studienportal”

In spring of 2010, a permanent full-time position was assigned to the IT-Group in order to strengthen e-learning. Subsequently (fall of 2010), the newly formed division e-learning & assessment of the IT-Group launched the „Studienportal“ (http://studienportal.vetmed.uni-muenchen.de), an open source e-learning platform providing a virtual learning environment. As of December, 2011, the „Studienportal“ serves about 2000 registered users. Hence nearly all students and a substantial proportion of the Faculty staff members are registered and use the platform.

![Screenshot from the Studienportal](image)

Figure 8.1: Screenshot from the Studienportal

Depending on the demand, key features are successively activated and additional options implemented. Features of the e-learning platform already available include:

- Virtual room for every course given including member list and mail-function
- Deposit for teaching material
- E-communication (forum, chat, wiki)
- Virtual microscopy
- Interactive computer assisted learning
- Evaluations and informal exams
- News and calendar management
- Tutorial videos
- Homepages

The e-learning platform is widely accepted by the users. Students (n = 1835; including postgraduate students) and lecturers (n = 96) use it on a regular basis.
The usage by lecturers encompasses a wide spectrum. While some only upload PDFs of their respective power-point files, others offer entire online lectures in our “virtual classroom” which is based on OpenMeetings software. The number of logins has steadily increased since fall of 2011 (see Figure 8.2), and currently about 500 logins per day are registered.

**Figure 8.2  Increase of logins over time from the start of the “Studienportal”**

Additional functions are currently optimized, newly integrated or planned and will be available in the near future. These features include:

- Easy to access virtual classroom based on “Open Meetings”
- Plug-in for problem based learning i.e. patient cases
- Administration of lecture rooms and other resources
- E-exams

An very useful application is the so-called virtual microscopy. We have recently bought a special scanning microscope that can scan not only slides but also other subjects like parasites in Petri dishes. The quality of the scans is very good and the associated server allows virtual microscopy from any place that provides internet access. Due to a special software solution, even computers with rather slow internet access are compatible with the system. The students can use the virtual microscope just like a normal microscope with various magnification steps. The annotation of the slides used in the histology and the pathohistology course is currently in progress. Moreover, a e-learning tool dealing with virtual microscopy of food samples has already been established and is accessible via the “Studienportal”.

In the past, several of the departments and clinics have already produced videos and/or self-teaching programmes. However, student access is sometimes hampered...
due to restriction of opening hours, necessity for specific computer/operating systems and/or knowledge about the availability of these resources. Thus another pilot project has been carried out in which the DVD based self-teaching programme “SonoBasics” (a tutorial how to apply ultrasonography in dogs) was converted into a “Studienportal” compatible format. Students are now able to access the programme whenever they want. In addition, they can directly transfer the newly acquired knowledge about ultrasound scanning and reserve time slots in the ultrasound lab for practical training.

The following computer programmes for teaching in Anatomy have been developed by the Faculty and are offered to students via client computers at the Faculty:

- „InsideDog: The Head”
- „BovineDigit”
- „Der Pferdekopf” (The Horse’s Head)

Programmes in preparation:

- Functional Anatomy of the Thoracic Limb in the Dog (in German)
- Functional Anatomy of the Pelvic Limb in the Dog (in German)
- Functional Anatomy of the Back in the Dog (in German)

New self-teaching programmes are offered at a central location within the “Studienportal”. Lecturers are encouraged to get their existing self-teaching programmes converted. Furthermore, lecturers are invited and get assistance if they want to create new self-teaching programmes and/or upload videos.

To overcome the capacity problems of lecture halls a novel video conference system will be installed in summer, 2012, which has the following potential:

- Simultaneous broadcasting of lectures into other lecture halls (including the talk, the presentation and the ability to ask questions in all lecture halls)
- Live streaming of the lecture
- Recording of the lecture and incorporation into the “Studienportal”
- Connection of the two campuses of the Faculty
- Inclusion of outside lecturers as video conference (for instance as an addition to a lecture from an outside specialist)

Moreover, measures have already been taken to allow access to self-teaching programmes and/or media (see Competence Centre for e-learning, KELDAT) provided by other veterinary faculties. Login into the “Studienportal” is implemented as single sign-on (Shibboleth). Thus students can get easy access once content of high quality and interest is available for sharing between the participating institutions.

The next aim of the IT-Group is to provide the framework for electronic assessment and evaluation of our teaching programme. In order to enable e-exams, 200 laptops were bought in the fall of 2011 and prepared with state-of-the-art minimized operating systems. Two lecture rooms are currently under construction in order to
provide robust network and power access. Once completed, there will be a capacity for 100 students on the Campus Englischer Garten and an additional capacity for 72 students on the Campus Oberschleissheim. Two new server computers were bought in December, 2011, and equipped to set up a high performance and locked assessment network servicing the 200 client laptops. Taken together, these measures will enable e-exams for the largest possible course in only two cohort groups.

Meanwhile, the Volkswagen/Mercator Foundation has granted funding for a Competence Centre for e-learning together with all other German-speaking veterinary schools. The kick-off meeting was in the spring of 2012, and funding/operation began in April, 2012.

The focus of the division e-learning & assessment within the Competence Centre (Kompetenzzentrum für E-Learning, Didaktik und Ausbildungsforschung der Tiermedizin, KELDAT) will be didactics and new media. The Competence Centre will ensure an exchange of expertise for all aspects of modern veterinary education.

**Future prospects**

The University has been granted 23 Million € for improvement of teaching within the framework of the Excellence Initiative. These funds will help to continue and develop e-learning & assessment with assistance from the University.
8.2 **COMMENTS**

Although the facilities of the Library in terms of student places are limited, this disadvantage has been compensated by the following measures:

- Concentration on the sign-out of textbooks and consequently the acquisition of a sufficient number of copies.
- Establishment of other sites within the faculty such as seminar rooms, institute libraries, anatomical collection, computer rooms, dedicated as spaces for student self-learning.
- Establishment of a large number of e-learning tools collected in one huge “Studienportal” that provides easy and comprehensive access for all students.

The provision of IT facilities including e-learning is good and will be developed further with new tools such as electronic exams and video conference systems that allow the recording and storage of lectures.

8.3 **SUGGESTIONS**

An E-learning curriculum should be developed that covers the most important cases within each discipline. Once established, thorough study of these cases will be mandatory for each student before taking final exams. These programs will further enhance the self-directed learning activities of all students.
9  ADMISSION AND ENROLMENT

9.1  FACTUAL INFORMATION

9.1.1  UNDERGRADUATE STUDENT NUMBERS

The minimum time allowed for completion of the curriculum is 5.5 years (equivalent to 11 semesters). Since the veterinary course starts with the winter semester, student number is lower during the summer because students leave the course after 11 semesters (after the winter semester).

Table 9.1  Undergraduate student composition in 2011/2012

<table>
<thead>
<tr>
<th></th>
<th>Winter term 11/12</th>
<th>Summer term 12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number of undergraduate students</td>
<td>1604</td>
<td>1378</td>
</tr>
<tr>
<td>Total number of male students</td>
<td>228 (14%)</td>
<td>193 (14%)</td>
</tr>
<tr>
<td>Total number of female students</td>
<td>1376 (86%)</td>
<td>1185 (86%)</td>
</tr>
<tr>
<td>Foreign students</td>
<td>84 (5%)</td>
<td>69 (5%)</td>
</tr>
</tbody>
</table>

9.1.2  STUDENT ADMISSION

Minimum admission requirements

As laid down in § 2 of the Teaching and Examination Rules of the Faculty, the minimum admission requirement for studies of veterinary medicine is the University Entrance Exam (Abitur).

Limit to the number of students admitted

In Germany, the number of applicants is higher than the number of student places. Thus, veterinary medicine is a so-called “Numerus clausus” discipline, and the allocation of students to Veterinary Establishments in Germany is carried out by the Central Office for Distributing Study Places (Zentrale Vergabestelle für Studienplätze, ZVS).

Currently, the number of students admitted per year at the Veterinary Faculty in Munich is limited to about 281. Since there are more than five times the number of applicants, all places are filled. The number of students to be admitted is calculated according to the Rules of the Capacity Regulation (Kapazitätsverordnung), which is mandatory for all veterinary schools in Germany. The number may change slightly
from year to year because it is based primarily on the number of academic staff. All student places at the Veterinary Faculty of Munich are government-funded. There are no foreseeable changes in the number of students admitted annually.

**Selection process**

Candidates for academic training in Veterinary Medicine apply at the Central Office for Distributing Study Places based in Dortmund, Germany. 40% of all student places are directly allocated to applicants by this federal institution according to the criteria of the ZVS (20% based on grades and 20% from a list of applicants who have applied for several years). Universities are allowed to define their own criteria to select the remaining 60% of students from the pool of applicants. The Veterinary Faculty in Munich decided to use primarily the average grade of the University Entrance Exam (Abitur) for selection of students. In addition, applicants with one of the following professional educations receive a bonus of 0.3 to their average grade:

- Agricultural engineers
- Agricultural technical assistant
- Veterinary technician
- Animal keeper
- Veterinary lab technician

**Table 9.2 Intake of veterinary students in the past five years (data from ZVS)**

<table>
<thead>
<tr>
<th>Winter term</th>
<th>Number applying for admission</th>
<th>Number admitted</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>“Standard” intake</td>
<td>Transfer students</td>
</tr>
<tr>
<td>2011/2012</td>
<td>1796</td>
<td>281</td>
</tr>
<tr>
<td>2010/2011</td>
<td>1755</td>
<td>288</td>
</tr>
<tr>
<td>2009/2010</td>
<td>1806</td>
<td>287</td>
</tr>
<tr>
<td>2008/2009</td>
<td>1739</td>
<td>266</td>
</tr>
<tr>
<td>2007/2008</td>
<td>2550</td>
<td>266</td>
</tr>
</tbody>
</table>

As mentioned above, available study places (for the first semester) are assigned by the ZVS. Students from other schools who have already passed exams successfully,
can submit their applications directly to the University. Usually these are students who acquired their Second Preclinical Veterinary Examination from foreign veterinary faculties (e.g. Szent István University, Budapest, Hungary) because we see a certain dropout rate at this stage of the course, leading to a number of places.

9.1.3 STUDENT FLOW

Table 9.3 Student flow and total number of undergraduate veterinary students

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of students present after admitted in 2005</th>
<th>Number of students graduated</th>
<th>Number of additionally admitted students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Admitted 2005</td>
<td>294</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1\textsuperscript{st} year</td>
<td>252</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>2\textsuperscript{nd} year</td>
<td>236</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td>3\textsuperscript{rd} year</td>
<td>225</td>
<td>0</td>
<td>11</td>
</tr>
<tr>
<td>4\textsuperscript{th} year</td>
<td>224</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>5\textsuperscript{th} year</td>
<td>224</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>6\textsuperscript{th} year</td>
<td>15</td>
<td>203</td>
<td>0</td>
</tr>
<tr>
<td>&gt; 6\textsuperscript{th} year admitted before 2005</td>
<td>14</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\textsuperscript{1}students from other universities or students that have paused for some time

Of the 294 students admitted in 2005, the majority made progress in due time (Regelstudienzeit) and graduated after 5.5 or 6 years (Table 9.3). 75 students dropped out for various reasons (e.g., changed to another university, failed the Second Preclinical Veterinary Examination). Twenty out of the 75 dropouts were replaced by additionally admitted students.

The number of students graduating annually (data from 2007 through 2011) varied between 199 and 257 (Table 9.4). Of the 230 students who graduated in 2011, 88%
(202) of them finished their degree within the minimum time of 5.5 years (see Table 9.5).

Table 9.4  Number of students graduating annually over the past five year

<table>
<thead>
<tr>
<th>Year</th>
<th>Number graduating</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>230</td>
</tr>
<tr>
<td>2010</td>
<td>257</td>
</tr>
<tr>
<td>2009</td>
<td>251</td>
</tr>
<tr>
<td>2008</td>
<td>199</td>
</tr>
<tr>
<td>2007</td>
<td>211</td>
</tr>
<tr>
<td><strong>average</strong></td>
<td><strong>230</strong></td>
</tr>
</tbody>
</table>

Table 9.5  Average duration of studies (distribution of 230 students graduated in 2011)

<table>
<thead>
<tr>
<th>Duration of attendance</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.5 years</td>
<td>202</td>
</tr>
<tr>
<td>6 years</td>
<td>20</td>
</tr>
<tr>
<td>7 years</td>
<td>4</td>
</tr>
<tr>
<td>8 years</td>
<td>2</td>
</tr>
<tr>
<td>9 years</td>
<td>1</td>
</tr>
<tr>
<td>10 years and more</td>
<td>1</td>
</tr>
</tbody>
</table>

Requirements for progressing through the course

The rules for advancing through the course are laid down in the Teaching and Examination Rules of the Faculty (see also the examination system as outlined in Chapter 5.1.3.):

Admission to the First Preclinical Veterinary Examination is granted after the first year.

Participation in seminars and practicals in physiology, physiological chemistry (biochemistry) is only possible for students who have successfully passed at least three exams of the First Preclinical Veterinary Examination, including the exam in chemistry.
Admission to the Second Preclinical Veterinary Examination is permitted when all seminars and practicals in physiology, physiological chemistry and anatomy have been passed.

Admission to the clinical part of studies is permitted when a minimum of three out of five examinations of the Second Preclinical Veterinary Examination have been passed.

Admission to 6th Semester requires that all examinations of the Second Preclinical Veterinary Examination have been passed.

Admission to 8th Semester requires that at least 6 out of 8 examinations during the clinical part (according to § 29 TAppV) have been passed.

Admission to the Final Examinations (11th Semester) requires that all lectures, seminars, electives, clinical work and extramural work during the clinical part (according to § 31 TAppV) have been completed.

**Circumstances to leave the course**

As regulated by § 17 TAppV, a maximum of two retakes per examination is possible. If students fail the 2nd retake, they would be exmatriculated and cannot continue or resume the study of veterinary medicine at another German university.

Other circumstances under which the Faculty would oblige students to leave the course:

- In case students would disrupt the regular studies severely.
- In case the student is declared incapable, or is placed under preliminary guardianship and no possibilities to temporarily exempt the student exist.
- In case the student has been sentenced to prison for at least one year because of a premeditated offence.

### 9.2 Comments and Suggestions

The general academic standard of students in the first semester is good to excellent. This probably reflects the situation that the freedom of pupils to choose main subjects during the last two years in secondary school has been considerably restricted. 80% of students are admitted on the basis of excellent grades from secondary school. Moreover the first year of studies offers the possibility to even out differences in natural science knowledge.

The Rules of the Capacity Regulation (*Kapazitätsverordnung*) regulate the number of students that have to be admitted each year. The number is calculated with a very complicated formula in which the number of academics in teaching plays a major role. Therefore, the Faculty has no influence on the number of students to be admitted. Although we would prefer to have a lower student number, our teaching capacity is within an acceptable range (see ratios in Chapter 10).

In general, we feel comfortable with our facilities and the teaching programme with the notable exception that even our biggest lecture hall is too small to accommodate an entire class of students. We try to alleviate the problem by video transmission to
a second lecture hall. In some subjects, lectures are held twice to give every student a chance to be an active part of a teaching lesson. A new lecture hall will be built on the Campus Oberschleissheim but this project will not solve all problems.

Most students are able to progress through the course within the minimum time. We do believe that we get an elite level of students from secondary school. The course is well organised, and students are given a lot of support (students office etc.). Last but not least, our students are extremely motivated, since for almost all of them Veterinary Medicine is their first choice.
10 ACADEMIC AND SUPPORT STAFF

10.1 FACTUAL INFORMATION

Professors and senior lecturers

During the years since 2005 nine chair-holders (salary group C4 or W3) and four Associate Professors (W2) have been appointed (4 female, 9 male). These professors came from the Veterinary University Hanover (4), the Veterinary University Vienna (2), the Veterinary Faculty Leipzig, the Veterinary Faculty Zurich, Paul-Ehrlich-Institut Frankfurt, Max-Rubner-Institut Kulmbach, Animal Health Trust (Newmarket UK) and Iowa State University. Currently five appointment procedures for chairs are under way. As of June, 2012, there are 23 C4 / W3 professors (chair) and 12 C3 / W2 professors (Associate Professor).

The Faculty was able to change the status of specialists in different fields and disciplines from a limited contract to a permanent position thus providing the respective institutions with the much-needed continuity. Since these persons have a truly special expertise and quite often an academic degree comparable to professors (e.g. Habilitation), the term “Senior Lecturer” is justified for this group of academic staff. In the Centre for Clinical Veterinary Medicine, 31 senior lecturers with a Diplomate degree or a national board specialisation (in a number of cases also with the academic degree of Habilitation) are employed. In the Department of Veterinary Sciences there are 25 senior lecturers.

