Freie Universität Berlin

Faculty of Veterinary Medicine
Freie Universität Berlin

Appendices of the **Self Evaluation Report** for the European Association of Establishments for Veterinary Education

CONTENTS

A. Current academic staff, qualifications, their FTE, teaching responsibilities and departmental affiliations

All academic staff included in this table is financed by budgetary resources and responsible for teaching and research tasks.

Scientific Institutions	Name	Position	Title	Veterinarian	Budget financed	FTE	Temporary	Teaching responsibility in hrs / week
1	BAHRAMSOLTANI, MAHTAB	Professor	Dr. med. vet.	1	1	100		9
1	DIETZE, KATHRIN	Academic Staff, temporary	Dr. med. vet.	1	1	100	1	4
1	HOPPERDIETZEL, CARSTEN	Academic Staff, temporary	Dr. med. vet.	1	1	100	1	4
1	HÜNIGEN, HANA	Academic Staff, permanent	Dr. med. vet.	1	1	100		12
1	KÄSSMEYER, SABINE	Academic Staff, permanent	Dr. med. vet.	1	1	100		7
1	PLENDL, JOHANNA	Professor	Dr. med. vet.	1	1	100		9
1	RIEGER, JULIANE	Academic Staff, temporary	Ph.D.	1	1	100	1	4
2	ASCHENBACH, JÖRG	Professor	Dr. med. vet.	1	1	100		9
2	STUMPFF, FRIEDERIKE	Academic Staff, permanent	PD Dr.rer.nat.		1	100		8
2	SPONDER, GERHARD	Academic Staff, temporary	Dr. med. vet.	1	1	100	1	4
2	ABU AMASHEH, SALAH	Professor	Dr.rer.nat.		1	100		9
2	ZAKRZEWSKI, SILKE	Academic Staff, temporary	Dr. med. vet.	1	1	100	**1**	4
3	EINSPANIER, RALF	Professor	Prof. Dr. Dr.		1	100		9
3	SHARBATI, SOROUSH	Academic Staff, permanent	PD Dr.rer.nat.		1	100		8
3	BADEWIEN-RENTZSCH, BRIT	Academic Staff, temporary	Dr.rer.nat.		1	100	1	4
3	GABLER, CHRISTOPH	Academic Staff, permanent	PD Dr.rer.nat		1	100		7
3	ZUR BRÜGGE, JENNIFER	Academic Staff, temporary	Dr. med. vet.	1	1	100	1	4
4	MÄNNER, KLAUS	Academic Staff, permanent	Dr. med. vet.	1	1	100		8
4	ZENTEK, JÜRGEN	Professor	Dr. med. vet.	1	1	100		4,5
4	KRÖGER, SUSAN	Academic Staff, temporary	Dr. med. vet.	1	1	100	1	4
4	VAHJEN, WILFRIED	Academic Staff, permanent	Dr.rer.nat.		1	100		4
4	PASSLACK, NADINE	Academic Staff, temporary	Dr. med. vet.	1	1	100	1	4
4	PIEPER, ROBERT	Academic Staff, temporary	Dr. agr.		1	100	1	4
4	RÖHE, ILEN	Academic Staff, temporary	Dr. med. vet.	1	1	100	1	4
5	OSTERRIEDER, NIKOLAUS	Professor	Dr. med. vet.	1	1	100		9
5	VEIT, MICHAEL	Academic Staff, permanent	PD Dr.rer.nat.		1	100		8
5	DAMIANI ARMANDO, MARIO	Academic Staff, temporary	Ph.D.	1	1	100	1	4
5	BORCHERS, KERSTIN	Academic Staff, permanent	PD Dr. rer. nat.		1	100		3
5	GRECO, ANNACHIARA	Academic Staff, temporary	Dr.rer.nat.		1	100	1	3
5	BERGMANN, TOBIAS	Academic Staff, temporary	Dr.rer.nat.		1	50	1	2
5	WALLASCHEK, NINA	Academic Staff, temporary			1	100	1	2
5	KAUFER, BENEDIKT	Professor	Juniorprof.		1	100	1	6
6	HARTMANN, SUSANNE	Professor	Dr. rer. nat.		1	100		9
6	SCHLOSSER, JOSEPHINE	Academic Staff, temporary	Dr. med. vet.	1	1	100	1	4
6	BALSTER, KATJA	Academic Staff, temporary			1	50	1	2
6	STRANDMARK, JULIA	Academic Staff, temporary			1	50	1	2
6	RAUSCH, SEBASTIAN	Academic Staff, temporary	Dr. rer. nat.		1	100	1	4
6	EBNER, FRIEDERIKE	Academic Staff, temporary	Dr. rer. nat.		1	100	1	4
7	LÜBKE BECKER, ANTINA	Academic Staff, permanent	Dr. med. vet.	1	1	100		8
7	WALTHER, BIRGIT	Academic Staff, temporary	Dr. med. vet.	1	1	100	1	4
7	TEDIN, KARSTEN	Academic Staff, permanent	Ph.D.		1	100		4