Other academic staff

Teaching and research in German universities relies heavily on young academic staff members who work on non-permanent positions. The maximum period of employment is 6 years. However, in case of an ongoing Habilitation, the period can be extended to a maximum of 10 years. In most cases, these staff members start their work after having completed the Dr. med. vet. The motivation to work in the Veterinary Faculty for a couple of years is to gain valuable experience and to specialise in the field of choice (residency for a European College or a national board specialisation).
### Table 10.1 Personnel in the establishment provided for veterinary training
Data from 2011/2012

<table>
<thead>
<tr>
<th></th>
<th>Budgeted posts (FTE)</th>
<th>Non-budgeted posts (FTE)</th>
<th>Total (FTE)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Academic staff</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teaching (total FTE):</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paid by tuition fee</td>
<td>146.3#</td>
<td>20.0#</td>
<td>193.4</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>37.5</td>
</tr>
<tr>
<td>Paid from grants</td>
<td>37.9*</td>
<td>17.5*</td>
<td></td>
</tr>
<tr>
<td>Research (total FTE):</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paid from grants</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other (total FTE):</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paid from income</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total FTE</td>
<td>146.3</td>
<td>20.0</td>
<td>200.4</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>40.0</td>
</tr>
<tr>
<td>Total FTE (VS+NVS)</td>
<td>166.3</td>
<td>74.1</td>
<td>240.4</td>
</tr>
<tr>
<td>FTE providing last year</td>
<td>Not applicable</td>
<td></td>
<td></td>
</tr>
<tr>
<td>teaching</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| **2. Support staff**     |                      |                          |             |
| Responsible for the      |                      |                          |             |
| preparation of practical | 117.0                | 12. 8                    | 129.8       |
| and clinical teaching,   |                      |                          |             |
| research work            |                      |                          |             |
| Responsible for the      | 74.7                 | 2.5                      | 77.2        |
| care and treatment of    |                      |                          |             |
| animals                  |                      |                          |             |
| Responsible for          | 68.0                 | 9.5                      | 77.5        |
| administration, general  |                      |                          |             |
| services, maintenance,   |                      |                          |             |
| cleaning etc.            |                      |                          |             |
| Total support staff      | 259.7                | 24.8                     | 284.5       |

| **3. Total staff**       | 426                  | 98.9                     | 524.9       |

* Academic staff on budgeted posts or paid from income is required to do teaching and research
\# Academic staff paid from tuition fee does teaching only
\* Academic staff paid from grants participates in teaching sporadically
<table>
<thead>
<tr>
<th>Name of the institution</th>
<th>Academic teaching staff</th>
<th>Support staff</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Professors</td>
<td>Assistants</td>
</tr>
<tr>
<td></td>
<td>VS</td>
<td>NVS</td>
</tr>
<tr>
<td>Dean’s Office</td>
<td>0.5</td>
<td>3</td>
</tr>
<tr>
<td>IT-Group</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Office of the Department of Veterinary Sciences</td>
<td>1</td>
<td>2.8</td>
</tr>
<tr>
<td>Veterinary Anatomy, Histology and Embryology</td>
<td>2</td>
<td>10</td>
</tr>
<tr>
<td>Physiology</td>
<td>3</td>
<td>10.5</td>
</tr>
<tr>
<td>Physiological Chemistry</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Animal Nutrition and Dietetics</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Institute of Food Science</td>
<td>2</td>
<td>12.6</td>
</tr>
<tr>
<td>Animal Genetics and Husbandry and Molecular Animal Breeding and Biotechnology</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Animal Welfare, Ethology, Animal Hygiene and Animal Housing</td>
<td>1</td>
<td>6.8</td>
</tr>
<tr>
<td>Palaeoanatomy, Domestication Research and History of Veterinary Medicine</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Institute of Infectious Diseases</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Parasitology</td>
<td>1</td>
<td>4.5</td>
</tr>
<tr>
<td>Pharmacology, Toxicology and Pharmacy</td>
<td>2</td>
<td>5.5</td>
</tr>
<tr>
<td>Fishery Biology and Fish Diseases</td>
<td>1</td>
<td>0.8</td>
</tr>
</tbody>
</table>
## Academic and Support Staff

<table>
<thead>
<tr>
<th>Name of the institution</th>
<th>Professors</th>
<th>Assistants</th>
<th>Technical (a)</th>
<th>Animal carers (b)</th>
<th>Admin (c)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Office of the Centre for Clinical Veterinary Medicine</td>
<td>VS NVS</td>
<td>VS NVS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10.6</td>
</tr>
<tr>
<td>Clinic of Small Animal Medicine</td>
<td>3</td>
<td>20.5</td>
<td>4</td>
<td>13</td>
<td>3.5</td>
</tr>
<tr>
<td>Clinic of Small Animal Surgery and Reproduction</td>
<td>3</td>
<td>17.5</td>
<td>3</td>
<td>21</td>
<td>2</td>
</tr>
<tr>
<td>Clinic for Ruminants</td>
<td>3</td>
<td>19.5</td>
<td>9.3</td>
<td>9</td>
<td>2</td>
</tr>
<tr>
<td>Clinic for Swine</td>
<td>1</td>
<td>4.5</td>
<td>1</td>
<td>3</td>
<td>0.5</td>
</tr>
<tr>
<td>Clinic for Horses</td>
<td>1</td>
<td>11.5</td>
<td></td>
<td>14</td>
<td>2</td>
</tr>
<tr>
<td>Clinic for Birds, Reptiles, Amphibians and Ornamental Fish</td>
<td>1</td>
<td>6.6</td>
<td></td>
<td>14.3</td>
<td>1</td>
</tr>
<tr>
<td>Institute of Veterinary Pathology</td>
<td>3</td>
<td>8.5</td>
<td>16.4</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Livestock Centre</td>
<td></td>
<td></td>
<td>2.5</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>32</td>
<td>3</td>
<td>168.4</td>
<td>37.0</td>
<td>129.8</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>77.2</td>
<td>77.5</td>
</tr>
</tbody>
</table>
# ACADEMIC AND SUPPORT STAFF

## Table 10.3 Ratios students/staff

<table>
<thead>
<tr>
<th>Ratio</th>
<th>Description</th>
<th>Number</th>
<th>Denominator</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1</td>
<td>no. total academic FTE in veterinary training</td>
<td>240.4</td>
<td>6.67</td>
</tr>
<tr>
<td></td>
<td>no. undergraduate veterinary students</td>
<td>1604*</td>
<td></td>
</tr>
<tr>
<td>R2</td>
<td>no. total FTE at Faculty</td>
<td>524.9</td>
<td>3.05</td>
</tr>
<tr>
<td></td>
<td>no. undergraduate veterinary students</td>
<td>1604*</td>
<td></td>
</tr>
<tr>
<td>R3</td>
<td>no. VS FTE in veterinary training</td>
<td>200.4</td>
<td>8.00</td>
</tr>
<tr>
<td></td>
<td>no. undergraduate veterinary students</td>
<td>1604*</td>
<td></td>
</tr>
<tr>
<td>R4</td>
<td>no. students graduating annually</td>
<td>230</td>
<td>1.15</td>
</tr>
<tr>
<td>R5</td>
<td>no. total FTE academic staff in veterinary training</td>
<td>240.4</td>
<td>1.18</td>
</tr>
<tr>
<td></td>
<td>no. total FTE support staff in veterinary training</td>
<td>284.5</td>
<td></td>
</tr>
</tbody>
</table>

* Numbers of students during winter term 2011/2012

## Allocation of staff to the establishment and to the institutes within the establishment

The allocation of staff to the Faculty is based traditionally on structural decisions made by the University and the Bavarian State Ministry of Sciences, Research and the Arts. According to the Bavarian Higher Education Act, the Board of University Representatives determines the allocation of staff within the university. The number of academic staff is closely linked to the yearly intake of students so that any reduction of staff would automatically result in a reduction of students to be admitted. Since this is not in line with the political agenda, the University and the overseeing authority try to avoid such measures.

With the introduction of departments, personnel are under the responsibility of the department. The department allocates personnel according to performance and teaching load.

## Difficulties in recruiting and retaining staff

In general, there is no problem to fill the positions for academic and support staff. Nevertheless, it is difficult in some fields to find Associate Professors (W2) due to the lack of young academics. In addition, salaries for W2 professors have been reduced in comparison to the former C3 level. Recruiting of specialists can be difficult in some clinical fields, because of competition with large private clinics in the Munich area.
Trends or changes in staff levels

The academic staff level has not changed significantly in the last years. It is not expected that both the number of academic and support staff on budgeted posts can be increased.

Additional staff employed from service income

Since a few years, there is a possibility to finance additional staff from clinic income. This is a very new and highly appreciated development that has a very positive influence on the teaching capacity of hands-on teaching on the clinic floor.

Regulations governing outside work

Academic staff has to notify the Faculty in writing if they have any secondary work and incomes outside of the Faculty. Regulations of the Bavarian University Staff Act (Bayerisches Hochschulpersonalgesetz) Article 6 and of the Bavarian Officials Act (Bayerisches Beamtengesetz) Article 81 & 82 clearly define the conditions of permission, use of facilities, materials as well as personnel, the percentage of overhead and the information about the amount of such income. Full professors in clinics and para-clinical institutions may derive additional income through services provided by the respective services (e.g. “private patients” at the clinics).

Possibilities and financial provision for the academic staff to attend scientific meetings

Possibilities to attend scientific meetings are generally good. Employees must get permission from the head of the institution. Funds are provided from the institute budgets, or from dedicated travel funds of research grants.

Possibilities and financial provision for the academic staff to go on a sabbatical leave

Sabbatical leaves are allowed to professors only and are regulated by the Bavarian University Staff Act (Bayerisches Hochschulpersonalgesetz) Article 11. Release from duties up to one semester is possible, provided that regular and orderly continuation of teaching, examinations and supervision of scientific work is ensured. During recent years, three professors took a sabbatical (1 semester).

10.2 Comments

Quite a number of new professors (chairs, W3) have been appointed in recent years bringing a unique experience and a wealth of new expertise to the Faculty. It has to be noted that recruiting Associate Professors (W2) has become increasingly more difficult. The main reason is the salary level which has been lowered in comparison to the former C3-level. Since Munich is the city in Germany with the highest living expenses, it is not very attractive for young academics living in Giessen, Leipzig, or Hannover to come to Munich.
The ratios from Table 10.3 show that the numbers of total academic full time equivalents in veterinary training (R1), full time equivalents of the Faculty (R2) and veterinary surgeons to undergraduate students (R3) and those graduating yearly (R4) are sufficient. Likewise, the ratio between academic and support staff is within the limits of recommended denominators.

Salary levels, especially those of younger academic staff (in particular in the clinics) are higher than those of young veterinarians employed in private practice and at a comparable level to the pharmaceutical industry. However, as income from private practitioners varies tremendously, comparisons are difficult to make. More experienced employees, especially experts, can often gain a better income outside the university. An advantage of tenured posts (civil servants) is that no payments for social security have to be made, as pensions are paid entirely by the state.

The overwhelming majority of academics working in the Faculty are veterinarians. Only veterinarians are employed as academic staff in the clinics. At the non-clinical level, 75% of all academic staff are veterinarians. The proportion of about 86% veterinarians to 14% non-veterinarians within the entire academic staff reflects the multidisciplinary approach to teaching and research.

10.3 SUGGESTIONS

As pointed out above, the teacher:student ratio is beyond the control of the Faculty. Therefore, no realistic suggestions for changes are possible, as they would require drastic changes in the federal legislation on higher education. We are currently applying for a university programme which supports the use of students as tutors. Although we already use successfully student tutors in the preclinical area (Semester 1 – 4), there is a number of projects which would benefit from additional tutors.

NOTES
11 CONTINUING EDUCATION

11.1 FACTUAL INFORMATION

In Germany, continuing education (continuing professional development) is provided by a variety of organisations and individuals. Although all Establishments for Veterinary Education in Germany play an active role in continuing education, there are other important organisations and individuals with a high input:

- Federal and Regional Chambers of Veterinary Surgeons
- Federal and Regional Associations of Practitioners
- Pharmaceutical industry
- Veterinary surgeons working in a practice or private clinic

It is fair to say that continuing education in Germany has grown into a big market, based on supply and demand. Teaching staff of the Faculty is involved in continuing education to a considerable, but varying extent. In the table below, figures for 2010 are given, which are representative for the Faculty’s activities.

**Table 11.1 Continuing education courses in 2010 organised by the Faculty alone or in cooperation with partners**

<table>
<thead>
<tr>
<th>Courses (Organiser)</th>
<th>Number of courses</th>
<th>Total hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>National courses (Faculty)</td>
<td>42</td>
<td>255</td>
</tr>
<tr>
<td>National courses (Faculty and the Bavarian Chamber of Veterinary Surgeons)</td>
<td>24</td>
<td>262</td>
</tr>
<tr>
<td>National courses (Faculty and partners from industry)</td>
<td>42</td>
<td>285</td>
</tr>
<tr>
<td>International courses (Faculty)</td>
<td>3</td>
<td>58</td>
</tr>
</tbody>
</table>

**Involvement of teaching staff in continuing education organized by outside bodies**

In 2010, the teaching staff of the Faculty participated in 599 courses/lectures with 850 hours nationally and internationally. One of the most important events of continuing education in Bavaria is the biannual “Bayerische Tierärz tetage”. At the last meeting in 2011 in Nuremberg, 40 Faculty staff members were active as speakers and about 1500 participants took part in the 27 sessions offered.

**Internet courses**

The teaching staff of the Clinic of Small Animal Medicine runs the so-called “Webinare”, organised by a company (IDEXXX) four times yearly. On each web conference, a topic is presented and discussed for 90 minutes.
11.2 **COMMENTS AND SUGGESTIONS**

Traditionally, the leading organisations which organise Continuing Education in Germany are the federal and regional Chambers of Veterinary Surgeons together with the federal and regional Associations of Practitioners. Members of the Faculty are very active in providing Continuing Education (Continuing Professional Development). In our view, there is no need to change this system.

**NOTES**

........................................................................................................................................
........................................................................................................................................
........................................................................................................................................
........................................................................................................................................
........................................................................................................................................
........................................................................................................................................
12 POSTGRADUATE EDUCATION

12.1 FACTUAL INFORMATION

The Faculty provides various postgraduate programmes for clinical specialty training as well as for education in research.

12.1.1 SPECIALISATION

Qualification as “Diplomate”

A total of 40 members of academic staff act as supervisors for the qualification of diplomates from European or American Colleges. The respective institutions are recognised for training of residents (see Table 12.1).

Post-graduate students involved in those programmes receive either a scholarship or work on (part-time) positions.

Table 12.1 Clinical specialty training: European Board Specialisation (2011/2012)

<table>
<thead>
<tr>
<th>Clinical discipline</th>
<th>No. residents</th>
<th>No. diplomats</th>
</tr>
</thead>
<tbody>
<tr>
<td>European College of Veterinary Internal Medicine – Companion Animals (ECVIM-CA)</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>European College of Veterinary Internal Medicine – Companion Animals (ECVIM-CA), Cardiology / American College of Veterinary Internal Medicine (ACVIM), Cardiology</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>European College of Veterinary Internal Medicine – Companion Animals (ECVIM-CA), Oncology</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>European College of Veterinary Dermatology (ECVD) / American College of Veterinary Dermatology (ACVD)</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>American College of Veterinary Radiology (ACVR)</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>European College of Veterinary Neurology (ECVN) / American College of Veterinary Internal Medicine (ACVIM), Neurology</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>European College of Veterinary Surgeons (ECVS)</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>European College of Veterinary Diagnostic Imaging (ECVDI)</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>European College of Animal Reproduction (ECAR)</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>European College of Zoological Medicine (ECZM),</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>
Qualification as "Fachtierarzt" (National Veterinary Specialist)

In Germany, the national board certificate is the “Fachtierarzt”, a degree granted by the Veterinary Chamber of federal states. In Bavaria, this qualification can be obtained in about 40 main disciplines (pre-, para- and clinical subjects). The Regional Veterinary Chamber defines the training programme and the time requirements for each discipline.

In 2012, approximately 27 disciplines are offered to postgraduate students for national board certification (Fachtierarzt). Among the staff of the Faculty, there are close to one hundred Veterinary Specialists authorized to act as a supervisor for national board certification.

**12.1.2 RESEARCH EDUCATION PROGRAMMES**

**Doctorate of Veterinary Medicine (Dr. med. vet.)**

The Faculty awards the degree Dr. med. vet. to veterinarians who have performed 2 to 3 years of research work and written a thesis on the subject of their research works under supervision. The requirements are outlined in the Rules for Obtaining a...
Doctorate in Veterinary Medicine (Promotionsordnung). The Promotions Committee of the Faculty (full professors, associate professors, senior lecturer) chaired by the Dean, decides on all matters of the doctoral programme, including acceptance of students and performance of oral examinations. About 60 – 70% of a class enter the doctoral course.

**Doctorate of Veterinary Biology (Dr. rer. biol. vet.)**

The Faculty offers the degree Dr. rer. biol. vet. to postgraduate students of other faculties (e.g. Biology). This course has been introduced to attract postgraduate students with a special expertise in specific research topics. About 4 – 5 candidates per year receive the degree Dr. rer. biol. vet.

**Habilitation (Dr. med. vet. habil.)**

The Habilitation is the highest academic degree in German speaking countries. It requires about 4 years of a specific research project on top of a foregoing basic research activity, a presentation of a written thesis, either as a monograph or as a compilation of published papers on a specific scientific topic. The thesis will be accepted by the Faculty after a thorough review by experts in the field which is followed by a public oral presentation and discussion. The so-called “Enlarged Faculty Council” (members of the Faculty Council plus all professors of the Faculty), chaired by the Dean, is responsible for all matters of Habilitation. The requirements are outlined in the Rules for Obtaining a Habilitation in Veterinary Medicine (Habilitationsordnung). The Habilitation is still an important qualification for an appointment as a professor, although it is not a prerequisite anymore. Between 2 to 4 candidates receive the degree Dr. med. vet. habil. per year.

**Table 12.2 Number of academic degrees awarded by the Faculty in the last five years (summer term 2006 - winter term 2010/11)**

<table>
<thead>
<tr>
<th>Type of degree</th>
<th>male</th>
<th>female</th>
<th>total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr. med. vet.</td>
<td>163</td>
<td>687</td>
<td>850</td>
</tr>
<tr>
<td>Dr. rer. biol. vet.</td>
<td>10</td>
<td>12</td>
<td>22</td>
</tr>
<tr>
<td>Dr. med. vet. habil.</td>
<td>8</td>
<td>9</td>
<td>17</td>
</tr>
</tbody>
</table>
12.2 **COMMENTS AND SUGGESTIONS**

The institutions of the Faculty are very active in providing postgraduate specialisation. The high number of diplomates (European or American colleges) or national board certified specialists (*Fachtierarzt*) among the academic staff provide excellent training opportunities for residents in almost all specialisations of the profession.

The percentage of graduates who enter the first level of a research training programme (Dr. med. vet.) is 60 – 70%. We would like to increase the number of young academics doing a *Habilitation* to increase the competition among candidates applying for professorships.

**NOTES**

…………………………………………………………………………………………………

…………………………………………………………………………………………………

…………………………………………………………………………………………………

…………………………………………………………………………………………………

…………………………………………………………………………………………………

…………………………………………………………………………………………………

…………………………………………………………………………………………………
13 RESEARCH

13.1 FACTUAL INFORMATION

13.1.1 RESEARCH ACTIVITY AT THE VETERINARY FACULTY

The LMU is consistently the highest-ranked German university in international rankings. The LMU is the most successful university in the national Excellence Initiative. Therefore, LMU places a high priority on research output in any faculty. Consequently, in 2008, the Faculty developed a strategic concept to join forces and focus the research activities on four key research areas:

- Translational Medicine
- Infection and Immunity
- Reproductive Medicine, Biology and Biotechnology
- Veterinary Public Health

In research area A (Translational Medicine), various groups of our Faculty are closely interacting with the Medical Faculty, the Faculty of Biology, and the Faculty of Chemistry and Pharmacy. In addition, there are close research links with the Helmholtz Centre Munich. Our Faculty developed unique infrastructure platforms, such as the Laboratory for Functional Genome Analysis (LAFUGA; www.lafuga.de) providing cutting-edge technology in the fields of genome analysis, transcriptomics and proteomics with a particular focus on disease models. Further, members of our Faculty are leading experts in the field of genetic engineering of livestock species. Thus, our Faculty is one of the few institutions worldwide being able to generate tailored large animal models, especially pigs. The Bavarian Government made a major investment of nearly 5 Mio € to build a new facility particularly for genetically tailored pig models at our biotechnology station at the Moorversuchsgut Badersfeld.

Research area B (Infection and Immunity) has a very strong focus in chicken immunology and markedly profited from recent recruitments on the Chairs for Virology (Prof. Sutter) and Bacteriology and Mycology (Prof. Straubinger). These institutions acquired multiple research projects from different sources, addressing basic mechanisms in infection and immune biology, but also new strategies for the development of vaccines.

Research area C (Reproductive Medicine, Biology and Biotechnology) is another strong research focus of the Faculty, with multiple interactions between members of the Department of Veterinary Sciences and the Centre for Clinical Veterinary Medicine. Within the Excellence Initiative we received a 300,000 € grant to establish the Centre for Reproductive Medicine, Biology and Biotechnology (ReproZentrum). This includes an EU approved Embryo Transfer Station at our Biotechnology Unit Badersfeld, which is also used for training of selected students and for postgraduate research.

Research area D (Veterinary Public Health) was recognized as the fourth key research area and was strengthened by recent excellent recruitments on the Chair of Food Safety (Prof. Gareis), the Clinic for Swine (Prof. Ritzmann) and the Chair for...
Fishery Biology and Fish Diseases (Prof. Palic). There is a close cooperation with the Bavarian Authority for Health and Food Safety in Oberschleissheim).

The Faculty is very successful in attracting money from national and international grants (see Chapter 3, Tables 3.1, 3.2, 3.3):

- 2009: 6,850,394 €
- 2010: 6,090,231 €
- 2011: 5,317,210 €

With the appointment of several high-profile scientists during recent years and in the near future (Chairs for Anatomy, Physiology, Parasitology and Pathology), we expect to maintain or even increase the level of grants.

The Faculty in Munich has a number of outstanding scientists. The German journal “Laborjournal” publishes regularly citation rankings. In a ranking (based on number of citations) of scientists in the field of Veterinary Medicine in 2008, 4 members of the Faculty in Munich were ranked number one to four (H.J. Gabius, S. André, H. Kaltner, E. Wolf). Other members of the Faculty ranked among the Top 50 were H. Potschka (10), V. Zakhartchenko (21) and F. Sinowatz (34). In a ranking in the field of reproductive biology and medicine (not restricted to Vet Medicine), E. Wolf was ranked second and F. Sinowatz No. 14.

A bibliographic survey of the LMU in 2009 among faculties demonstrated that the publication output and impact of Veterinary Medicine was comparable (when corrected for the average impact factor of a scientific field) to the Faculty of Biology as well as the Faculty of Chemistry.

**13.1.2 INVOLVEMENT OF UNDERGRADUATE STUDENTS IN RESEARCH**

Specific research projects for undergraduate students are not part of the veterinary curriculum. However, many of the electives cover topics based on ongoing research projects and thus provide a good insight into research.

There are a very limited number of students who join a laboratory during their undergraduate studies and are involved to some extent in specific research projects. These students get an introduction to research work and insight into the research areas of the Faculty.

Students have the option to spend a maximum of 8 weeks in a research institution as part of the 16 week extramural clinical training during the 5th year of education. The results of the questionnaires on extramurals show that approximately 5% of students use this option.

The University has received a grant of 23,000,000 € during the Excellence Initiative. Part of this money will be dedicated to funds for research projects of undergraduate students. The Faculty has already received initial funding and has applied for additional projects until 2014 (total 353,740 €; 3 FTE). Research projects could be scheduled during the clinical year or as a part of the clinical extramural.
13.2 COMMENTS AND SUGGESTIONS

There is a major commitment within the Faculty to research as evidenced by the high level of grants and scientific output. This is a prerequisite also for the quality of teaching. Although there is no provision for research projects of students in the curriculum, students are consistently confronted with results of the latest research in lectures, electives and clinical work. A new grant at university level is available to support research projects of students.

The number of graduates entering the doctoral course (see Chapter 12) has been on a high level over many years. These postgraduates significantly contribute to the scientific output of the Faculty. Therefore, the majority of students will get an extensive experience in research as postgraduates. Although many of those students will not pursue a career in research, all of them will profit from their exposure to active research work for their future professional life.

NOTES

........................................................................................................................................
........................................................................................................................................
........................................................................................................................................
........................................................................................................................................
........................................................................................................................................
........................................................................................................................................
## ANNEX A

### A1 SUMMARY OF RATIOS

<table>
<thead>
<tr>
<th>Ratio</th>
<th>Description</th>
<th>Number</th>
<th>Denominator</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1</td>
<td>no. total academic FTE in veterinary training</td>
<td>240.4</td>
<td>6.67</td>
</tr>
<tr>
<td></td>
<td>no. undergraduate veterinary students</td>
<td>1604</td>
<td></td>
</tr>
<tr>
<td>R2</td>
<td>no. total FTE at Faculty</td>
<td>524.9</td>
<td>3.05</td>
</tr>
<tr>
<td></td>
<td>no. undergraduate veterinary students</td>
<td>1604</td>
<td></td>
</tr>
<tr>
<td>R3</td>
<td>no. VS FTE in veterinary training</td>
<td>200.4</td>
<td>8.00</td>
</tr>
<tr>
<td></td>
<td>no. undergraduate veterinary students</td>
<td>1604</td>
<td></td>
</tr>
<tr>
<td>R4</td>
<td>no. VS FTE in veterinary training</td>
<td>200.4</td>
<td>1.15</td>
</tr>
<tr>
<td></td>
<td>no. students graduating annually</td>
<td>230</td>
<td></td>
</tr>
<tr>
<td>R5</td>
<td>no. total FTE academic staff in veterinary training</td>
<td>240.4</td>
<td>1.18</td>
</tr>
<tr>
<td></td>
<td>no. total FTE support staff in veterinary training</td>
<td>284.5</td>
<td></td>
</tr>
<tr>
<td>R6</td>
<td>Theoretical training</td>
<td>2476</td>
<td>0.51</td>
</tr>
<tr>
<td></td>
<td>Supervised Practical Training</td>
<td>1276</td>
<td></td>
</tr>
<tr>
<td>R7</td>
<td>Clinical Work</td>
<td>716</td>
<td>0.92</td>
</tr>
<tr>
<td></td>
<td>Laboratory work and non-clinical work</td>
<td>658</td>
<td></td>
</tr>
<tr>
<td>R8</td>
<td>Self directed learning</td>
<td>162</td>
<td>30.99</td>
</tr>
<tr>
<td></td>
<td>Teaching load</td>
<td>5020</td>
<td></td>
</tr>
<tr>
<td>R9</td>
<td>Food Hygiene/Public Health</td>
<td>516</td>
<td>9.73</td>
</tr>
<tr>
<td></td>
<td>Total No. Curriculum Hours</td>
<td>5020</td>
<td></td>
</tr>
<tr>
<td>R10</td>
<td>Food Hygiene/Public Health</td>
<td>516</td>
<td>0.48</td>
</tr>
<tr>
<td></td>
<td>Hours obligatory extramural work in veterinary meet inspection</td>
<td>250</td>
<td></td>
</tr>
<tr>
<td>R11</td>
<td>no. of students graduating annually</td>
<td>230</td>
<td>9.65</td>
</tr>
<tr>
<td></td>
<td>no. of food producing animals seen at the Faculty</td>
<td>2220</td>
<td></td>
</tr>
<tr>
<td>R12</td>
<td>no. of students graduating annually</td>
<td>230</td>
<td>35.93</td>
</tr>
<tr>
<td></td>
<td>no. of individual food animal consultations outside the Faculty</td>
<td>8265</td>
<td></td>
</tr>
<tr>
<td>R13</td>
<td>no. of students graduating annually</td>
<td>230</td>
<td>0.45</td>
</tr>
<tr>
<td></td>
<td>no. of heard health visits</td>
<td>104.6</td>
<td></td>
</tr>
<tr>
<td>R14</td>
<td>no. of students graduating annually</td>
<td>230</td>
<td>5.22</td>
</tr>
<tr>
<td></td>
<td>no. of equine cases</td>
<td>1201</td>
<td></td>
</tr>
<tr>
<td>Ratio</td>
<td>Description</td>
<td>Number</td>
<td>Denominator</td>
</tr>
<tr>
<td>-------</td>
<td>-----------------------------------------------------------------------------</td>
<td>--------</td>
<td>-------------</td>
</tr>
<tr>
<td>R15</td>
<td>no. of students graduating annually</td>
<td></td>
<td>Not applicable</td>
</tr>
<tr>
<td></td>
<td>no. of poultry/rabbit cases</td>
<td></td>
<td></td>
</tr>
<tr>
<td>R16</td>
<td>no. of students graduating annually</td>
<td>230</td>
<td>63.37</td>
</tr>
<tr>
<td></td>
<td>no. of companion animals seen at the Faculty</td>
<td>14567</td>
<td></td>
</tr>
<tr>
<td>R17</td>
<td>no. of students graduating annually</td>
<td>230</td>
<td>0.08</td>
</tr>
<tr>
<td></td>
<td>poultry (flocks)/rabbits (production units) seen</td>
<td>19.3</td>
<td></td>
</tr>
<tr>
<td>R17</td>
<td>no. of students graduating annually</td>
<td>230</td>
<td>0.08</td>
</tr>
<tr>
<td></td>
<td>poultry (flocks)/rabbits (production units) seen</td>
<td>19.3</td>
<td></td>
</tr>
<tr>
<td>R18</td>
<td>no. of students graduating annually</td>
<td>230</td>
<td>2.15</td>
</tr>
<tr>
<td></td>
<td>no. of necropsies food producing animals + equine</td>
<td>494</td>
<td></td>
</tr>
<tr>
<td>R19</td>
<td>no. of students graduating annually</td>
<td>230</td>
<td>5.22</td>
</tr>
<tr>
<td></td>
<td>no. of necropsies poultry</td>
<td>1200</td>
<td></td>
</tr>
<tr>
<td>R20</td>
<td>no. of students graduating annually</td>
<td>230</td>
<td>2.83</td>
</tr>
<tr>
<td></td>
<td>no. of necropsies companion animals</td>
<td>652</td>
<td></td>
</tr>
</tbody>
</table>
Ordinance concerning the Certification of Veterinary Surgeons
(Verordnung zur Approbation von Tierärzten und Tierärztinnen – TAppN)

Issue date: 27 July 2006

Full quote:


Version: Amended by Art. 37 of the Act of 2 December 2007 Part I 2686

Preamble


CHAPTER I

VETERINARY TRAINING

Section 1

Objectives and Structure of Veterinary Training

(1) The objective of the training is an academically and practically trained veterinary surgeon who is capable of practicing the veterinary profession responsibly and independently within the meaning of Section 1 of the Federal Veterinary Code and of undergoing further training and ongoing advanced training.

1. The fundamental veterinary, scientific, interdisciplinary and methodological skills,

2. practical skills,

3. spiritual and ethical foundations, and

4. a professional attitude committed to the well-being of humans, animals and the environment

shall be imparted as they are necessary for the entire scope of the veterinary profession to be practiced responsibly, taking special account of quality assurance.

(2) Veterinary training shall comprise

1. an academic-theoretical component of studies in veterinary medicine lasting for four and a half years with 3,850 hours of compulsory and optional courses, which must not be exceeded, at a
ANNEX 2

2. a practical component of studies lasting for 1,170 hours, with
   a) 70 hours on agriculture, animal breeding and animal husbandry,
   b) 150 hours in the therapeutic practice of a veterinary surgeon or in an animal hospital under veterinary supervision,
   c) 75 hours in hygiene control and control of foodstuffs,
   d) 100 hours in the inspection of animals for slaughter and meat,
   e) 75 hours in the public veterinary service,
   f) 700 hours in the therapeutic practice of a veterinary surgeon or in an animal hospital under veterinary supervision or an elective placement,

3. the following examinations:
   a) the Preliminary Veterinary Examination,
   b) the Veterinary Examination.

The standard period of study within the meaning of Section 10 (2) of the Framework Act on Higher Education (Hochschulrahmengesetz) shall be five years and six months for the entire training.

Section 2
Courses

(1) The university shall provide an education that complies with the objectives cited in Section 1 (1) and that allows the students to acquire the knowledge and skills required in the examinations provided for in this Ordinance. The imparting of the fundamentals of natural science and theory is to be concentrated on the training content that is relevant to veterinary medicine. The theoretical and clinical knowledge is to be linked as closely as possible during the entire training. For this purpose the university shall conduct, in particular, lectures, seminars, clinical demonstrations and exercises, including exercises on the animal, in the subjects cited at Annex 1. It may replace parts of these courses with appropriate interactive learning programmes. The number of students in the seminars, at the clinical demonstrations and the exercises shall be tailored to the teaching task by the universities. As far as possible and where appropriate, the contents of the teaching shall not be oriented to the individual discipline, but shall be imparted in an interdisciplinary, problem-oriented manner in line with the object of teaching. Interdisciplinary teaching shall be conducted and co-ordinated with the involvement of representatives from several subjects. The Rules for Study at each university shall govern this in more detail.

(2) During their studies the students shall participate in at least those teaching events cited in (1) sentence 4 above that the university shall designate as compulsory courses. The compulsory and optional courses shall amount to an average of 30 hours per week in a semester, except during the clinical training and the placements. They must contain the disciplines listed at Annex 1 with the required number of hours.

(3) The university shall offer optional courses in subjects cited at Annex 1, in which the students shall participate with at least 308 hours from the 1st to the 9th semesters, including at least 84 hours in subject areas for the Anatomical-Physiological Stage of the Preliminary Veterinary Examination and at least 126 hours in the subject areas of the Veterinary Examination.

(4) During the 8th and 9th semesters, the students shall participate in the compulsory course in the interdisciplinary subject.

Section 3
Trial Clause

(1) While retaining the total number of hours for the scientific-theoretical part of the course, amounting to 3,850 hours, the universities may make provision for deviations from the number of hours
for the subjects listed at Annex 1 by up to 20 per cent of the total number of hours, subject to the proviso of (2).

(2) Subjects with 28 hours or fewer, as well as the subjects listed in Annex 1 Nos. 28 to 31, shall be excluded from the possibility of reducing the number of hours.

(3) The deviations in accordance with (1) shall be subject to the proviso that

1. the training objectives in accordance with Section 1 (1) as a foundation of the certification in accordance with Section 4 (1) of the Federal Veterinary Code are not jeopardised,
2. it has been ensured that the requirements of Article 38 of Directive 2005/36/EC of the European Parliament and of the Council of 7 September 2005 on the recognition of professional qualifications (OJ EC L 178 p. 7) have been satisfied,
3. the conditions under which the university can reverse the deviations have been regulated,
4. it is still possible for the students to change university.

(4) The universities that avail themselves of the deviation in accordance with (1) shall inform the competent authority of this with a description of the objective of the trial and the expected quality improvements for veterinary training. Upon request they shall submit a report to the competent authority on the experience gathered.

Section 4
Model course of studies

(1) For the trial of new models of veterinary training, the competent authority, on request from a university, may introduce a model course derogating from the standard course of studies and may determine the respective contents. The goals of training as defined in Section 1 (1) must remain unaffected.

(2) Approval as a model course of studies shall be contingent on
1. the objective of the trial being described and revealing what qualitative improvements are anticipated for veterinary training to emerge from the model course of studies,
2. there being a special Rules for Study issued by the University,
3. it being ensured that the knowledge, skills and abilities to be proven in the Preliminary Veterinary Examination and the Veterinary Examination are examined in the model course of studies in a manner equivalent to the standard course of studies,
4. a proper, accompanying, final evaluation of the model course of studies by the university, using external expertise, is guaranteed,
5. the minimum and maximum duration of the model course of studies has been determined and extension applications are to be reasoned using results of the evaluation,
6. the prerequisites are named subject to which the university can discontinue the model course of studies,
7. the procedure to be followed on transition from the model course of studies to the standard course of studies is to be regulated with regard to further studies, allowance of study times and examinations and other study achievements, and
8. it is determined how the requirements of the standard course of studies as to the Preliminary Veterinary Examination and the Veterinary Examination are met in the model course of studies.
CHAPTER 2
EXAMINATION REGULATIONS

Sub Chapter 1
General Regulations

Section 5
Examination Committees

(1) One state examination committee of the Preliminary Veterinary Examination and one state examination committee for the Veterinary Examination shall be formed at every university.