Scientific Institutions	Name	Position	Title	Veterinarian	Budget financed	FTE	Temporary	Teaching responsibility in hrs / week
7	EICHHORN, INGA	Academic Staff, temporary	Dr. rer. nat.		1	100	1	4
7	CIESINSKI, LISA	Academic Staff, temporary		1	1	50	1	2
7	MüLLER, STEFANIE	Academic Staff, temporary		1	1	50	1	2
8	KLEER JOSEF	Academic Staff, permanent	Dr. med. vet.	1	1	100		8
8	HOLDHAUS, WALENTINA	Academic Staff, permanent	Dr. med. vet.	1	1	50		4
8	HÜHN-LINDENBEIN, STEPHAN GEORG	Academic Staff, temporary	Dr. rer. nat.		1	100	1	4
8	HERRFURTH, DOREEN	Academic Staff, temporary	Dr. med. vet.	1	1	50	1	2
8	ALTER, THOMAS	Professor	Dr. med. vet.	1	1	100		9
8	TIPPELSKIRCH, PHILINE	Academic Staff, temporary		1	1	50	1	2
8	RIEDEL, CAROLIN	Academic Staff, temporary	Dr. med. vet.	1	1	100	1	4
8	LANGKABEL, NINA	Academic Staff, temporary	Dr. med. vet.	1	1	100	1	4
8	FEILER, ANNIKA	Academic Staff, temporary		1	1	100	1	4
8	BAUMANN, MAXIMILIAN	Academic Staff, permanent	Dr. med. vet.	1	1	100		0
10	AMON, THOMAS	Professor	Dr. rer. nat.		1	0		
10	RÖSLER, UWE	Professor	Dr. med. vet.	1	1	100		9
10	FRIESE, ANIKA	Academic Staff, permanent	Dr. med. vet.	1	1	100		8
10	MURUGAIYAN, JAYASEELAN	Academic Staff, temporary	Dr. rer. nat.		1	100	1	4
10	ROSCHANSKI, NICOLE	Academic Staff, temporary	Dr. rer. nat.		1	100	1	4
11	THÖNE-REINEKE, CHRISTA	Professor	Dr. med. vet.	1	1	100		9
11	LADWIG, MECHTHILD	Academic Staff, permanent	Dr. med. vet.	1	1	100		8
12	MUNDHENK, LARS	Academic Staff, permanent	Dr. med. vet.	1	1	100		8
12	KERSHAW, OLIVIA	Academic Staff, permanent	Dr. med. vet.	1	1	100		4
12	GRUBER, ACHIM DIETER	Professor	Dr. med. vet.	1	1	100		9
12	KLOPFLEISCH, ROBERT	Professor	Dr. med. vet.	1	1	100		9
12	OSTROWSKI, ANJA	Academic Staff, temporary	PhD	1	1	100	1	4
12	BINDER, STEFANIE	Academic Staff, temporary		1	1	75	1	3
12	ERICKSON, NANCY ANN	Academic Staff, temporary		1	1	75	1	3
12	ZURAW, ALEKSANDRA	Academic Staff, temporary	Dr. med. vet.	1	1	50	1	2
12	BREITHAUPT, ANGELE	Academic Staff, temporary		1	1	100	1	4
12	FURSTENAU, JENNY	Academic Staff, temporary		1	1	50	1	2
12	MERZ, SOPHIE	Academic Staff, temporary		1	1	50	1	2
13	KRÜCKEN, JÜRGEN	Academic Staff, permanent	Dr. rer. nat.		1	100		8
13	Von SAMSON-HIMMELSTJERNA, GEORG	Professor	Dr. med. vet.	1	1	100		9
13	CLAUSEN, PETER HENNING	Academic Staff, permanent	Dr. med. vet.	1	1	100		8
13	DEMELER, JANINA	Professor	Dr. med. vet.	1	1	100	1	6
13	NIJHOF, ARD MENZO	Academic Staff, temporary	Ph.D.	1	1	100	1	4
14	FINK, HEIDRUN	Professor	Dr. rer. nat.		1	100		9
14	SANDER, SVENJA	Academic Staff, temporary	Dr. med. vet.	1	1	75	1	3
14	BROSDA, JAN	Academic Staff, temporary	Dr.rer.nat		1	100	1	4
14	DIETZE, SILKE	Academic Staff, temporary	Dr. med. vet.	1	1	75	1	3
14	BLÜMEL, LINDA	Academic Staff, temporary		1	1	100	1	4
14	FEJA, MALTE	Academic Staff, temporary	Dr.rer.nat		1	100	1	4
14	LÖKEN, EVA MARIA	Academic Staff, temporary		1	1	50	1	2
15	HAFEZ AHMED HAFEZ, MOHAMED	Professor	Dr. med. vet.	1	1	100		9
15	LÜSCHOW, DÖRTE	Academic Staff, permanent	Dr. med. vet.	1	1	100		8