(2) Every examination committee shall comprise the Chairman, one or more deputies and further members. The members of the examination committee shall be appointed in writing as examiners for specific examination subjects and each for no more than four years after the university has been heard by the competent authority. Professors from the university shall be appointed as Chairman and deputies and professors or other teaching staff from the subjects being examined shall be appointed as other members.

(3) The Chairman shall be responsible for supervision of the examinations and their proper implementation. He or she shall ensure that students who meet all the requirements for admission to the examination can take initial examinations in the respective examination subjects within the deadlines prescribed by the university. In urgent cases, the Chairman may, with the agreement of the competent authority, authorise a member of the teaching staff to temporarily take care of the examination business.

Section 6
Competent Examination Committee

The students shall sit the stages of the Preliminary Veterinary Examination and the Veterinary Examination before the competent examination committee at the university at which they are enrolled on the Veterinary Medicine course at the time they registered for the examination or were most recently enrolled. Retest examinations shall be set before the examination committee where the examination was failed.

Section 7
Registration for the Examination

(1) For the examinations of the Preliminary Veterinary Examination in accordance with sections 19 and 22, and prior to the examinations of the Veterinary Examination in accordance with section 29, an application for approval shall be made to the Chairman of the examination committee. The following shall be enclosed with the application:

1. personal identification,

2. proof of entitlement to study at a university, in the case of certificates acquired outside the area of application of this Ordinance, also the recognition decision of the competent authority, as well as

3. the required proof of training in accordance with Sections 20, 23 and 31. The proof under sentence 2 Nos. 1 and 2 shall only be enclosed prior to the first examination at a university.

(2) The proof shall be submitted as originals or as officially certified copies. It may be submitted in another form insofar as this is recognised in the individual case by the Chairman of the examination committee as being equivalent. The proof shall be placed in the examination files until completion of the relevant stage of the examination and then returned.
Section 8
Admission to the Examination

(1) The Chairman shall decide on admission to the examinations on behalf of the examination committee.

(2) Admission shall be refused if the student cannot furnish the required proof or may not resit an examination in accordance with Section 17 (1) sentence 3.

(3) After admission to the examination, the examinations shall be sat within the deadlines set by the university.

Section 9
Sitting the Examination

(1) The examinations shall be held by the members of the examination committee appointed or commissioned for the examination subjects concerned. They may also be held by several examiners.

(2) The Chairman or his deputy may participate in the examinations and set examination questions.

(3) The competent authority may send observers to the oral examinations. After prior registration, the Chairman of the examination committee shall allow up to five students of veterinary medicine who have already been admitted to the same examination or who are in the stage of training prior to the examination concerned, as well as one representative of the competent Chamber of Veterinary Surgeons, to be present at the examination, with the exception of the deliberations and the announcement of the examination results, provided that none of the candidates objects.

Section 10
Form of the Examination

(1) The examination may be conducted in writing, orally, by solving questions set in writing whereby it is to be stated which of the answers proposed with the questions are considered to be correct (multiple choice) or in a combination of these forms of examinations. The university may also derive the examination mark from continuous assessment; the provision of proof about regular and successful participation in the seminars and exercises shall remain unaffected. In individual examination subjects, the examination can be taken in several part examinations.

(2) No more than five students shall be examined together in the oral examination.

(3) If students can demonstrate with a medical certificate that they cannot sit the examination fully or partially in the intended form due to a physical disability, the Chairman shall allow equivalent examination achievements to be demonstrated by different means.

(4) The university shall define the form of the examination for the respective examination subject in accordance with (1), as well as the respectively necessary deviations from Sections 9, 11, 12 and 14, in a supplementary Code of Examination Regulations (Section 16 of the Framework Act on Higher Education).

Section 11
Examination Date

(1) The examinations shall be carried out soon after the lessons. They should be held in the periods free of lectures; they should as a rule be completed by the start of the next period of lectures, with the exception of resits. The Chairman shall set the examination dates in agreement with the examiners involved. The examinations shall be set in such a way that the standard study period pursuant to Section 1 (2) sentence 2 is not exceeded.
(2) The time in which no compulsory courses or placements are to be attended by the students concerned shall be regarded as periods free of lectures.

Section 12
Invitation to Sit the Examination, Failure to Attend

(1) The students shall be informed of the examination date at the latest seven days prior to the examination date. The information shall be served.

(2) If, for good reason, students miss an examination date or miss the deadline for handing in a written protocol of findings, they shall be invited to sit a new examination, which shall not be considered a resit, or a new deadline shall be set for them. The reason for the omission shall also be sent to the Chairman in writing without undue delay and its validity shall be demonstrated upon request. In the event of omission due to illness a medical certificate shall also be submitted. The Chairman may demand that the certificate from a health office be submitted. The achievements of the students in the examination concerned shall be deemed to be “inadequate” in the event of failure to attend without good reason.

(3) If the students discontinue an examination or withdraw from it, (2) above shall apply mutatis mutandis.

(4) Students who have not registered for an examination without good reason at the latest one academic year after the earliest possible date for them or six months before the last possible date for them shall be invited to attend mandatory student counselling ex officio by the Chairman of the examination committee.

Section 13
Objective of the Examination

(1) The examination shall determine whether the students have acquired the knowledge and skills that they need to continue their studies and to perform the veterinary profession. The examination shall also cover whether the students understand how to theoretically and practically apply the basic knowledge they have proved in previous stages of the examination and whether they master the common specialist terminology.

(2) If a patient or another examination object upon which the students are to be examined is not available, the examiner shall decide how the examination shall be conducted properly, where appropriate on a dummy or a model.

Section 14
Examination Marks

(1) The examiner or a record keeper appointed by the Chairman shall in each case keep a written record of the course of the oral examination in accordance with the model in Annex 2, from which the subject matter of the examination and the assessment of the achievements can be seen. The examiners shall use the following examination marks to assess the examination achievements:

1. “very good” (1) = an outstanding achievement,
2. “good” (2) = an achievement that is considerably above the average requirements,
3. “satisfactory” (3) = an achievement that satisfies the average requirements in every respect,
4. “adequate” (4) = an achievement that still meets the requirements in spite of its shortcomings,
5. “inadequate” (5) = an achievement that no longer meets the requirements due to considerable shortcomings.

On proviso of Section 15, the examination mark “inadequate” may be awarded in an oral examination only if the students have been examined for at least 20 minutes; it shall be briefly justified in the written record.
(2) The university shall define a binding evaluation framework prior to the examination for examinations which are carried out by solving questions set in writing whereby it is to be stated which of the answers proposed with the questions are considered to be correct (multiple choice).

(3) The result of the examination shall be announced to the students after completion of the examination in each examination subject.

Section 15
Irregularities

If students disrupt the orderly course of the examination, or if they attempt to perpetrate deception, the examiner may interrupt the examination of these students. The Chairman, in agreement with the examiners concerned, may declare the achievements of these students in the examination concerned to be “inadequate” or, in particularly serious cases, declare the stage of the examination to have been failed.

Section 16
Results of the Examination

(1) The Chairman shall specify the results of the examination and award the certificates in accordance with Annexes 3 to 5. The certificates shall contain a list of the examination marks for the examination subjects as well as the overall results after the Preliminary Veterinary Examination and the Veterinary Examination have been passed. Examinations credited in accordance with Section 65 shall be identified separately on the certificates.

(2) An examination subject shall be deemed to have been passed if the students have received at least the examination mark “adequate”.

(3) A stage of the Preliminary Veterinary Examination or the Veterinary Examination shall be deemed to have been passed if the students have passed all of the examination subjects in the stage concerned.

(4) The overall results of the Preliminary Veterinary Examination and of the Veterinary Examination shall each be made up of the average of the examination marks received for the examination subjects in the relevant stages. The average mark shall be calculated to two decimal places, the third decimal place not being taken into account. The overall mark shall be

1. “very good” for a numerical value of up to 1.49
2. “good” for a numerical value of 1.50 to 2.49
3. “satisfactory” for a numerical value of 2.50 to 3.49
4. “adequate” for a numerical value of 3.50 to 4.00.

(5) A certificate following the model of Annex 4 shall be drawn up to confirm that the Preliminary Veterinary Examination has been passed and a certificate following the model of Annex 5 shall be drawn up to confirm that the Veterinary Examination has been passed, each of which shall contain the numerical value in brackets adjacent to the overall result. If students have not passed the Preliminary Veterinary Examination or the Veterinary Examination, an overall mark shall not be calculated; if examinations have been credited in accordance with Section 65, an overall mark shall not be calculated unless the Chairman of the examination committee ascertains that the other examination marks obtained would permit a meaningful overall mark to be determined.

Section 17
Resitting the Examination

(1) Students may resit the examination twice in examination subjects that they have not passed. Section 20 (2) shall remain unaffected. If an examination subject is not passed when it has been resat twice, the Chairman shall declare that the examination has definitively not been passed. Another resit, even after studying veterinary medicine again, shall not be possible. The Chairman shall inform the other universities, as well as the authorities responsible for crediting students’ achievements, thereof.
(2) A resit examination may be conducted at the earliest three weeks after the failed examination.

(3) Apart from the examiner, the chairperson or a member of the committee designated by him/her shall attend oral examinations at the second resit; they may also ask examination questions. With written examinations, the work of the second resit is to be evaluated, apart from by the examiner, by the chairperson or a member of the committee designated by him/her. At the request of the student, sentences 1 and 2 shall also apply mutatis mutandis to the first resit in accordance with the supplementary Code of Examination Regulations.

Section 18
Notification of the Examination Results

After completion of the Veterinary Examination, the Chairman shall notify the competent authority of the names of the students and the examination results.

Sub Chapter 2
Scientific Stage of the Preliminary Veterinary Examination
(Preliminary Physics)

Section 19
Examination Subjects

Preliminary Physics shall comprise the following examination subjects

1. Physics, including the fundamentals of Health Physics,
2. Chemistry,
3. Zoology, and
4. Botany, including Nutritional Science, Toxicology and Herbalism.

The examinations shall be set by the end of the first year of studies.

Section 20
Proof

(1) The following proof shall be necessary for admission to the examinations

1. certification of regular, successful attendance at the seminars or exercises in the subjects set by the university for the examination subject in
   a) Physics, including the fundamentals of Health Physics,
   b) Chemistry,
   c) Zoology, and
   d) Botany, including Nutritional Science, Toxicology and Herbalism;

2. certification of regular, successful attendance at a course of medical terminology conducted by the university or recognised as equivalent by the Chairman of the examination committee; this proof may be replaced if a knowledge of Latin or Greek in accordance with the Decision of the Conference of Education Ministers of 26 October 1979 (Joint Ministerial Gazette 1980 p. 642) can be demonstrated.

(2) The university may offer students the opportunity to prove in an oral examination within the first month of starting the first semester of studies that they have sufficient knowledge of the subjects designated in (1) no. (1) (a) to (d) above. Proof of sufficient knowledge in accordance with Section 21 in one or more of these subjects shall be deemed as a passed examination within the meaning of Section 19 and as proof within the meaning of (1) above. If the examination is not passed in one or more subjects in accordance with sentence 1, the examination shall be deemed not to have been passed.
Section 21
Contents of the Examination

The examinations in the examination subjects of Physics, including the fundamentals of Health Physics, Chemistry, Zoology and Botany including Nutritional Science, Toxicology and Herbalism, shall cover the main basic knowledge required to understand natural processes and to subsequently apply them in veterinary medicine.

Sub-Chapter 3
Anatomical-Physiological Stage of the Preliminary Veterinary Examination (Physics)

Section 22
Examination Subjects

Physics shall comprise the following examination subjects

1. Anatomy,
2. Histology and Embryology,
3. Physiology,
4. Biochemistry, and
5. Animal Breeding and Genetics including Livestock Judging.

The examinations should be taken by the end of the second year of studies.

Section 23
Proof

1. The following proof shall be necessary for admission to the examinations

2. certification of having regularly and successfully attended seminars and exercises in subjects set by the university for the respective examination subject in

   a) Anatomy,
   b) Histology,
   c) Embryology,
   d) Physiology,
   e) Biochemistry, and
   f) Animal Breeding and Genetics, including Livestock Judging

3. certification from the university of having attended a 70-hour exercise in two consecutive weeks on Agriculture, Animal Breeding and Animal Husbandry on a teaching farm and

4. certification from the university of having regularly and successfully attended at least 84 hours of optional teaching events in subjects in accordance with no. 2.

(2) The requirements of (1) no. 3 shall be deemed to have been met if an agricultural course with assistants' examination, a four-week agricultural placement on a recognised teaching farm or another comparable course recognised by the university has been completed.
Section 24
Anatomy

In the examination subject of Anatomy, the students shall completely or partially explain the contents of a bodily cavity, where necessary shall also remove it and each prepare a subject on the locomotor system and the organs or organ systems on the basis of existing preparations or preparations to be made up.

Section 25
Histology and Embryology

In the examination subject of Histology and Embryology, the students shall demonstrate their knowledge of cell theory, histology and organology on the microscopic-anatomical preparation as well as in general and specific development theory.

Section 26
Physiology

In the examination subject of Physiology, the students shall solve or evaluate an exercise problem from the field of Physiology and explain it and demonstrate their knowledge of the physiological foundations of living processes and the normal functional course of individual organ systems and their regulation in the organism as a whole. Nutritional physiology shall be considered.

Section 27
Biochemistry

In the examination subject of Biochemistry, the students shall solve or evaluate an exercise problem and explain it and demonstrate their knowledge of the biochemical and molecular-biological foundations of living processes and their management. The particularities of the intermediary metabolism among pet animals and production animals, as well as the biochemistry of nutrition, shall be considered.

Section 28
Animal Breeding and Genetics including Livestock Judging

In the examination subject of Animal Breeding and Genetics, the students shall assess a pet animal in terms of its commercial or breeding value and prove that they have acquired sufficient knowledge of genetics and in breeding pet animals.

Sub Chapter 4
Veterinary Examination

Section 29
Examination Subjects

The Veterinary Examination shall comprise the examination subjects

1. Animal Husbandry and Animal Hygiene,
2. Animal Welfare and Ethnology,
3. Animal Nutrition,
4. Clinical Propedetics,
5. Virology,
6. Bacteriology and Mycology,
7. Parasitology,
8. Control of Animal Epidemics and Infection Epidemiology,
9. Pharmacology and Toxicology,
10. Law on Pharmaceuticals and Narcotics,
11. Poultry Diseases,
13. General Pathology and Special Pathological Anatomy and Histology,
14. Food Science including Food Hygiene,
15. Meat Hygiene,
16. Milk Science,
17. Reproductive Medicine,
18. Internal Medicine,
19. Surgery and Anaesthesiology, and
20. Forensic Veterinary Medicine, Law Governing Professional Matters and Professional Conduct.

Section 30
Special regulations for the final examinations

The examinations in the subjects General Pathology and Special Pathological Anatomy and Histology, Food Hygiene, Meat Hygiene, Milk Hygiene, Internal Medicine, Surgery and Anaesthesiology, Reproductive Medicine, as well as Forensic Veterinary Medicine, Law Governing Professional Matters and Professional Conduct, may not be completed prior to the end of the eighth semester.

Section 31
Proof

(1) The following proof shall be necessary for admission to the examinations

1. certificate relating to the Preliminary Veterinary Examination,
2. certification of having regularly and successfully attended the seminars or exercises set by the university for the respective examination subject of the Veterinary Examination,
3. certification of having attended a practical component of studies necessary for the respective examination subject in accordance with Sections 54 to 62 or another comparable substitute training acknowledged by the university.

(2) Furthermore, the following proof must be provided prior to conclusion of the examinations in accordance with Section 30:
1. certification of having regularly and successfully attended the courses in Biometry, Nutritional Science, Immunology,
2. certification of having studied veterinary medicine for a total of at least five-and-half study years, of which at least three study years after having passed the Preliminary Veterinary Examination, and
3. certification of having regularly and successfully attended for at least 224 hours optional courses, hours from optional courses in accordance with Section 23 (1) no. 4 not being taken into account.

Sub-Chapter 5
Contents of the teaching and study subjects
http://bundesrecht.juris.de/tappv/index.html - BJNR182700006BJNE003300000

Section 32
Animal Husbandry and Animal Hygiene

The examination in the subject of Animal Husbandry and Animal Hygiene shall cover the keeping and care of pet animals and production animals and the importance of environmental influences on the health and performance of the animals as well as the impacts of keeping animals on the environment. In the case of animals that are used to obtain food, the impact of keeping them on the quality of the foodstuffs obtained shall be taken into account.
http://bundesrecht.juris.de/tappv/index.html - BJNR182700006BJNE003400000

Section 33
Animal Welfare and Ethnology

In the examination subject Animal Welfare and Ethnology, students shall prove their knowledge of housing and care of animals that is species-specific and appropriate to their behaviour, as well as of the protection of the animals in animal trade, in animal transport, in slaughtering or killing and in animal
testing, as well as their knowledge of animal welfare regulations with their ethical and scientific foundations, and in ethnology.

http://bundesrecht.juris.de/tappv/index.html - BJNR1827000006BJNE003500000

Section 34
Animal Nutrition

The examination in the subject of Animal Nutrition shall cover nutrition, taking special account of the pathogenesis of illnesses caused by nutrition, a reduction in fertility and performance, the environmentally relevant effects of nutrition, including the possible introduction of unwanted substances into foodstuffs of animal origin and the foundations of dietetics, taking special account of nutritional science as well as the provisions of fodder legislation that are important in the veterinary field.

http://bundesrecht.juris.de/tappv/index.html - BJNR1827000006BJNE003600000

Section 35
Clinical Propadeutics

In the examination subject Clinical Propadeutics, the students shall examine an animal and prove that they have familiarised themselves with the basics of the clinical examination methods.

Section 36
Virology

In the examination subject of Virology, the students shall demonstrate their knowledge of the important types of virus in veterinary medicine, aetiology, the course, diagnosis, prevention and treatment of the illnesses they cause in animals as well as their importance to human health. Questions of immunology, epidemiology and epizootiology shall be taken into account in this connection.

Section 37
Bacteriology and Mycology

In the examination subject of Bacteriology and Mycology, the students shall prepare a microbiological preparation, examine it, explain it and demonstrate their knowledge of the important types of bacteria and fungi in veterinary medicine, aetiology, the course, diagnosis, prevention and treatment of the illnesses they cause in animals as well as their importance to human health. In this connection, questions of immunology, epidemiology and epizootiology shall be taken into account.

Section 38
Parasitology

In the examination subject of Parasitology, the students shall prepare a parasitological preparation, examine it, explain it and demonstrate their knowledge of the biology of animal parasites and the identification, course, treatment and prevention of parasitic illnesses as well as the importance of animal parasites to human health. In this connection, questions of immunology, epidemiology and epizootiology shall be taken into account.

Section 39
Control of Animal Epidemics and Infection Epidemiology

In the examination subject Control of Animal Epidemics and Infection Epidemiology, students shall prove their knowledge of the general principles of the causes, spread, combating and economic impact of animal epidemics, including their prophylaxis, fundamentals of infection epidemiology, the law on animal epidemics, and the regulations on processing animal offal.

http://bundesrecht.juris.de/tappv/index.html - BJNR1827000006BJNE003400000

Section 40
Pharmacology and Toxicology

The examination in the examination subject of Pharmacology and Toxicology shall above all cover the effects and interactions of pharmaceuticals and other active agents in the healthy and diseased organism, a basic knowledge of the therapeutic use of these substances and the associated risks for animals and
humans, as well as Pharmacokinetics, particularly taking into account species-specific biotransformation and the excretion of such substances through an animal’s body. The corresponding impact and characteristics of poisons and environmental contaminants in the healthy or diseased organism, as well as the therapy of acute and chronic poisoning, shall also be covered.

Section 41
Law on Pharmaceuticals and Narcotics

In the examination subject of Law on Pharmaceuticals and Narcotics, students shall prove that they can select and prescribe suitable pharmaceuticals based on at least three symptoms, as well as that they have knowledge of the principles of determining maximum residual amounts and on the derivation of waiting periods. Further, they shall prepare two pharmaceuticals in accordance with a prescription and prepare an invoice in accordance with the provisions applicable to pharmaceuticals prices. Over and above this, students shall prove their knowledge of the relevant legal provisions regarding the sale of pharmaceuticals and narcotics, as well as of the provisions and measures to avoid residuals in animal-origin food.

Section 42
Poultry Diseases

In the examination subject of Poultry Diseases, the students shall demonstrate their knowledge of the aetiology, pathogenesis, diagnostics, prophylactics and treatment of diseases of commercial poultry, wild, fancy and zoo birds, taking special account of keeping and feeding with regard to the origin and treatment of diseases.

Section 43
Radiology

1. The examination in the examination subject of Radiology shall cover the characteristics and impact of ionising rays,
2. the fundamentals of radiobiology,
3. the impact of ionising radiation on people, animals, food, fodder and the environment,
4. methods to prove the impact of radiation and to ascertain doses among employees and persons looking after animals,
5. methods of proving contamination with radioactive substances,
6. physical-technical principles and principles of the application of imaging diagnostic procedures, including the presentation of alternatives to the application of ionising radiation,
7. fundamentals of radiotherapy, as well as
8. the statutory, practical and technical radiological protection of employees and persons looking after animals (content of examinations from nos. 4 to 8 of the Basic Course in Radiological Protection acc. to Annex 1 of the Guideline on Radiological Protection in Veterinary Medicine (Richl. Strahlenschutz in der Tierheilkunde); Joint Ministerial Gazette (Gemeinsames Ministerialblatt – GMBI) 2005 p. 666).

(2) The examination successfully passed in accordance with (1) shall be recognised as a Basic Course in Radiological Protection acc. to Annex 1 of the Guideline on Radiological Protection in Veterinary Medicine if the competent agency has previously found that the prerequisites (content of the teaching from Annex 1 of the Guideline on Radiological Protection in Veterinary Medicine) have been met.

(3) The acquisition of the expertise for the field of X-ray diagnostics cannot be commenced until after the examination has been successfully taken in the examination subject of Radiology during clinical training, and shall be orientated in line with the requirements of the Guideline on Radiological Protection in Veterinary Medicine.

Section 44
General Pathology and Special Pathological Anatomy and Histology

In the examination subject of General Pathology and Special Pathological Anatomy and Histology, the students shall demonstrate that they have acquired basic knowledge of the origins and course, the characteristics and the identification of pathological processes. Furthermore, they shall
identify and explain pathological-histological preparations, carry out an autopsy on an animal cadaver or examine one organ or several organs, explain the findings and then write them down as well as demonstrate their knowledge of identifiable pathological processes and their pathogenesis.

Section 45
Food Science including Food Hygiene

In the examination subject Food Science including Food Hygiene, students shall examine animal-origin food, with the exception of milk or dairy products, evaluate its characteristics, composition and marketability and note the findings. They shall prove their knowledge of their significance for the food of humans, on production, technology of the manufacture and treatment, as well as on their microbiological, chemical and other qualities. In particular, aspects of quality that are relevant to hygiene and health shall be taken into account in doing so. Furthermore, they shall prove knowledge of the influences exerted on food safety and quality at all levels of the food chain and the animals used for production, food, including the measures for quality assurance, evaluation of residues and of the relevant provisions of the law on food. Over and above this, students shall prove that they can categorise the potential causes of errors and faults, the hazards and the possible risks which can occur at all stages of the food chain, in the context of a risk analysis in accordance with scientific principles and take suitable control and correction measures.

Section 46
Meat hygiene

In the examination subject Meat Hygiene, students shall examine an animal for slaughter in the living state and an animal for slaughter in the slaughtered state or parts of a slaughtered animal or culled furred game in accordance with the valid legal provisions, shall make a statement regarding the suitability of the meat for human consumption and record findings and evaluations. They shall further prove their knowledge of the hygienic production and treatment of the meat, the knowledge underlying examination of the animal for slaughter and meat and of the specific legal foundations of meat hygiene, as well as the fundamentals of theory on the operation of abattoirs. To a particular degree, they shall prove their knowledge as regards the principles, concepts and methods of good manufacturing practice, of quality management, of risk analysis on a scientific basis and of a system of critical control points (HACCP procedure; Hazard Analysis Critical Control Point) and shall use case examples to examine and evaluate them. The prevention and containment of food-related risks to human health, as well as methods of epidemiology and monitoring and surveillance systems, shall be explored here.

Section 47
Milk Science

In the examination subject of Milk Science, the students shall examine and assess a milk sample (freshly milked sample, untreated milk sample or treated milk sample) or a dairy product and complete a written examination report. Furthermore, they shall demonstrate their knowledge of the physiology and pathology of milk formation, the hygiene and technology of milking and milk processing as well as of their health-hygiene and especially their microbiological and qualitative influence on the production, processing and marketing of milk and dairy products, including measures for quality assurance, as well as of the relevant legal provisions.

Section 48
Reproduction Medicine

In the examination subject of Reproduction Medicine, students shall examine an animal for sexual health or a pet animal of newborn age, shall make a diagnosis including physical and laboratory diagnostic examination methods, shall evaluate the anticipated course of treatment, shall draw up and explain a therapeutic plan, shall where appropriate initiate or implement treatment and shall draw up a written record of the findings. They shall furthermore prove their knowledge of gynaecology, including the illnesses of the mammary gland, obstetrics including neonatology and obstetric operations, normal reproduction and its disturbances among male domestic animals, as well as reproductive hygiene, artificial insemination and other biotechnical measures, including herd husbandry.
Section 49
Internal Medicine

In the examination subject of Internal Medicine the students shall examine an animal suffering from an internal disease or a skin disease or several such animals, shall make a diagnosis involving physical and laboratory diagnostic investigative methods, shall assess the probable course of the disease, shall draw up and explain a treatment plan, shall where appropriate start or administer the treatment, and shall draw up a written findings record about an examined animal. Furthermore, they shall demonstrate their knowledge of the theory of internal diseases and skin diseases of animals, taking account of general and special therapy as well as herd care.

Section 50
Surgery and Anaesthesiology

In the examination subject of Surgery and Anaesthesiology, students shall examine an animal to be treated surgically or several such animals, shall make a diagnosis, where appropriate including physical and laboratory diagnostic examination methods, shall evaluate the anticipated course of the disease, shall draw up and explain a therapeutic plan, shall where appropriate initiate or implement treatment and shall draw up a written record of the findings with regard to one of the animals to be examined. They shall carry out an operation or several operations on living or dead animals, including the necessary anaesthesiological activity. They shall furthermore prove their knowledge of surgery and anaesthesiology, as well as in particular of eye diseases, dentistry, hoof and claw diseases and hoof and horseshoe theory.

Section 51
Forensic veterinary medicine, law governing professional matters and professional conduct

In the examination subject of Forensic Veterinary Medicine, the Law Governing Professional Matters and Professional Conduct, students shall prove their knowledge of the law of obligations and of its impact on the purchase of animals and the pre-purchase veterinary examination of horses and knowledge regarding veterinary surgeons’ duties of care and the law on liability. Furthermore, they shall demonstrate their knowledge of the provisions of the law on liability and of criminal law that are important for exercising the profession of veterinary surgeon, as well as of the organisation and history of the veterinary profession and of the law governing professional matters and professional conduct regarding veterinaries, including the legal particularities of running a surgery.

Section 52
Special clinics for specific types of animal

(1) Solldunguents, ruminants, pigs, as well as small and domestic animals, shall be considered in the examinations in accordance with Sections 48, 49 and 50.

(2) At universities that have established special clinics for specific types of animal, the examinations may be distributed in accordance with the decision of the examination committee in line with the available clinics.

Section 53
Interdisciplinary Subject

In the interdisciplinary subject, on the basis of the knowledge acquired during the previous studies and those continued in parallel, students shall be familiarised with contents and tasks in the clinical treatment of domestic animals and livestock which are of practical relevance. Here, in particular contents of internal medicine, reproductive medicine, livestock management and surgery shall be portrayed with the participation of pathological anatomy, clinical pharmacology, animal feeding, animal breeding, animal husbandry, law governing professional matters of veterinaries, animal welfare and ethology, topographical anatomy, epidemiology, infectious diseases and control of animal epidemics in an interdisciplinary manner. Students should be afforded the opportunity to identify and process the development, diagnosis and therapy of diseases using concrete individual cases. Here, the contents of the teaching of clinical veterinary medicine and of other subjects are to be taken into consideration, particularly focussing on the impact of the application of ionising radiation or of radioactive substances,
the residue problems and environmental contaminants as well as food, meat and milk hygiene, in particular in the fields of risk evaluation, quality assurance and marketability of the food obtained from animals at all levels of food production at interdisciplinary level. The potential impact of the diseases of animals and the consequences of their therapy on human health and on the environment are also to be taken into consideration.

CHAPTER 3
THE PRACTICAL COMPONENT OF STUDIES

http://bundesrecht.juris.de/lappv/BJNR182700006.html
http://bundesrecht.juris.de/lappv/index.html - BJNR182700006BJNE005500000

Section 54
Training Places

The training in accordance with this chapter shall be completed on all weekdays in the respective facilities outside the lecture periods, and as a rule shall be performed on a full-time basis to a suitable degree in line with the workload. The time of the working off shall be determined by the university.

Sub-chapter 1
The training of control activities, methods and techniques for the field of food, including the examination of fresh meat

Section 55
Training Places, Duration

(1) Training in control activities, methods and techniques for the field of food, including the examination of fresh meat, shall last for 75 hours in at least two weeks, which are to be consecutive. It shall be effected with an authority which is competent for hygiene control in slaughterhouses or food establishments or in units responsible for monitoring the handling of food or food inspection, in facilities of the food industry which monitor the quality and unobjectionability of food, or in relevant university facilities.

(2) The practical training in examining animals for slaughter and meat at an authority responsible for examining animals for slaughter and meat in an abattoir shall last 100 hours within at least three weeks which are to be consecutive.

(3) Deployment in the context of training in accordance with (2) may only be effected in establishments which have approval and in which full-time official veterinary surgeons work who are responsible for the monitoring activity. If only cattle or only pigs are slaughtered in an establishment, at least 30 hours shall be served in an abattoir with the respectively other type of animal during the training time in accordance with (2).

Section 56
Contents of the Course

(1) During the training in accordance with Section 55 (1), the students shall familiarise themselves under the close supervision of full-time veterinary surgeons working at the facility responsible for the control activities, control of foodstuffs in the establishments or at the competent authority or other facility, or other qualified persons, with the assessment of the state of hygiene of the premises and the equipment, as well as the methods to control the hygiene status of the plants and shall practice evaluating the treatment and processing technology. The training shall also encompass the control activities, methods and techniques for the food domain. Further, in line with the spectrum of tasks of the authority or of another facility, students are to practice and be given extensive skills in the control of various foodstuffs, to independently carry out an evaluation of the marketability or the industrial hygiene of a control subject on a scientific basis. The points of view of food technology and quality assurance should also be taken into account here.

(2) During the training in accordance with Section 55 (2), under the close supervision of full-time veterinary surgeons working at the authority responsible for the examination of animals for slaughter and meat, students shall practice the examination and assessment of the animal for slaughter
and of the meat of various types of animal. Over and above this, students shall learn about treatment of the animal for slaughter in line with animal welfare.

(3) Students shall receive a certificate of the training in accordance with Annexes 6 and 7 in accordance with Section 55 (1) and (2).

Sub-Chapter 2
Training in the Therapeutic Practice of a Veterinary Surgeon or in an Animal Hospital

Section 57
Training Places, Duration

(1) The First Stage of training, which may be completed in the therapeutic practice of a veterinary surgeon or in an animal hospital or equally divided between the two facilities, shall last for 150 hours in at least four weeks, which are to be consecutive. It shall not be completed prior to passing the Preliminary Veterinary Examination.

(2) The Second Stage of training, which may be completed in the therapeutic practice of a veterinary surgeon or in an animal hospital or in a combination of no more than four such facilities, shall last for 700 hours notwithstanding Section 60, and shall be completed in at least 16 weeks, which are to be consecutive, in accordance with the Rules for Study of the University.

(3) The acquisition of the certificate of regular, successful attendance at the courses specified for the examination subject of Radiology shall be a prerequisite for the commencement of training in accordance with (2).

Section 58
Training in the Therapeutic Practice of a Veterinary Surgeon

(1) The training in the therapeutic practice of a veterinary surgeon may be completed only with veterinary surgeons who

1. have been independently running a practice for at least two years,

2. run an in-house veterinary pharmacy, and

3. have not been punished by a professional tribunal in the two years immediately preceding the training.

(2) During the practical training in accordance with Section 57, the students shall inform themselves under the supervision, guidance and responsibility of the owner of the practice in all areas of the veterinary activities concerned.

(3) The students shall receive certificates in accordance with Annexes 8 and 9 for the training.

Section 59
Training in an Animal Hospital

(1) Training shall be completed in a university’s hospitals. It may also be completed in other hospitals under veterinary management that have recognition as an animal hospital from the competent Chamber of Veterinary Surgeons.

(2) During the training in accordance with subsection (1) the students shall inform themselves under the supervision, guidance and responsibility of the hospital management in the field of the animal hospital concerned. In this connection they shall adhere to the theoretical-scientific treatment of the fields of knowledge affected by the practical training.

(3) The students shall receive certificates in accordance with Annex 10 for the training.
Sub-Chapter 3
Elective Placement

Section 60
Training Places, Duration

Part of the placement in accordance with Section 57 (2) of a minimum of 75 hours in two weeks and a maximum of 350 hours in eight weeks may be completed

1) in an institute of a university with a scientific-medical discipline,
2) in a Federal or Land research institute with a scientific-medical purpose,
3) in a veterinary examination institute,
4) in an office of the veterinary administration,
5) at a state or state-sponsored animal health service, in an animal health office or in an insemination station,
6) in the pharmaceutical industry in the development, manufacture and testing of drugs, in the food industry in the manufacture and testing of foods of animal origin or in the fodder industry in the manufacture and testing of mixed fodder, or
7) in scientifically managed zoological gardens.

The students shall receive certificates in accordance with Annex 11 for the training.

Sub-Chapter 4
Practical Training in the Public Veterinary Service

Section 61
Training Places, Duration

The practical training in the public veterinary service shall last for 75 hours in at least two weeks, which are to be consecutive. It shall take place in offices of the veterinary administration.

Section 62
Contents of the Course

(1) The practical training in the public veterinary service in accordance with Section 61 shall give the students the opportunity to deepen and broaden their knowledge and skills. The students shall comprehensively practise the tasks of the veterinary administration. Furthermore, they are to obtain knowledge of administrative and regulatory law, as well as of organisation and administration.

(2) The students shall receive a certificate in accordance with Annex 12 for the successfully completed training.