Scientific Institutions	Name	Position	Title	Veterinarian	Budget financed	FTE	Temporary	Teaching responsibility in hrs / week
15	KOHLS, ANDREA	Academic Staff, temporary	Dr. med. vet.	1	1	100	1	4
15	BRÜGGEMANN-SCHWARZE, SARAH	Academic Staff, temporary	Dr. rer. nat.		1	100	1	4
16	DOHERR, MARCUS	Professor	Dr. med. vet.	1	1	100		6,8
16	MERLE, ROSWITHA	Academic Staff, permanent	Dr. med. vet.	1	1	100		8
16	SIMONEIT, CÉLINE	Academic Staff, temporary	Dr. med. vet.	1	1	50	1	2
16	PIEPER, LAURA	Academic Staff, temporary	Dr. med. vet.	1	1	50	1	4
17	KLAUS, CHRISTOPH	Academic Staff, temporary	Dr. med. vet.	1	1	100	1	4
17	LISCHER, CHRISTOPHORUS	Professor	Dr. med. vet.	1	1	100		9
17	LOSCHELDER, JOHANNA	Academic Staff, temporary		1	1	50	1	2
17	TESCHNER, DANA	Academic Staff, temporary	Dr. med. vet.	1	1	50	1	2
17	GEHLEN, HEIDRUN	Professor	Dr. med. vet.	1	1	100		9
17	ERTELT, ANTONIA	Academic Staff, temporary	Dr. med. vet.	1	1	50	1	2
17	WINTER, JUDITH	Academic Staff, temporary	Dr. med. vet.	1	1	50	1	2
17	RETTIG, MATTHIAS	Academic Staff, temporary	Dr. med. vet.	1	1	50	1	2
17	BARTON-VOSSSCHULTE, ANN KRISTIN	Academic Staff, temporary	Dr. med. vet.	1	1	50	1	2
17	SCHULZE, THORBEN	Academic Staff, temporary	Dr. med. vet.	1	1	50	1	2
17	PASCHEN, DORTE CHARLOTTE	Academic Staff, temporary		1	1	50	1	2
17	RHEINFELD, SVENJA	Academic Staff, temporary	Dr. med. vet.	1	1	50	1	2
17	MüLLER, CAROLIN	Academic Staff, temporary	Dr. med. vet.	1	1	50	1	2
17	ESTRADA MC DERMOTT, ROBERTO	Academic Staff, temporary	Dr. med. vet.	1	1	50	1	2
17	FERENCZ, TIBOR	Academic Staff, temporary		1	1	50	1	2
17	LEHMANN, BEATRICE	Academic Staff, temporary	Dr. med. vet.	1	1	50	1	2
17	SCHULZE, NICOLE	Academic Staff, temporary	Dr. med. vet.	1	1	50	1	2
17	NOGUERA CENDER, ANDREA CRISTINA	Academic Staff, temporary		1	1	50	1	2
17	BECKMANN, INA	Academic Staff, temporary		1		50	1	2
17	HANDLER, JOHANNES	Professor	Dr. med. vet.	1	1	100		9
17	NEUHAUSER, STEFANIE	Academic Staff, temporary	Dr. med. vet.	1	1	100	1	4
17	GÖRWITZ, FRANZISKA	Academic Staff, temporary			1	100	1	4
17	DÖRFEL, SUSANNE	Academic Staff, temporary		1	1	50	1	2
18	HECKERT, HANS PETER	Academic Staff, permanent	Dr. med. vet.	1	1	100		8
18	LAHRMANN, KARL HEINZ	Academic Staff, permanent	Dr. med. vet.	1	1	100		8
18	STAUFENBIEL, RUDOLF	Professor	Dr. med. vet.	1	1	100		7
18	HILMERT, HORST	Academic Staff, permanent	Dr. rer. nat.		1	75		6
18	MÜLLER, KERSTIN ELISABETH	Professor	Dr. med. vet.	1	1	100		9
18	TOPFER, MARLENE	Academic Staff, temporary		1	1	100	1	4
18	RODER, ANDREA	Academic Staff, temporary		1	1	50	1	2
18	GROSSE, REINHARD	Academic Staff, temporary	Dr. med. vet.	1	1	100	1	4
18	BINICI, CAGRI	Academic Staff, temporary	Dr. med. vet.	1	1	100	1	4
18	ZUZ, PHILIPP	Academic Staff, temporary		1	1	50	1	2
18	TAUTENHAHN, ANNEGRET	Academic Staff, temporary		1	1	75	1	3
18	VOLLAND, MARINA	Academic Staff, temporary		1	1	50	1	2
18	HINZMANN, BERNADETTE	Academic Staff, temporary	Dr. med. vet.	1	1	50	1	2
18	PIEPER, LAURA	Academic Staff, temporary	Dr. med. vet.	1	1	50		
19	HEUWIESER, WOLFGANG	Professor	Dr. med. vet.	1	1	100		9