CHAPTER 4
Certification

Section 63
Application for Certification

(1) The application for certification as a veterinary surgeon shall be addressed to the competent authority in the Land in which the applicant has passed the Veterinary Examination. The following shall be enclosed with the application:

1. the identity card or with foreigners the passport of the applicant,
2. a declaration as to whether criminal court proceedings or investigations by the public prosecutor are pending over the applicant,
3. a medical certificate, which may not be more than one month old, according to which the applicant is not unsuitable for practising the profession for health reasons, and
4. a birth certificate or an excerpt from the family book of the parents, or in the case of married persons also the wedding certificate or an excerpt from the family book kept for the marriage, and
5. an official police clearance certificate, which may not have been issued more than one month prior to submission,
6. the certificate of the Veterinary Examination.

If an applicant who is not a national of one of the other Member States of the European Union or of another party to the Treaty on the European Economic Area or of a contracting party to which Germany and the European Community or Germany and the European Union have contractually granted such a legal right has been registered with the police in Germany for less than two years, he or she shall also enclose with his or her application a certificate in accordance with (3) sentence 1 or, if a certificate of this kind cannot be provided, a declaration that reveals whether he or she has a criminal record in the state where he or she was previously resident, whether criminal court proceedings or investigations by the public prosecutor are pending on him or her there or whether he or she has been prohibited from practising the veterinary profession there due to disciplinary or administrative measures.

(2) If certification is to be issued in accordance with Section 4 (1), (1a), (2) or (3) or in accordance with Section 15a of the Federal Veterinary Code, the application shall be addressed to the competent authority in the Land where the veterinary profession is to be practised. If the training has not taken place in accordance with the provisions of this Ordinance, the proof, in accordance with Section 4 (6) sentence 1 Nos. 2, 5 and 7 of the Federal Veterinary Code shall be submitted instead of the certificate in accordance with (1) sentence 6 no. 6. The competent authority shall confirm the receipt of the documents to the applicant within one month, and shall inform him or her which documents are missing. If the proof has not been issued in German, a certified translation thereof shall also be submitted. The competent authority may demand the submission of further proof, in particular proof of previous professional activity. In the case of applicants who submit proof in accordance with Section 4 (1a) sentence 1 of the Federal Veterinary Code as nationals of a Member State of the European Union or of another party to the Treaty on the European Economic Area or of a contracting party to which Germany and the European Community or Germany and the European Union have contractually granted such a legal right, further proof, particularly proof of professional activity, may be requested only if the Federal Veterinary Code so provides or this appears to be necessary for particular reasons. In cases falling under sentence 2, the proof demanded in (1) no. 4 cannot be demanded from the applicant unless proof of training issued in a third state has not yet been recognised in another Member State.

(3) Instead of the certificate cited in (1) sentence 2 no. 5, nationals of one of the other Member States of the European Union or of another party to the Treaty on the European Economic Area or of a contracting party to which Germany and the European Community or Germany and the European Union have contractually granted such a legal right may submit documents in accordance with Section 4 (6) no. 3 of the Federal Veterinary Code. If the applicant has already practised the veterinary profession in his or her Member State of origin, the authority responsible for issuing the certification may request information via the Federal Ministry of Food, Agriculture and Consumer Protection from the competent authority of the Member State of origin, for instance about any punishments or other professional or criminal measures imposed on the applicant due to serious and precisely determined unprofessional conduct or punishable actions concerning the practice of the profession in the Member State of origin. If in cases of sentence 1 or 2 the authority responsible for issuing the certification has knowledge of circumstances that have occurred outside the area of application of the Federal Veterinary Code and that could be important with respect to the requirements of Section 4 (1) no. 2 of the Federal Veterinary Code, it shall inform the competent office in the Member State of origin via the Federal Ministry of Food, Agriculture and Consumer Protection and notify it of the result and the conclusions that it draws from the certificates and proof issued by it. The certificates and notifications cited in sentences 1 to 3 shall be treated in confidence. They may be used as a basis for the assessment only if they have been issued no more than three months prior to submission.

(4) Instead of the medical certificate cited in (1) sentence 2 no. 3, nationals of the other Member States of the European Union or of another party to the Treaty on the European Economic Area or of a contracting party to which Germany and the European Community or Germany and the European Union have contractually granted such a legal right may submit an appropriate certificate from the competent authority in their Member State of origin. (3) sentences 4 and 5 shall apply mutatis mutandis.
(5) A decision shall be made on the application of a national of a Member State of the European Union or of another party to the Treaty on the European Economic Area or of a contracting party to which Germany and the European Community or Germany and the European Union have contractually granted such a legal right, at the latest three months after submission of the documents to be submitted by the applicant in accordance with (1) to (4). Insofar as it is a matter of recognition of proof of training in accordance with Section 4 (1a) sentence 3 or Section 4 (2) sentence 2 no. 3 of the Federal Veterinary Code, four instead of three months shall be available for cases in accordance with sentence 1.

Section 64
Certificate

The certificate shall be issued in accordance with the pattern of Annex 13. It shall be served on the applicant.

Chapter 5
Supplementary Provisions

Section 65
Crediting Study Periods and Examinations

(1) In the case of people who are Germans within the meaning of Article 116 of the Basic Law, nationals of one of the other Member States of the European Union or of another party to the Treaty on the European Economic Area or of a contracting party to which Germany and the European Community or Germany and the European Union have contractually granted such a legal right or stateless foreigners within the meaning of the Act on the Legal Status of Stateless Foreigners in Federal Territory, the following shall be fully or partially credited provided that they are equivalent:

1. periods spent on a course of related study at a university in Germany,
2. periods spent on a course of study of veterinary medicine or a related course of study at a university abroad.

(2) Subject to the proviso of (1), examinations that have been sat within the context of study in accordance with (1) Nos. 1 and 2 shall be recognised.

(3) The crediting cited in (1) and the recognition cited in (2) may take place for other people.

(4) Study periods shall be credited and examinations recognised upon application.

Section 66
Competent Authority

(1) The decisions in accordance with Section 65 shall be made by the competent authority in the Land in which the applicant in the area of application of this Ordinance
1. is registered or enrolled to study veterinary medicine, or
2. has submitted an application for registration or enrolment for studies in veterinary medicine.

In the case of sentence 1 no. 2, the application in accordance with Section 65 is to be submitted with the application for registration or enrolment; a decision in accordance with Section 65 shall be linked with the decision on registration or enrolment.

(2) The applicant shall receive a certificate about the decision made. The certificate shall be valid as proof within the meaning of Sections 20, 23 and 31 subject to the proviso of its contents.

Section 67
Exceptions

The university at which the student is enrolled may on request allow exceptions to the provisions

1. of Section 6,
2. of Section 20 (2) sentence 1 with regard to the prescribed period to take the examination,

3. of Section 23 (1) no. 1 that the applicant must have passed Preliminary Physics no more than one and a half academic years earlier for admission to the examination,

4. of Section 31 (2) no. 2 that the applicant must have studied veterinary medicine for at least three academic years after passing the Preliminary Veterinary Examination for admission to the examination,

5. of Section 58 (1) no. 1 with respect to the length of independent running of a practice insofar as this is required to avoid an unintended hardship and the goal of the training is not impaired. Exceptions granted in accordance with sentence 1 Nos. 2 to 5 shall also apply as proof for admission to the subsequent examination stages subject to the proviso of their contents.

Section 68
Transitional Provisions

(1) Students who have registered for the Preliminary Veterinary Examination prior to 1 October 2006 shall take the Preliminary Veterinary Examination in accordance with the Ordinance concerning the Certification of Veterinary Surgeons of 10 November 1999 (Federal Law Gazette Part I p. 2162), most recently amended by Article 3 of the Ordinance of 4 December 2002 (Federal Law Gazette Part I p. 4456). In the case of the further studies after passing the Preliminary Veterinary Examination the present Ordinance shall be applied.

(2) Students who have passed the Preliminary Veterinary Examination after 1 October 2006 but have not yet been admitted to the Veterinary Examination shall be trained and examined in accordance with this Ordinance.

(3) For students who have passed one stage of the Veterinary Examination before 1 October 2006 in accordance with the Ordinance concerning the Certification of Veterinary Surgeons of 10 November 1999 (Federal Law Gazette Part I p. 2162), most recently amended by Article 3 of the Ordinance of 4 December 2002 (Federal Law Gazette Part I p. 4456), the Ordinance concerning the Certification of Veterinary Surgeons of 10 November 1999 (Federal Law Gazette Part I p. 2162), most recently amended by Article 3 of the Ordinance of 4 December 2002 (Federal Law Gazette Part I p. 4456) shall also be applicable to the further studies.

(4) For students at universities which have not adapted their Code of Studies and Examination Regulations to this Ordinance by 1 October 2006, (1) to (3) shall apply on proviso that 1 October 2007 shall replace 1 October 2006.

Section 69
Entry into force, cessation of validity

(1) The present Ordinance shall enter into force on 1 October 2006.

http://bundesrecht.juris.de/tapp/index.html - BJNR182700006BJNE0007100000

Final formula

The Bundesrat has consented.
<table>
<thead>
<tr>
<th></th>
<th>Subject Area</th>
<th>Hours</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Physics, including fundamentals of Radiophysics</td>
<td>56</td>
<td>23</td>
<td>General Pathology, Special Pathological Anatomy and Histology including autopsies</td>
</tr>
<tr>
<td>2</td>
<td>Chemistry</td>
<td>126</td>
<td>24</td>
<td>Internal Medicine including Laboratory Diagnostics, Dietetics Reproductive Medicine including Obstetric and Udder Diseases Surgery and Anaesthesiology, Ophthalmic Diseases, Dentistry, Hoof and Claw Diseases Livestock Management and Ambulatory Care</td>
</tr>
<tr>
<td>3</td>
<td>Zoology</td>
<td>70</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Botany, including Nutritional Science, Toxicology and Herbalism</td>
<td>70</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Biometry</td>
<td>28</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Theory of the Profession (medical terminology, history of veterinary medicine, professional science)</td>
<td>42</td>
<td>25</td>
<td>Food Science, including Food Hygiene, Technology and Quality Assurance, Food Toxicology, Residue Evaluation, Food Law and Inspection of Foods; Milk Science including Technology and Quality Assurance; Microbiology of Milk and Milk Inspections; Meat and Poultry Hygiene including Technology and Quality Assurance</td>
</tr>
<tr>
<td>7</td>
<td>Anatomy</td>
<td>224</td>
<td>26</td>
<td>Clinical Training in subjects no. 18, 22 and 24</td>
</tr>
<tr>
<td>8</td>
<td>Histology and Embryology</td>
<td>98</td>
<td>27</td>
<td>Interdisciplinary subject</td>
</tr>
<tr>
<td>9</td>
<td>Agricultural Theory</td>
<td>28</td>
<td>28</td>
<td>Exercises in Agriculture, Animal Breeding and Animal Husbandry</td>
</tr>
<tr>
<td>10</td>
<td>Animal Husbandry and Animal Hygiene</td>
<td>56</td>
<td>29</td>
<td>Practical Training in a Veterinary Practice or a Veterinary Hospital</td>
</tr>
<tr>
<td>11</td>
<td>General Radiology and Clinical Radiology</td>
<td>42</td>
<td>30</td>
<td>Practical Training in Hygiene Control and Control of Foodstuffs and in the Inspection of</td>
</tr>
<tr>
<td></td>
<td>Course Description</td>
<td>Hours</td>
<td></td>
<td>Course Description</td>
</tr>
<tr>
<td>---</td>
<td>-----------------------------------------------------------------------------------</td>
<td>---------</td>
<td>---</td>
<td>--------------------------------------------------------</td>
</tr>
<tr>
<td>12</td>
<td>Physiology, Biochemistry</td>
<td>280</td>
<td></td>
<td>Animals for Slaughter and Meat</td>
</tr>
<tr>
<td>13</td>
<td>Animal Breeding and Genetics, including Breeding Theory and Livestock Judging</td>
<td>84</td>
<td>32</td>
<td>Practical Training in the Public Veterinary Service</td>
</tr>
<tr>
<td>14</td>
<td>Clinical Propedictics</td>
<td>98</td>
<td></td>
<td>Optional Courses that the student must also attend</td>
</tr>
<tr>
<td>15</td>
<td>Animal Welfare and ethology</td>
<td>84</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Laboratory Animal Science</td>
<td>14</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Animal Nutrition and Nutritional Science</td>
<td>98</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>Forensic Veterinary Medicine, Veterinary Professional Law</td>
<td>28</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Poultry Diseases</td>
<td>28</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>Pharmacology and Toxicology, including Clinical Pharmacology, Drug and Anaesthesia Law, Prescription and Drug Preparation Theory, Assessing Risks</td>
<td>126</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>Bacteriology, Mycology, Virology, Parasitology, Immunology, Control of Animal Epidemics, Epidemiology</td>
<td>266</td>
<td></td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>Diseases in Reptiles, Amphibians, Fish and Honey Bees</td>
<td>28</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*) The names of the courses and any merging of various subject areas into combined courses shall not be affected by this Annex.
Satzung zur Änderung der
Prüfungs- und Studienordnung der
Ludwig-Maximilians-Universität München
für den Studiengang Tiermedizin (2011)

Vom 30. März 2012

Auf Grund von Art. 13 Abs. 1 Satz 2 in Verbindung mit Art. 58 Abs. 1 Satz 1 und
Art. 61 Abs. 2 Satz 1 des Bayerischen Hochschulgesetzes (BayHSchG) erlässt die
Ludwig-Maximilians-Universität München folgende Satzung:
Inhaltsverzeichnis

I. Allgemeines
§ 1 Geltungsbereich
§ 2 Qualifikationsvoraussetzungen
§ 3 Anrechnung von Studienzeiten und Prüfungen
§ 4 Zentrale Studienberatung und Fachstudienberatung

II. Struktur und Ablauf des Studiums
§ 5 Studienbeginn und -struktur
§ 6 Unterrichtsveranstaltungen
§ 7 Praktischer Studienteil

III. Prüfungen
§ 8 Zulassung
§ 9 Tierärztliche Vorprüfung
§ 10 Tierärztliche Prüfung
§ 11 Teilprüfungen
§ 12 Prüfungen im Multiple-Choice-Verfahren und Prüfungen in elektronischer Form

IV. Schlussbestimmungen
§ 13 Inkrafttreten und Übergangsvorschriften

Anlage
ANNEX 3

I. Allgemeines

§ 1  Geltungsbereich


§ 2  Qualifikationsvoraussetzungen

(1) Voraussetzung für die Aufnahme in den Studiengang Tiermedizin ist der Nachweis der Hochschulreife. Derselbe Studiengang darf nicht endgültig nicht bestanden sein (Art. 46 Nr. 3 BayHSchG).

(2) Liegen die Voraussetzungen des Abs. 1 nicht vor, gilt die Teilnahme an Prüfungen als nicht erfolgt, es sei denn ein späterer Nachweis der Voraussetzungen des Abs. 1 wurde ausdrücklich zugelassen und erfolgte fristgemäß.

§ 3  Anrechnung von Studienzeiten und Prüfungen


§ 4  Zentrale Studienberatung und Fachstudienberatung


II. Struktur und Ablauf des Studiums

§ 5

Studienbeginn und -struktur

(1) Das Studium kann nur zum Wintersemester aufgenommen werden.

(2) Die tierärztliche Ausbildung umfasst

1. einen wissenschaftlich-theoretischen Studienteil (§ 6),
2. einen praktischen Studienteil (§ 7),
3. die Tierärztliche Vorprüfung und die Tierärztliche Prüfung (§§ 8 ff.).

§ 5

Unterrichtsveranstaltungen

(1) Der Inhalt des Studiums richtet sich nach den Bestimmungen der TAppV und umfasst die in Anlage 1 der TAppV aufgeführten Fachgebiete.

(2) In den Pflichtlehrveranstaltungen (Anlage 1 Nr. 1 bis 31 TAppV) werden die Grundkenntnisse und Fertigkeiten vermittelt, die in den von der TAppV vorgeschriebenen Prüfungen gefordert werden.

(3) Die Wahlpflichtveranstaltungen (Anlage 1 Nr. 32 TAppV) sollen eine Erweiterung und Vertiefung der Lehrinhalte bewirken und den Studierenden Gelegenheit geben, sich mit bestimmten Fragestellungen schwerpunktmäßig auseinanderzusetzen.

Welche Unterrichtsveranstaltungen als Wahlpflichtveranstaltungen besucht werden können sowie ob und ggf. welche Prüfungen bestanden werden müssen, wird von der Tierärztlichen Fakultät zu Beginn des Semesters ortsüblich bekannt gegeben.

(4) Die Ausbildung wird insbesondere im Rahmen von

1. Vorlesungen (V),
2. Seminaren (S),
3. klinischen Demonstrationen (D),
4. Übungen und Kursen (Ü), darunter Übungen am Tier und
5. angeleitetem Selbststudium mit festgelegten Unterrichtsmaterialien

durchgeführt. Möglich sind auch kombinierte Unterrichtsveranstaltungen (V/S/Ü), die sowohl als Vorlesung als auch als Seminar oder Übung angeboten werden.

Exkursionen können ebenfalls Teile von Unterrichtsveranstaltungen sein. Teile dieser vorgenannten Veranstaltungen können durch geeignete interaktive Lernprogramme ersetzt werden.

(5) Die Bedingungen zur regelmäßigen und erfolgreichen Teilnahme an einem Seminar oder einer Übung gemäß Spalte 7 der Anlage werden zu Beginn der Unterrichtsveranstaltung von der zuständigen Veranstaltungsleiterin oder vom zuständigen Veranstaltungsleiter verbindlich festgelegt und bekannt gegeben.
(6) Im achten und neunten Fachsemester werden die Studierenden in Gruppen unterrichtet (klinische Rotation). Sie erhalten dazu einen individuellen Stundenplan, der insgesamt 20 Wochen Unterrichtsveranstaltungen in sieben Blöcken und 23 Wochen vorlesungsfreie Zeit ausweist. Diese Unterrichtsveranstaltungen sind scheinpflichtig.