Scientific Institutions	Name	Position	Title	Veterinarian	Budget financed	FTE	Temporary	Teaching responsibility in hrs / week
19	ARLT, SEBASTIAN PATRICK	Academic Staff, permanent	PD Dr. med. vet.	1	1	100		8
19	BORCHARDT, STEFAN	Academic Staff, temporary	Dr. med. vet.	1	1	100	1	4
19	FISCHER-TENHAGEN, CAROLA	Academic Staff, temporary	Dr. med. vet.	1	1	100	1	4
19	SCHÜLLER, LAURA KIM	Academic Staff, temporary	Dr. med. vet.	1	1	50	1	2
19	HAIMERL, PEGGY	Academic Staff, temporary	Dr. med. vet.	1	1	50	1	2
19	BERTULAT, SANDRA	Academic Staff, temporary	Dr. med. vet.	1	1	100	1	4
19	REES, ANNE	Academic Staff, temporary		1	1	50	1	2
19	POHL, ALINA	Academic Staff, temporary	Dr. med. vet.	1	1	50	1	2
20	KOHN, BARBARA	Professor	Dr. med. vet.	1	1	100		6,8
20	WERNER, HANS GEORG	Academic Staff, permanent	Dr. med. vet.	1	1	100		8
20	WEINGART, CHRISTIANE	Academic Staff, permanent	Dr. med. vet.	1	1	100		8
20	MÜLLER, KERSTIN	Academic Staff, permanent	PD Dr. med. vet.	1	1	100		8
20	STEIN, SILKE	Academic Staff, temporary	Dr. med. vet.	1	1	75	1	3
20	DORN, DIANA	Academic Staff, temporary	Dr. med. vet.	1	1	75	1	3
20	PAGEL, TANJA	Academic Staff, temporary	Dr. med. vet.	1	1	75	1	3
20	EULE, CORINNA	Professor	Dr. med. vet.	1	1	100		9
20	BRUNNBERG, MATHIAS	Academic Staff, temporary	Dr. med. vet.	1	1	75	1	3
20	LODERSTEDT, SHENJA	Academic Staff, temporary	Dr. med. vet.	1	1	100	1	4
20	MANCHI, GEORGE	Academic Staff, temporary	Dr. med. vet.	1	1	100	1	4
20	MERTEN, NINA	Academic Staff, temporary	Dr. med. vet.	1	1	100	1	4
20	DETTLING, ANNA	Academic Staff, temporary	Dr. med. vet.	1	1	75	1	3
20	PECHE, NINA	Academic Staff, temporary	Dr. med. vet.	1	1	50	1	2,8
20	BRUNNBERG, LEO	Guest Professor	Dr. med. vet.	1	1	100	1	5
20	RÜHE, BARBEL	Academic Staff, temporary	Dr. med. vet.	1	1	50	1	2
20	WEISS, JANINE	Academic Staff, temporary		1	1	50	1	2
20	TÜNSMEIER, JULIA	Academic Staff, temporary	Dr. med. vet.	1	1	50	1	2
Total				**124**	**155**	**130**	**100**	

B. Units of study of the core veterinary programme (including clinical rotations, EPT and graduation thesis)

Title, reference number, ECTS value, position in curriculum (year, semester), whether it is compulsory or elective, hours and modes of instruction, learning outcomes and their alignment with the ESEVT Day One Competences

Freie Universität Berlin

ECTS Brochure
Veterinary Medicine 2017

Contents

Introduction to the faculty of veterinary medicine

Welcome at the Faculty for Veterinary Medicince, Freie Universität Berlin. This brochure contains a description of the current veterinary curriciulum with all mandatory courses and their ECTS points. Further information about the faculty, scientific and administrative units and contact data can bor found on the faculty website: http://www.vetmed.fu-berlin.de

A complete list of courses including electives with times, location and responsible lecturers is provided in the online course list of the Freie Universität Berlin: http://www.fu-berlin.de/vv

Important addresses at the faculty of veterinary medicine

Office for Students
Oertzenweg 19b – Haus 4
14163 Berlin
Administration: Stephan Birk
Tel.: +49 30 838 62429
Fax: +49 30 838 62431
Studienbuero@vetmed.fu-berlin.de

Appointee for Erasmus
Univ.-Prof. Dr. Salah Amasheh
Oertzenweg 19 b, Hs. 11
14163 Berlin
Tel: +49 30 838 62602
salah.amasheh@fu-berlin.de

Dean
Univ.-Prof. Dr. Jürgen Zentek
Königin-Luise-Str.49
14195 Berlin
Tel: +49 30 838 52256
zentek.juergen@vetmed.fu-berlin.de

Associate Dean for Teaching
Univ.-Professor Dr. Marcus G. Doherr, PhD
Königsweg 67, Gebäude 21, 1. OG
14163 Berlin
Tel: +49 30 838 71714
marcus.doherr@fu-berlin.de

Associate Dean for Research
Univ.-Prof. Dr. Achim Gruber , PhD
Robert-von-Ostertag-Str. 15
14163 Berlin
Telefon +49 30 838 62440
Achim.Gruber@fu-berlin.de

Head of Administration
Dr. Anna Kosmol
Oertzenweg 19b – Haus 4
14163 Berlin
Tel.: +49 30 838-62646
Fax: +49 30 838 62431
a.kosmol@fu-berlin.de

Chair of the examination committee for the preclinical examination period
PD. Dr. Christoph Gabler
Oertzenweg 19 b
14163 Berlin
Tel: +49 30 838 62571
Fax: +49 30 838 62584
gablerch@zedat.fu-berlin.de

Chair of the examination committee for the clinical examination period
Prof. Dr. Rudolf Staufenbiel
Königsweg 65
14163 Berlin
Tel: +49 30 838 62289
Fax: +49 30 838 62512
staufen@zedat.fu-berlin.de

Appointee for BAföG (federal student support)
Dr. Jennifer zur Brügge
Oertzenweg 19b, Hs. 11
14163 Berlin
Tel: +49 30 838 62599
Jennifer.zur.Bruegge@fu-berlin.de