(7) Aus der Anlage ergeben sich:
1. die Bezeichnung der Unterrichtsveranstaltungen (Spalte 3),
2. die Kurzbezeichnung der Unterrichtsveranstaltungen (Spalte 2),
3. die Unterrichtsform der Unterrichtsveranstaltungen (Spalte 4),
4. deren Zuordnung zu einem oder mehreren Fachsemestern (Spalte 1),
5. die Semesterwochenstunden (Spalte 5),
6. der Angebotsturnus der Unterrichtsveranstaltungen (Spalte 6).

§ 7
Praktischer Studienteil

(1) Der Zeitpunkt der Praktika (§§ 1 Abs. 2 Nr. 2, 54 TAppV) wird wie folgt festgelegt:

1. 70 Stunden über Landwirtschaft, Tierzucht und Tierhaltung: frühestens nach dem Vorphysikum (§ 9 Abs. 1 Satz 1),

2. 150 Stunden in der kurativen Praxis einer Tierärztin, eines Tierarztes oder in einer unter tierärztlicher Leitung stehenden Tierklinik: frühestens nach dem Physikum (§ 9 Abs. 1 Satz 1),

3. 75 Stunden in der Hygienekontrolle und Lebensmittelüberwachung und -untersuchung: frühestens nach dem fünften Fachsemester,

4. 100 Stunden in der Schlachtier- und Fleischuntersuchung: diese sollen nach dem Pathologie/Lebensmittel/Tierschutz/AVO-Block der klinischen Rotation (vgl. Anlage Nrn. 8.1, 8.2, 8.4, 8.5, 8.7) abgeleistet werden,

5. 75 Stunden im öffentlichen Veterinärwesen: frühestens nach dem vierten Fachsemester,


(3) Zur Optimierung insbesondere der praktischen Ausbildung im Rahmen der extramuralen Praktika ist das kurative Praktikum gem. Abs. 1 Nr. 6 von den Studierenden zu evaluieren. Mithilfe der von der Tierärztlichen Fakultät der Ludwig-
Maximiliane-Universität München zur Verfügung gestellten Evaluierungsbögen sollen Kenntnisse über die Praktikumsstellen sowie den Ablauf und den Inhalt der Praktika gewonnen werden.

III. Prüfungen

§ 8
Zulassung


(2) Eine Zulassung zum fünften Fachsemester ist erst dann möglich, wenn mindestens drei der fünf Fachprüfungen im Rahmen des Physikums bestanden sind. Eine Zulassung zum sechsten Fachsemester ist erst dann möglich, wenn alle Prüfungen des Physikums bestanden sind. Eine Zulassung zum achten Fachsemester ist erst dann möglich, wenn die Prüfungen in mindestens sechs Prüfungsfächern gem. § 29 TAppV bestanden sind.

(3) Die Zulassung zur Tierärztlichen Prüfung erfolgt nach § 31 TAppV. Die erforderlichen Übungen und Seminare mit regelmäßiger und erfolgreicher Teilnahme sowie die erforderlichen Praktika sind in Spalte 7 der Anlage aufgeführt. In Fächern mit Teilprüfungen wird die Zulassung nach § 31 TAppV vor Antritt der letzten Teilprüfung geprüft.

§ 9
Tierärztliche Vorprüfung

(1) Die Tierärztliche Vorprüfung besteht aus zwei Teilen, dem naturwissenschaftlichen Abschnitt (Vorphysikum) und dem anatomisch-physiologischen Abschnitt (Physikum). Im Vorphysikum werden die Fächer nach § 19 Satz 1 Nr. 1 bis 4 TAppV geprüft. Im Physikum erfolgen die Prüfungen in den Fächern nach § 22 Satz 1 Nr. 1 bis 5 TAppV.

(2) Im Fach nach § 19 Satz 1 Nr. 1 TAppV erfolgt eine schriftliche Prüfung, im Fach nach § 19 Satz 1 Nr. 3 TAppV eine Prüfung im Multiple-Choice-Verfahren und in den Fächern nach § 19 Satz 1 Nr. 2 und 4 TAppV sowie § 22 Satz 1 Nr. 1 bis 5 TAppV eine mündliche Prüfung.

(3) Die Wiederholung einer bereits bestandenen Prüfung bzw. Teilprüfung zur Notenverbesserung ist ausgeschlossen.
§ 10
Tierärztliche Prüfung

(1) Die Tierärztliche Prüfung umfasst die in § 29 Nrn. 1 bis 20 TAppV aufgezählten Fächer.

(2) In den Fächern nach § 29 Nrn. 1, 3, 5, 6, 8, 13 und 20 TAppV erfolgt die Prüfung mündlich.

(3) In den Fächern nach § 29 Nrn. 9 und 12 TAppV erfolgt die Prüfung im Multiple-Choice-Verfahren.

(4) In den Fächern nach § 29 Nr. 2 und 7 TAppV erfolgt die Prüfung durch eine Kombination von Multiple-Choice-Verfahren und schriftlicher Prüfung.

(5) In den Fächern nach § 29 Nrn. 10 und 16 TAppV wird die Prüfung durch eine Teilprüfung im Multiple-Choice-Verfahren und eine schriftliche Teilprüfung abgelegt.

(6) In den Fächern nach § 29 Nrn. 4, 11, 15, 17 und 19 TAppV wird die Prüfung durch eine Teilprüfung im Multiple-Choice-Verfahren und eine mündliche Teilprüfung abgelegt.

(7) Im Fach nach § 29 Nr. 18 TAppV wird die Prüfung durch zwei Teilprüfungen im Multiple-Choice-Verfahren und eine mündliche Teilprüfung abgelegt.

(8) Im Fach nach § 29 Nr. 14 TAppV erfolgt die Prüfung durch eine Teilprüfung im Multiple-Choice-Verfahren und durch eine Teilprüfung als Kombination von Multiple-Choice-Verfahren und schriftlicher Prüfung.

(9) Eine mündliche Prüfung kann auch in Form einer sog. objektiv strukturierten klinischen Examiniereing (Objective Structured Clinical Examination – OSCE) abgehalten werden.

(10) Die Wiederholung einer bereits bestandenen Prüfung bzw. Teilprüfung zur Notenverbesserung ist ausgeschlossen.

§ 11
Teilprüfungen

(1) Jede Teilprüfung muss bestanden werden.

(3) Der zeitliche Umfang der Teilprüfungen wird zu Beginn der Lehrveranstaltung von der Veranstaltungsleiterin oder dem Veranstaltungsleiter bekannt gegeben.

§ 12
Prüfungen im Multiple-Choice-Verfahren und Prüfungen in elektronischer Form


(2) Prüfungen nach Abs. 1 Satz 1, die aus Einfachauswahlaufgaben (1 aus n) bestehen, gelten als bestanden, wenn

1. der Prüfling insgesamt mindestens 60 Prozent der gestellten Prüfungsaufgaben zutreffend beantwortet hat oder
2. der Prüfling insgesamt mindestens 50 Prozent der gestellten Prüfungsaufgaben zutreffend beantwortet hat und die Zahl der vom Prüfling zutreffend beantworteten Fragen um nicht mehr als 22 Prozent die durchschnittlichen Prüfungserfolge der Prüflinge unterschreitet, die erstmals an der entsprechenden Prüfung teilgenommen haben; diese Regelung findet nur Anwendung auf den ersten zu einer Lehrveranstaltung festgesetzten Prüfungstermin.

Wird Satz 1 Nr. 2 angewendet, ist die Studienkanin oder der Studiendekan zu unterrichten. Hat der Prüfling die für das Bestehen der Prüfung nach Satz 1 erforderliche Mindestzahl zutreffend beantworteter Prüfungsaufgaben erreicht, so lautet die Note

1. „sehr gut“, wenn er mindestens 75 Prozent,
2. „gut“, wenn er mindestens 50, aber weniger als 75 Prozent,
3. „befriedigend“, wenn er mindestens 25, aber weniger als 50 Prozent,
4. „ausreichend“, wenn er keine oder weniger als 25 Prozent
der darüber hinaus gestellten Prüfungsaufgaben zutreffend beantwortet hat.

(3) Für Prüfungen nach Abs. 1 Satz 1, die aus Mehrfachauswahlaufgaben (x aus n) bestehen, gilt Abs. 2 mit der Maßgabe, dass statt der Prüfungsaufgaben das Verhältnis der vom Prüfling erreichten Summe der Rohpunkte zur erreichbaren Höchstleistung maßgeblich ist. Je Mehrfachauswahlaufgabe wird dabei eine Bewertungszahl fest-

(4) Bei Prüfungen, die nur teilweise nach Abs. 1 Satz 1 abgenommen werden, gelten die Abs. 1 bis 3 nur für den jeweils betroffenen Teil.


(6) Ergebnisse von schriftlichen Prüfungen und Prüfungen nach Abs. 1 Satz 1 sind spätestens vier Wochen, nachdem die Prüfungen stattgefunden haben, bekannt zu geben.

IV. Schlussbestimmungen

§ 13
Inkrafttreten und Übergangsvorschriften


(3) Studierende, die nach dem 1. Oktober 2011 die Tierärztliche Vorprüfung bestanden haben, aber noch nicht zur Tierärztlichen Prüfung zugelassen sind, werden nach dieser Satzung ausgebildet und geprüft.

(4) Für Studierende, die vor dem 1. Oktober 2009 zur Tierärztlichen Prüfung zugelassen worden sind, ist die Prüfungs- und Studienordnung der Ludwig-Maximilians-


München, den 30. März 2012

Prof. Dr. Bernd Huber
Präsident

### Unterrichtsveranstaltungen

<table>
<thead>
<tr>
<th>Fachsemester</th>
<th>Kurzbezeichnung</th>
<th>Bezeichnung der Leitung oder der Prüfungsgemeinschaft</th>
<th>Unterrichtsform</th>
<th>SWS</th>
<th>angeboten im</th>
<th>Zulassungsverordnung</th>
<th>Prüfungsnachfragen (nach TA, LP)</th>
<th>Prüfungsf orm</th>
<th>Beurteilung bzw. bestanden</th>
<th>Notenzweck</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1.1</td>
<td>Anatomie I</td>
<td>V</td>
<td>2</td>
<td>W5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>1.2</td>
<td>Anatomie Übung I</td>
<td>Ü</td>
<td>2</td>
<td>W5</td>
<td>Testlalie</td>
<td>bestanden / nicht bestanden</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>1.3</td>
<td>Botanik</td>
<td>V</td>
<td>4</td>
<td>W5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>1.4</td>
<td>Chemie I</td>
<td>V</td>
<td>3</td>
<td>W5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>1.5</td>
<td>Chemie Übung I</td>
<td>Ü</td>
<td>1</td>
<td>W5</td>
<td>Klausuren</td>
<td>bestanden / nicht bestanden</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>1.6</td>
<td>Ethologie I</td>
<td>V</td>
<td>1</td>
<td>W5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>1.7</td>
<td>Histologie I</td>
<td>V</td>
<td>2</td>
<td>W5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>1.8</td>
<td>Physik</td>
<td>V</td>
<td>4</td>
<td>W5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>1.9</td>
<td>Terminologie</td>
<td>V</td>
<td>1</td>
<td>W5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>1.10</td>
<td>Terminologie Übung</td>
<td>Ü</td>
<td>1</td>
<td>W5</td>
<td>Klausuren</td>
<td>bestanden / nicht bestanden</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>1.11</td>
<td>Tierhaltung I</td>
<td>V</td>
<td>1</td>
<td>W5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>1.12</td>
<td>Tierschutz I</td>
<td>V</td>
<td>1</td>
<td>W5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>1.13</td>
<td>Zoologie I</td>
<td>V</td>
<td>3</td>
<td>W5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>1.14</td>
<td>Botanik der Faulen, giftigen und giftigen Pflanzen</td>
<td>keine</td>
<td>VP</td>
<td>Mündliche Prüfung</td>
<td>Benotung 100%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>1.15</td>
<td>Physik einschließlich der Grundlagen des physikalischen Strahlenchutzes</td>
<td>keine</td>
<td>VP</td>
<td>Schriftliche Prüfung</td>
<td>Benotung 100%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Prüfungen und Erfolgskontrollen