Veterinary Students Organisation
Oertzenweg 19b –Haus 7
14163 Berlin
fachschaft@vetmed.fu-berlin.de

Veterinary Library
Oertzenweg 19b- Haus 6
14163 Berlin
Administration: Dr. Tobias Gäng,
Tel.: 838-62636
library@vetmed.fu-berlin.de

Friends and sponsors of veterinary medicine in Berlin
Oertzenweg 19b – Haus 21
14163 Berlin
Contact Person: PD Dr. Peter-Henning Clausen
Telefon: +49 30 838 62505
clausen.ph@vetmed.fu-berlin.de

Scientific Institutions

Institute of Veterinary Anatomy

Koserstraße 20
14195 Berlin-Dahlem

Tel.: +49 (0)30 838 – 53555
Fax: +49 (0)30 838 – 53480

anatomie@vetmed.fu-berlin.de

Institute of Veterinary Physiology

Oertzenweg 19b
14163 Berlin-Düppel
Haus 11
Tel.: +49 (0)30 838-62600
Fax: +49 (0)30 838-62610

physiologie@vetmed.fu-berlin.de

Institute of Veterinary Biochemistry

Oertzenweg 19b
14163 Berlin-Düppel
Haus 12
Tel.: +49 (0)30 838-62225
Fax: +49 (0)30 838-62584

biochemie@vetmed.fu-berlin.de

Institute of Animal Nutrition

Königin-Luise-Str. 49
14195 Berlin-Dahlem

Tel.: +49 (0)30 838-52256
Fax: +49 (0)30 838-55938

tierernaehrung@vetmed.fu-berlin.de

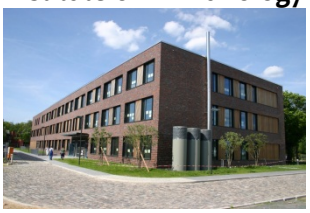
Institute of Virology

R.-v.-Ostertag-Str. 7-13
14163 Berlin-Düppel

Tel.: +49 (0)30 838-51833

virologie@vetmed.fu-berlin.de

Institute of Immunology



R.-v.-Ostertag-Str. 7-13
14163 Berlin-Düppel

Tel.: +49 (0)30 838-51824

imb@vetmed.fu-berlin.de

Institute of Microbiology and Epizootics

R.-v.-Ostertag-Str. 7-13
14163 Berlin-Düppel

Tel.: +49 (0)30 838-51840

imt@zedat.fu-berlin.de

Institute of Food Safety and Food Hygiene

Königsweg 69
14163 Berlin-Düppel

Tel.: +49 (0)30 838-62550

lebensmittelhygiene@vetmed.fu-berlin.de

Institute of Animal and Environmental Hygiene

R.-v.-Ostertag-Str. 7-13
14163 Berlin-Düppel

Tel.: +49 (0)30 838-51845

tierhygiene@vetmed.fu-berlin.de

Institute of Animal Welfare, Animal Behavior and Laboratory Animal Science

Oerzenweg 19b
14163 Berlin-Düppel

Tel.: +49 (0)30 838-56034

tierschutz@vetmed.fu-berlin.de

Institute of Veterinary Pathology

R.-v.-Ostertag-Str. 15
14163 Berlin-Düppel

Tel.: +49 (0)30 838-62450

pathologie@vetmed.fu-berlin.de

Institute of Parasitology and Tropical Veterinary Medicine

R.-v.-Ostertag-Str. 7-13
14163 Berlin-Düppel

Tel.: +49 (0)30 838 62310

parasitologie@vetmed.fu-berlin.de

Institute of Pharmacology and Toxicology

Koserstraße 20
14195 Berlin-Dahlem

Tel.: +49 (0)30 838-53214
Fax: +49 (0)30 838-53112

pharmakologie@vetmed.fu-berlin.de

Institute of Poultry Diseases

Königsweg 63
14163 Berlin-Düppel

Tel.: +49 (0)30 838-62310
Fax: +49 (0)30 838-62323

gefluegelkrankheiten@vetmed.fu-berlin.de

Institute of Veterinary Epidemiology and Biostatistics

Königsweg 67, Gebäude 21, 1. OG
14163 Berlin

Tel: +49 30 838 56034

marcus.doherr@fu-berlin.de

Equine Clinic: Surgery and Radiology

Oertzenweg 19b
14163 Berlin-Düppel

Tel.: +49 (0)30 838-62300
Fax: +49 (0)30 838-62529

pferdeklinik@vetmed.fu-berlin.de

Ruminant and Swine Clinic

Königsweg 65
14163 Berlin-Düppel

Tel.: +49 (0)30 838-62261
Fax: +49 (0)30 838-62512

klauentierklinik@vetmed.fu-berlin.de

Animal Reproduction Clinic

Königsweg 65
14163 Berlin-Düppel

Tel.: +49 (0)30 838-62618
Fax: +49 (0)30 838-62620

fortpflanzungsklinik@vetmed.fu-berlin.de

Small Animal Clinic

Oertzenweg 19b
14163 Berlin-Düppel

Tel.: +49 (0)30 838-62356
Fax: +40 (0)30 838-62521

kleintierklinik@vetmed.fu-berlin.de

Grading Scale

At the Faculty of Vteterinary Medicine grading scales comply with § 14 TAppV and consist of five levels with verbal definitions. For the evaluation of achievements in oral and written examinations, the following examination scores are used:

Mark	Definition	Description
1	„very good“	an outstanding performance
2	„good“	the performance is significantly above average requirements
3	„satisfactory“	the performance meets average requirements in every respect
4	„sufficient“	the performance meets the requirements despite its shortcomings
5	„insufficient“	the performance no longer meets the requirements due to significant shortcomings (“fail”)

For students within the ECTS this local rating system is converted into the ECTS grading scale, which consists of 6 levels with the following criteria:

Level	Range of Marks	Definition	Description
A	1.0 – 1.5	excellent	an exceptional performance
B	1.6 – 2.0	very good	the performance is above average with some slight errors
C	2.1 - 3.0	good	a generally solid performance with some significant errors
D	3.1 – 3.5	satisfactory	moderate performance with eye-catching errors
E	3.6 – 4.0	sufficient	the performance meets the minimum requirements
F	4.1 – 5.0	insufficient	performance below the minimum requirements (“fail”)

Course of Study

The veterinary education in Germany is defined by the German Veterinary Medical Licensure Law (“Verordnung zur Approbation von Tierärztinnen und Tierärzten”; TAppV). Veterinary training includes a total of 5,020 hours and consists of an intramural scientific-theoretical (3,850 hours) and an extramural practical study part (1,170 hours). The study is divided into the basic study period ("pre-clinic", 2 years) and the clinical study period ("Clinic", 3.5 years). Minimum time to degree is 5.5 years; this includes the final examination period.

The 5th year is organized as "practical year" in which students rotate through the Faculty’s clinics, meat hygiene and veterinary pathology in addition to completing the major part of their extramural practical training . The 11th semester is the examination semester.

Details on the individual study and examination schedule are laid down in respective study and examination regulations that have to be accepted by the faculty board and are published in the University News.

For each semester timetables are published before the start of the term that show the weekly lectures, exercises and seminars as well as the locations. Details are posted on the faculty website under http://www.vetmed.fu-berlin.de/studium/veterinaermedizin/stundenplaene/index.html. Further information on the indivual courses can be found in the online course catalogue of the Freie Universität Berlin under http://www.fu-berlin.de/vv/

Examination schedule

A. Pre-clinical Veterinary Examination	
Natural scientific phase after the 2nd semester	
Botany of forage, poisonous and medicinal plants	oral
Chemistry	oral
Physics including basics of physical radiation protection	oral
Zoology	oral
Anatomic physiological phase after the 4th semester	
after the 3rd semester	
Biochemistry	oral
Animal husbandry and genetics including animal assessment	written
after the 4th semester	
Anatomy	practical / oral
Histology and embryology	written
Physiology	practical / oral
B. Veterinary Examination	
during or after the 5th semester	
Clinical propaedeutics	practical / oral
Animal nutrition	practical / oral
Animal and environmental hygiene	oral
Animal welfare and behaviour	written
Virology	oral
after the 6th semester	
Parasitology	practical / oral
Pharmacology and Toxicology	oral
after the 8th semester	
Pharmaceutical and narcotics law	practical / oral
Bacteriology and mycology – (additional tests during the 5th and 6th semester)	oral
Radiology	oral
after the 8th semester	
Animal disease control and infection epidemiology	oral
during the 5th and 6th year	
General and special pathological anatomy and histology	practical / oral / written
Surgery and anesthesiology	practical / oral
Meat hygiene (additional test during the 8th semester)	practical / oral
Poultry diseases	practical / oral
Forensic veterinary medicine, law and ethics of the profession	oral
Internal medicine	practical / oral
Food science incl. food hygiene	practical / oral
Milk hygiene	practical / oral
Reproductive medicine	practical / oral

Tabular Overview of the Course of Study

Times are provided in semester week hours (SWH; 14 lecture hours per SWH) and in respective ECTS credits.

Pre-Clinical Studies

Courses in the 1. semester	Form of the Course	SWH	ECTS
Basic lecture biology – zoology	Lecture	4	4
Basic lecture biology – botany	Lecture	2	2
Organic and inorganic chemistry	Lecture	4	4
Experimental physics and radiology	Lecture	2	2
Physik-Praktikum	Practical course	2	4
Medical terminology	Lecture	1	1
Anatomy I	Lecture	2	2
Anatomical preparation exercises I	Practical course	4	6
Histology I	Lecture	1	1
Histological exercises I	Practical course	2	4
History of veterinary medicine	Lecture	1	1
Professional organisation and ethics	Lecture	1	1
Interdisciplinary lecture - Professional Skills	Lecture	1	1
Sum		**27**	**33**

Courses in the 2. semester	Form of the Course	SWH	ECTS
Botany of forage, poisonous and medicinal plants	Lecture	2	2
Chemistry - practical course	Practical course	3.5	5
Anatomical seminar/ Situs demonstrations I	Practical course	1.5	3
Introduction to animal welfare ethics and law	Lecture	2	2
Introduction to ethology	Lecture	2	2
General agriculture and animal husbandry	Lecture	2	2
Biostatistics	Lecture / Practical course	2	3
Biochemistry I	Lecture	4	4
Biochemistry seminar	Seminar	0.5	2
Physiology I	Lecture	2	2
Introduction in animal husbandry and assessment	Lecture	2	2
Special animal husbandry and assessment	Lecture	2	3
Exercises to the special animal husbandry and animal assessment	Practical course	1	1
Interdisciplinary lecture - Professional Skills	Lecture	1	1
Sum		**27.5**	**34**