<table>
<thead>
<tr>
<th>Fachsemester</th>
<th>Kurzbezeichnung</th>
<th>Bezeichnung der Leitung oder der Prüfungsgemeinschaft</th>
<th>Unterrichtsform</th>
<th>SWS</th>
<th>angeboten im</th>
<th>Zulassungsverordnung</th>
<th>Prüfungsnachfragen (nach TA, LP)</th>
<th>Prüfungsf orm</th>
<th>Beurteilung bzw. bestanden</th>
<th>Notenzweck</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>2.1</td>
<td>Anatomie II</td>
<td>V</td>
<td>2</td>
<td>SS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>2.2</td>
<td>Anatomie Übung II</td>
<td>Ü</td>
<td>2</td>
<td>SS</td>
<td>Testlalie</td>
<td>bestanden / nicht bestanden</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>2.3</td>
<td>Chemie II</td>
<td>V</td>
<td>3</td>
<td>SS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>2.4</td>
<td>Chemie Übung II</td>
<td>Ü</td>
<td>1</td>
<td>SS</td>
<td>Klausuren</td>
<td>bestanden / nicht bestanden</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>2.5</td>
<td>Embryologie</td>
<td>V</td>
<td>1</td>
<td>SS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>2.6</td>
<td>Ethologie II</td>
<td>V</td>
<td>1</td>
<td>SS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>2.7</td>
<td>Genetik</td>
<td>V</td>
<td>2</td>
<td>SS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>2.8</td>
<td>Geschichte der Tiermedizin</td>
<td>V</td>
<td>1</td>
<td>SS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>2.9</td>
<td>Laboratorium</td>
<td>V</td>
<td>1</td>
<td>SS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>2.10</td>
<td>Landwirtschaftslehre</td>
<td>V</td>
<td>2</td>
<td>SS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>2.11</td>
<td>Physiologie I</td>
<td>V</td>
<td>2</td>
<td>SS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>2.12</td>
<td>Radiologie I</td>
<td>V</td>
<td>1</td>
<td>SS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>2.13</td>
<td>Tierhaltung I</td>
<td>V</td>
<td>1</td>
<td>SS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>2.14</td>
<td>Tierschutz I</td>
<td>V</td>
<td>1</td>
<td>SS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>2.15</td>
<td>Zoologie II</td>
<td>V</td>
<td>2</td>
<td>SS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>3.1</td>
<td>Anatomie III</td>
<td>V</td>
<td>3</td>
<td>W5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>3.2</td>
<td>Anatomie Übung III</td>
<td>Ü</td>
<td>3</td>
<td>W5</td>
<td>Testlalie</td>
<td>bestanden / nicht bestanden</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>3.3</td>
<td>Biologie I</td>
<td>V</td>
<td>2</td>
<td>W5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>3.4</td>
<td>Embryologie</td>
<td>V</td>
<td>1</td>
<td>W5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>3.5</td>
<td>Physiologie</td>
<td>V</td>
<td>2</td>
<td>W5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>3.6</td>
<td>Physiologie, Biologie Übungen I</td>
<td>Ü</td>
<td>5</td>
<td>W5</td>
<td>Testlalie</td>
<td>bestanden / nicht bestanden</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>3.7</td>
<td>Radiologie II</td>
<td>V</td>
<td>1</td>
<td>W5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>3.8</td>
<td>Tierschutz III</td>
<td>V</td>
<td>1</td>
<td>W5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>3.9</td>
<td>Tierzucht</td>
<td>V</td>
<td>3</td>
<td>W5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fachveranstaltung</td>
<td>Kurzbeschreibung</td>
<td>Bezeichnung der Veranstaltung oder der Prüfungsteilnahme</td>
<td>Anzahl der relativen Prüfungseinheiten</td>
<td>Unterrichtsform</td>
<td>Semester</td>
<td>Prüfungstage</td>
<td>Prüfungszeit</td>
<td>Prüfungstyp</td>
<td>Prüfungliche Bewertung</td>
<td>Beurteilung, bestanden / nicht bestanden</td>
</tr>
<tr>
<td>------------------</td>
<td>------------------</td>
<td>--------------------------------------------------------</td>
<td>--------------------------------------</td>
<td>---------------</td>
<td>-----------</td>
<td>-------------</td>
<td>------------</td>
<td>-------------</td>
<td>------------------------</td>
<td>-------------------------------------------</td>
</tr>
<tr>
<td>3</td>
<td>Tierzucht Übung</td>
<td>Ö 1 WS</td>
<td>Testelet</td>
<td>bestanden</td>
<td>nicht bestanden</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Allgemeine Infektionsmedizin (Allgemeine Bakteriologie und Virologie)</td>
<td>V 1 SS</td>
<td>Testelet</td>
<td>bestanden</td>
<td>nicht bestanden</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Allgemeine Infektionsmedizin (Allgemeine Virologie)</td>
<td>V 1 SS</td>
<td>Testelet</td>
<td>bestanden</td>
<td>nicht bestanden</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Anatomie IV</td>
<td>O 1 SS</td>
<td>Testelet</td>
<td>bestanden</td>
<td>nicht bestanden</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Anatomie Übung IV</td>
<td>Ü 1 SS</td>
<td>Testelet</td>
<td>bestanden</td>
<td>nicht bestanden</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Biochemie II</td>
<td>V 2 SS</td>
<td>Testelet</td>
<td>bestanden</td>
<td>nicht bestanden</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Grundlagen Lebensmittel- und Fleischhygiene</td>
<td>V 2 SS</td>
<td>Testelet</td>
<td>bestanden</td>
<td>nicht bestanden</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Histologie II</td>
<td>V 1 SS</td>
<td>Testelet</td>
<td>bestanden</td>
<td>nicht bestanden</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Histologie Übung</td>
<td>Ú 2 SS</td>
<td>Testelet</td>
<td>bestanden</td>
<td>nicht bestanden</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Krankheiten der Reptilien, Amphibien, Fische sowie der Blumen</td>
<td>V 2 SS</td>
<td>Testelet</td>
<td>bestanden</td>
<td>nicht bestanden</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Parasitologie I</td>
<td>V 2 SS</td>
<td>Testelet</td>
<td>bestanden</td>
<td>nicht bestanden</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Pathophysiologie</td>
<td>V 1 SS</td>
<td>Testelet</td>
<td>bestanden</td>
<td>nicht bestanden</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Physiologie III</td>
<td>V 2 SS</td>
<td>Testelet</td>
<td>bestanden</td>
<td>nicht bestanden</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Physiologie, Biochemie Übungen II</td>
<td>Ú 5 SS</td>
<td>Testelet</td>
<td>bestanden</td>
<td>nicht bestanden</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Propädeutik I</td>
<td>V 3 SS</td>
<td>Testelet</td>
<td>bestanden</td>
<td>nicht bestanden</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fachveranstaltung</th>
<th>Kurzbeschreibung</th>
<th>Bezeichnung der Veranstaltung oder der Prüfungsteilnahme</th>
<th>Anzahl der relativen Prüfungseinheiten</th>
<th>Unterrichtsform</th>
<th>Semester</th>
<th>Prüfungstage</th>
<th>Prüfungstyp</th>
<th>Prüfungliche Bewertung</th>
<th>Beurteilung, bestanden / nicht bestanden</th>
<th>Notenwertung</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Anatomie</td>
<td>regelmäßig und erfolg-</td>
<td>regelmäßig und erfolg-</td>
<td>Mündliche Prüfung</td>
<td>bestanden</td>
<td>100%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Histologie und Embryologie</td>
<td>regelmäßig und erfolg-</td>
<td>regelmäßig und erfolg-</td>
<td>Mündliche Prüfung</td>
<td>bestanden</td>
<td>100%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Biochemie</td>
<td>regelmäßig und erfolg-</td>
<td>regelmäßig und erfolg-</td>
<td>Mündliche Prüfung</td>
<td>bestanden</td>
<td>100%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Physiologie</td>
<td>regelmäßig und erfolg-</td>
<td>regelmäßig und erfolg-</td>
<td>Mündliche Prüfung</td>
<td>bestanden</td>
<td>100%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Tierzucht und Genetik einschließlich Tierbelehrung</td>
<td>regelmäßig und erfolg-</td>
<td>regelmäßig und erfolg-</td>
<td>Mündliche Prüfung</td>
<td>bestanden</td>
<td>100%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Allgemeine Chirurgie</td>
<td>V 2 WS</td>
<td>Klausur</td>
<td>bestanden</td>
<td>nicht bestanden</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Allgemeine Lebensmittelkunde</td>
<td>V 1 WS</td>
<td>Klausur</td>
<td>bestanden</td>
<td>nicht bestanden</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Infektionsmedizin (Allgemeine Bakteriologie, Allgemeine Virologie)</td>
<td>V 2 WS</td>
<td>Klausur</td>
<td>bestanden</td>
<td>nicht bestanden</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prüfungseinheit</td>
<td>Fächerbereich</td>
<td>Bezeichnung der Unterrichtsanstalt oder der Prüfungsträger</td>
<td>Unterrichtstematik</td>
<td>Unterrichtsleistung</td>
<td>Zulassungs- verfahren</td>
<td>Prüfung- form (nach TaPpl)²</td>
<td>Prüfungsf orm</td>
<td>Benotung (bzw. bestanden / nicht bestanden)</td>
<td>Notenwert (3)</td>
<td></td>
</tr>
<tr>
<td>----------------</td>
<td>----------------</td>
<td>-------------------------------------------------</td>
<td>------------------</td>
<td>-----------------</td>
<td>----------------</td>
<td>-----------------------------</td>
<td>----------------</td>
<td>--------------------------------------</td>
<td>--------------</td>
<td></td>
</tr>
<tr>
<td>5.12</td>
<td>Innere Medizin Paff i</td>
<td>V 1 WS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.13</td>
<td>Parasitologie II</td>
<td>V 2 WS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.14</td>
<td>Pathologie I (Allgemeine Pathologie Teil 1)</td>
<td>S 2 WS</td>
<td></td>
<td></td>
<td>Testat</td>
<td></td>
<td></td>
<td>bestanden / nicht bestanden</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.15</td>
<td>Pharmakologie und Toxikologie I</td>
<td>V 3 WS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.16</td>
<td>Propädeutik II</td>
<td>V 2 WS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.17</td>
<td>Reproduktion I</td>
<td>V 3 WS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.18</td>
<td>Tiefhygiene I</td>
<td>V 1 WS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.19</td>
<td>Futtermittelkunde II</td>
<td>Ü 2 SS</td>
<td></td>
<td></td>
<td>Testat</td>
<td></td>
<td></td>
<td>bestanden / nicht bestanden</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.2</td>
<td>Gastroenterologie</td>
<td>V 2 SS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.3</td>
<td>Innere Medizin Klämer</td>
<td>V 4 SS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.4</td>
<td>Innere Medizin Paff II</td>
<td>V 1 SS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.5</td>
<td>Milch</td>
<td>V 1 SS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.6</td>
<td>Pathologie II (Allgemeine Pathologie Teil 2)</td>
<td>S 2 SS</td>
<td></td>
<td></td>
<td>Testat</td>
<td></td>
<td></td>
<td>bestanden / nicht bestanden</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.7</td>
<td>Pharmakologie und Toxikologie II</td>
<td>V 4 SS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.8</td>
<td>Propädeutik III</td>
<td>Ü 2 SS</td>
<td></td>
<td></td>
<td>Testat</td>
<td></td>
<td></td>
<td>bestanden / nicht bestanden</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.9</td>
<td>Radiologie III</td>
<td>V 1 SS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.10</td>
<td>Reproduktion II</td>
<td>V 2 SS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.11</td>
<td>Infekionsmedizin (Spezielle Bakteriologie)</td>
<td>V 2 SS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.12</td>
<td>Spezielle Chirurgie Kliniker I</td>
<td>V 1 SS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Prüfungseinheit</th>
<th>Fächerbereich</th>
<th>Bezeichnung der Unterrichtsanstalt oder der Prüfungsträger</th>
<th>Unterrichtstematik</th>
<th>Unterrichtsleistung</th>
<th>Zulassungs- verfahren</th>
<th>Prüfung- form (nach TaPpl)²</th>
<th>Prüfungsf orm</th>
<th>Benotung (bzw. bestanden / nicht bestanden)</th>
<th>Notenwert (3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.13</td>
<td>Spezielle Chirurgie Paff i</td>
<td>V 1 SS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.14</td>
<td>Allgemeine Fleischhygiene</td>
<td>V 2 SS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.15</td>
<td>Spezielle Lebensmittelsanierung</td>
<td>V 2 SS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.16</td>
<td>Infekionsmedizin (Spezielle Virologie)</td>
<td>V 2 SS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.17</td>
<td>Tiefhygiene II</td>
<td>V 1 SS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.18</td>
<td>Klinische Propädeutik Teilstudium</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.19</td>
<td>Radiologie</td>
<td>V 1 SS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.20</td>
<td>Pharmakologie und Toxikologie</td>
<td>V 2 SS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.21</td>
<td>Innere Medizin Teilstudium</td>
<td>V 1 SS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.22</td>
<td>Propädeutik Teilstudium</td>
<td>V 2 SS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.23</td>
<td>Tiefhygiene</td>
<td>V 1 SS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.24</td>
<td>Gastroenterologie Teilstudium</td>
<td>V 1 SS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.25</td>
<td>Infekionsmedizin (Spezielle Bakteriologie)</td>
<td>V 2 SS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.26</td>
<td>Lebensmittelsanierung, einschließlich Lebensmittelsanierung Teilstudium</td>
<td>V 1 SS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.1</td>
<td>Aznornitüverordnung- und Anästhesiologie</td>
<td>V 1 WS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.2</td>
<td>Infekionsmedizin (Bakteriologie / Virologie Kurs)</td>
<td>Ü 2 WS</td>
<td></td>
<td></td>
<td>Testat</td>
<td></td>
<td></td>
<td>bestanden / nicht bestanden</td>
<td></td>
</tr>
<tr>
<td>7.3</td>
<td>Bestandshaltung II</td>
<td>V 2 WS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.4</td>
<td>Biostatistik (Scheimpflüchficht nach § 31 TaPpl)</td>
<td>V 2 WS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.5</td>
<td>Chirurgie Wiederholung</td>
<td>V 1 WS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fachsemester</td>
<td>Kurzbezeichnung</td>
<td>Unterrichtsveranstaltungen</td>
<td>Prüfungen und Erfolgskontrollen</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>--------------</td>
<td>-----------------</td>
<td>---------------------------</td>
<td>--------------------------------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
|               | Anzahl Stunde(n) | Unterrichtstem 1 | Prognose
| 7             | 7.6 Innere Medizin Wiedenräumer | V 1 WS       | Testate, bestanden/ nicht bestanden |
|               |                 | V 1 WS       | Testate, bestanden/ nicht bestanden |
| 7             | 7.7 Medizin Kurs | S/Q 2 WS     | Testate, bestanden/ nicht bestanden |
| 7             | 7.8 Parasitologie Kurs | 0 1 WS       | Testate, bestanden/ nicht bestanden |
| 7             | 7.9 Pathologie III (Spezielle Pathologie Teil 1) | V 3 WS       | Testate, bestanden/ nicht bestanden |
| 7             | 7.10 Reproduktion | V 3 WS       | Testate, bestanden/ nicht bestanden |
| 7             | 7.11 Schweißkrankheiten | V 1 WS       | Testate, bestanden/ nicht bestanden |
| 7             | 7.12 Spezielle Anaesthesiologie Kliniker | V 1 WS       | Testate, bestanden/ nicht bestanden |
| 7             | 7.13 Spezielle Chirurgie Kliniker II | V 1 WS       | Testate, bestanden/ nicht bestanden |
| 7             | 7.14 Spezielle Chirurgie Pfud II | V 1 WS       | Testate, bestanden/ nicht bestanden |
| 7             | 7.15 Spezielle Pneumologie | V 1 WS       | Testate, bestanden/ nicht bestanden |
| 7             | 7.16 Tierärztliche Untersuchung | V 1 WS       | Testate, bestanden/ nicht bestanden |
| 7             | 7.17 Tierproduktion | V 1 WS       | Testate, bestanden/ nicht bestanden |
| 7             | 7.18 Tierärztliche Untersuchung III | 0 2 WS       | Testate, bestanden/ nicht bestanden |
| 7             | 7.19 Infektionsmedizin (Staatl. Tierseuchenbekämpfung, Bakteriologie, Virologie) | V 3 WS       | Testate, bestanden/ nicht bestanden |
| 7             | 7.20 Tierarzitischer Veterinärmedizin, Berufs- und Standessicherheit | V 2 WS       | Testate, bestanden/ nicht bestanden |

**Unterrichtsveranstaltungen**

<table>
<thead>
<tr>
<th>Fachsemester</th>
<th>Kurzbezeichnung</th>
<th>Unterrichtsveranstaltungen</th>
<th>Prüfungen und Erfolgskontrollen</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>7.17 Medizin Teilprüfung I</td>
<td>regelmäßig und erfolgsmäßige Teilnahme an 7.2</td>
<td>TP, Mündliche Prüfung, Bewertung 100%</td>
</tr>
<tr>
<td>7</td>
<td>7.18 Parasitologie</td>
<td>regelmäßig und erfolgsmäßige Teilnahme an 7.6</td>
<td>TP, Kombination von Multiple-Choice und schriftlicher Prüfung, Bewertung 100%</td>
</tr>
<tr>
<td>7</td>
<td>7.19 Reproduktionsmedizin Teilprüfung I</td>
<td>keine</td>
<td>TP, Multiple-Choice, Bewertung 50%</td>
</tr>
<tr>
<td>7</td>
<td>7.20 Innere Medizin Teilprüfung II</td>
<td>keine</td>
<td>TP, Multiple-Choice, Bewertung 25%</td>
</tr>
<tr>
<td>7</td>
<td>7.21 Tierärztliche Untersuchung</td>
<td>regelmäßig und erfolgsmäßige Teilnahme an 7.18</td>
<td>TP, Mündliche Prüfung, Bewertung 100%</td>
</tr>
<tr>
<td>7</td>
<td>7.22 Tierärztliche Untersuchung</td>
<td>regelmäßig und erfolgsmäßige Teilnahme an 7.2</td>
<td>TP, Mündliche Prüfung, Bewertung 100%</td>
</tr>
</tbody>
</table>

**Unterrichtsveranstaltungen**

<table>
<thead>
<tr>
<th>Fachsemester</th>
<th>Kurzbezeichnung</th>
<th>Unterrichtsveranstaltungen</th>
<th>Prüfungen und Erfolgskontrollen</th>
</tr>
</thead>
<tbody>
<tr>
<td>8/9</td>
<td>8.1 Arzneimittelverordnungs- und Anfeuchtungslehre</td>
<td>S 1 SS/ WS</td>
<td>Testate, bestanden/ nicht bestanden</td>
</tr>
<tr>
<td>8/9</td>
<td>8.2 Tierärztliche Untersuchung</td>
<td>O 2 SS/ WS</td>
<td>Testate, bestanden/ nicht bestanden</td>
</tr>
<tr>
<td>8/9</td>
<td>8.3 Klinische Ausbildung</td>
<td>O 2 SS/ WS</td>
<td>Testate, bestanden/ nicht bestanden</td>
</tr>
<tr>
<td>8/9</td>
<td>8.4 Lebensmittelmäßigkeit</td>
<td>O 3 SS/ WS</td>
<td>Testate, bestanden/ nicht bestanden</td>
</tr>
<tr>
<td>8/9</td>
<td>8.5 Pathologie IV (Spezielle Pathologie Teil 2)</td>
<td>U 6 SS/ WS</td>
<td>Testate, bestanden/ nicht bestanden</td>
</tr>
<tr>
<td>8/9</td>
<td>8.6 Querschnittsonographie</td>
<td>O 14 SS/ WS</td>
<td>Testate, bestanden/ nicht bestanden</td>
</tr>
<tr>
<td>8/9</td>
<td>8.7 Tierärztliches Werkzeug</td>
<td>S 1 SS/ WS</td>
<td>Testate, bestanden/ nicht bestanden</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>1 bis 9</td>
<td>WAHLKURS (1)</td>
<td>8.8</td>
<td>V</td>
</tr>
<tr>
<td>11</td>
<td>Anatomie- und Biotopologie</td>
<td>Vorlesung II</td>
<td>regelmäßige und erfolgreiche Teilnahme</td>
</tr>
<tr>
<td>11</td>
<td>Allgemeine Pathologie und Spezielle pathologische Anatomie und Histologie</td>
<td>Vorlesung II</td>
<td>regelmäßige und erfolgreiche Teilnahme</td>
</tr>
<tr>
<td>11</td>
<td>Chirurgie und Anästhesiologie Teilprüfung I</td>
<td>keine</td>
<td>TP</td>
</tr>
<tr>
<td>11</td>
<td>Chirurgie und Anästhesiologie Teilprüfung II</td>
<td>regelmäßige und erfolgreiche Teilnahme</td>
<td>TP</td>
</tr>
<tr>
<td>11</td>
<td>Fleischhygiene Teilprüfung</td>
<td>regelmäßige und erfolgreiche Teilnahme</td>
<td>TP</td>
</tr>
<tr>
<td>11</td>
<td>Goßwellenzerleistungen</td>
<td>keine</td>
<td>TP</td>
</tr>
<tr>
<td>11</td>
<td>Gerichtlicher Verwaltungsmedizin, Berufs- und Standesrecht</td>
<td>keine</td>
<td>TP</td>
</tr>
<tr>
<td>11</td>
<td>Innere Medizin Teilprüfung III</td>
<td>regelmäßige und erfolgreiche Teilnahme</td>
<td>TP</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>Lebensmittelsicherheit</td>
<td>Vorlesung II</td>
<td>regelmäßige und erfolgreiche Teilnahme</td>
<td>TP</td>
<td>Kombination von Multiple-Choice und schriftlicher Prüfung</td>
<td>Bewertung</td>
<td>90%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Milchprüfung II</td>
<td>Vorlesung II</td>
<td>regelmäßige und erfolgreiche Teilnahme</td>
<td>TP</td>
<td>Schriftliche Prüfung</td>
<td>Bewertung</td>
<td>50%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Reproduktionstechniken Teilprüfung II</td>
<td>Vorlesung II</td>
<td>regelmäßige und erfolgreiche Teilnahme</td>
<td>TP</td>
<td>Schriftliche Prüfung</td>
<td>Bewertung</td>
<td>50%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Tierhygiene und Euthanologie</td>
<td>Vorlesung II</td>
<td>regelmäßige und erfolgreiche Teilnahme</td>
<td>TP</td>
<td>Mündliche Prüfung</td>
<td>Bewertung</td>
<td>100%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1 V = Vorlesung, S = Seminar, Ü = Übung, D = Diskussion; 2 TP = Theoretical Exam; TP = Practical Exam; TP = Theoretical Exam. Die von der TAppV vorgeschriebenen Prüfungen sind in Klammern hinterlegt.