Courses in the 3. semester	Form of the Course	SWH	ECTS
Anatomy II	Lecture	2	2
Anatomical preparation exercises II	Practical course	4	8
Physiology II	Lecture	4	4
Proseminar to the practical course in physiology	Seminar	0.5	2
Biochemistry II	Lecture	3	3
Biochemical practical course	Practical course	1.5	4
Interdisciplinary lecture - Professional Skills	Lecture	1	1
Sum		**16**	**24**

Courses in the 4. semester	Form of the Course	SWH	ECTS
Anatomical seminar / Situs demonstrations II	Practical course	2	4
Embryology	Lecture	1	1
Histology II	Lecture	1	1
Histological exercises II	Practical course	2	4
Clinical Biochemistry	Lecture	1	1
Physiology III	Lecture	1	1
Physiology practical course	Practical course	2.5	5
Animal feed exercises	Practical course	2	4
Animal protection seminar	Practical course	2	4
Interdisciplinary lecture - Professional Skills	Lecture	1	1
Sum		**15.5**	**26**

Clinical Studies

Courses in the 5. semester	Form of the Course	SWH	ECTS
Animal nutrition	Lecture	3	3
Animal nutrition	Practical course	2	2
General and special virology I	Lecture	2	2
General lecture on infections and epizootics	Lecture	2	2
Animal and environmental hygiene	Lecture	2	2
Keeping of animals	Lecture	2	2
General pathology	Lecture	3.5	3.5
General pathology	Practical course	0.5	0.5
Parasitology	Lecture	3	3
Pharmacology and toxicology	Lecture	4	4
General and clinical radiology I	Lecture	1	1
General surgery	Lecture	2	2
General and special immunology	Lecture	2	2
Clinical propaedeutics - small animal	Practical course	2	2
Clinical propaedeutics - reproduction	Practical course	2	2
Clinical propaedeutics - cloven-hoofed animals	Practical course	2	2
Clinical propaedeutics - horse	Practical course	2	2
Sum		**37**	**37**

Courses in the 6. semester	Form of the Course	SWH	ECTS
Pharmacology and toxicology	Lecture	2	2
Virology - practical course	Practical course	1	1
General and special virology II	Lecture	1	1
Mikrobiology – practical course	Practical course	2	2
Bacteriology and mycology	Lecture	1	1
Meat hygiene I	Lecture	1	1
Milk hygiene	Lecture	2	2
Food technology and hygiene I	Lecture	1	1
Parasitological exercises	Practical course	2	2
Clinical demonstrations I - small animal	Practical course	2	2
Clinical demonstrations I - reproduction	Practical course	1	1
Clinical demonstrations I - cloven-hoofed animals	Practical course	1	1
Clinical demonstrations I - horse	Practical course	2	2
Labororatory course	Practical course	2	2
Organ-centred teaching 1: Introduction, medical teaching	Lecture	1	1
Organ-centred teaching 2: Reproduction I	Lecture	3	3
Organ-centred teaching 3: Gastroenterology	Lecture	4	4
Organ-centred teaching 4: Liver, pancreas	Lecture	1	1
Organ-centred teaching 5: Kidney und efferent urinary tract	Lecture	0.5	0.5
Pathological demonstrations in organ-centred teaching I	Practical course	0.5	0.5
Interdisciplinary lectures	Lecture	4	4
Sum		**35**	**35**

Courses in the 7. semester	Form of the Course	SWH	ECTS
Animal disease control I	Lecture	1	1
Meat Hygiene II	Lecture	1	1
Food science	Lecture	2	2
Food science – practical course I	Practical course	2	2
Milkanalysis – practical course	Practical course	2	2
Pathologic-anatomical demonstrations I	Practical course	1	1
Pharmaceutical and narcotics law / drug regulation and application	Lecture / Practical course	2	2
Galenics - practical course	Practical course	1	1
General and clinical radiology II	Lecture	2	2
Clinical demonstrations II - small animal	Practical course	2	2
Clinical demonstrations II - reproduction	Practical course	1	1
Clinical demonstrations II - cloven-hoofed animals	Practical course	1	1
Clinical demonstrations II - horse	Practical course	2	2
Surgery and anesthesia	Lecture	1	1
Organ-centred teaching 6: Reproduction II	Lecture	3	3
Organ-centred teaching 7: Respiratory system	Lecture	1.5	1.5
Organ-centred teaching 8: Cardio-vascular system	Lecture	1	1
Organ-centred teaching 9: Blood, haemopoietic organs, lymphatic system	Lecture	2.5	2.5

Pathological demonstrations in organ-centred teaching II	Practical course	0.5	0.5
Interdisciplinary lectures	Lecture	4	4
Sum		**33.5**	**33.5**

Courses in the 8. semester	Form of the Course	SWH	ECTS
Animal disease control and infection epidemiology II	Lecture	2	2
Food science – practical course II	Practical course	2	2
Meat Hygiene III	Lecture	2	2
Pathologic-anatomical demonstrations II	Practical course	1	1
Poultry diseases	Lecture	2	2
Clinical demonstrations - Poultry	Practical course	2	2
General ophthalmology	Practical course	2	2
Law and ethics of the profession	Lecture	2	2
Krankheiten der Bienen	Lecture	1	1
Diseases of reptiles, amphibians and fishes	Lecture	1	1
laboratory animal science	Lecture	1	1
Organ-centred teaching 10: Musculoskeletal systemt	Lecture	3	3
Organ-centred teaching 11: Nervous system	Lecture	2	2
Organ-centred teaching 12: Metabolism and endocrine organs	Lecture	2	2
Organ-centred teaching 13: Udder and teats	Lecture	2	2
Organ-centred teaching 14: Skin, mucous membrane, skin appendages	Lecture	1	1
Organ-centred teaching 15: Systemic diseases	Lecture	1	1
Pathological demonstrations in organ-centred teaching III	Practical course	0.5	0.5
Interdisciplinary lectures	Lecture	4	4
Sum		**33.5**	**33.5**

Courses in the 9. and 10. semester	Form of the Course	SWH	ECTS
Clinical rotation – Small animal clinic	Practical course	5.5	5.5
Clinical rotation – Equine clinic	Practical course	5.9	5.9
Clinical rotation – Ruminant and swine clinic	Practical course	5.4	5.4
Clinical rotation – Animal reproduction	Practical course	5.4	5.4
Clinical rotation – Poultry diseases	Practical course	0.8	0.8
Clinical rotation – Pathology	Practical course	4.6	4.6
Clinical rotation – Meat hygiene	Practical course	2.4	2.4
Sum		**30**	**30**

Compulsory elective	Form of the Course	SWH	ECTS
During pre-clinical period	Practical course / Seminar / Lecture	6	6
During clinical period	Practical course / Seminar / Lecture	16	16
Sum		**22**	**22**

Extramural practical training	Form of the Course	Stunden	ECTS
Farming, animal husbandry and animal breeding (70h)	Internship	70	5
Abattoir, meat inspection (100h)	Internship	100	7
Veterinary administration (75h)	Internship	75	5
Food hygiene and safety inspection (75h)	Internship	75	5
Short internship in veterinary practice (150 h)	Internship	150	10
Long internship in veterinary practice (700 h)	Internship	700	50
Sum in lecture hours and ECTS		**1170**	**82**

Course list and syllabus of the pre-clinical study period

Times are provided in semester week hours (SWH; 14 lecture hours per SWH) and in repective ECTS credits.

Mandatory courses during the 1st term

Basic lecture biology – Zoology	
Form of the course	Lecture (4 SWH)
ECTS	4
Responsibility	Faculty of Biology
Entry requirements	None
Course contents	Construction of the animal cell; function relationships (excretion, contractile and motile elements; cytoskeleton, extracellular matrix); reproduction, alternation of generations and development; basic phenomena of genetics (molecular genetics, developmental genetics); introduction to the phylogenetic systematics; presentation of the main taxa of the Animal Kingdom; comparative animal physiology including neurobiology and behavioural biology.
Performance assessment	None

Basic lecture biology – Botany	
Form of the course	Lecture (2 SWH)
ECTS	2
Responsibility	Faculty of Biology
Entry requirements	None
Course contents	Overview of organization, function, development, and movement in plants. Anatomy and morphology of seed plants. The plant cell (membranes, cell types, cell function, cell wall), metabolic physiology (photosynthesis, energy-, fat-, nitrogen-metabolism, nutrition and special feeding strategies), alternation of generations and reproduction, developmental physiology (pattern formation, exogenous and endogenous signals, polarity, model plant of Arabidopsis), stimulus physiology and physiology of movement.
Performance assessment	None

Organic and inorganic chemistry	
Form oft he course	Lecture (4 SWH)
ECTS	4
Responsibility	Faculty of Chemistry
Entry requirements	None
Course contents	Chemical reactions, stoichiometry, amount of substance: mole, construction of atoms, light/matter interaction, periodic table, material properties, inert gases, aggregate state, ideal gas law, isotope, covalent bonding H_2 molecule, oxidation and reduction, halogens, electronegativities, hydrogen halide, polar covalent bond, hydrogen bond, chemical equilibrium, law of mass action, reaction rate, half-life, monomolecular reaction, energetics of chemical reactions, Gibbs-Helmholtz-equation, energy profile, activation energy, completed, closed & open systems, alkaline metals, metallic bonding, ionic bonding, net ionic, alkali halogenide, chalcogens, O_2-molecule, ozone, orbital hybridization, geometry of polyatomic molecules, *.- and. *.-bindings, mesomerism, properties and structure of water, selfdissoziation, pH, acids & bases (Brønstedt), neutralization, indicators, weak acids and bases, pkA, pkB, degree of dissociation, buffer, buffer capacity, hydrogen peroxide, HOCl, chlorinated lime, perchloric acid, strong & weak oxidizing and reducing

	agents, redox potential, Nernst equation, pH-dependent potentials, pH measurement with the glass electrode, diffusion and membrane potentials, sulphur and sulphuric compounds, coupled equilibria, solubility product, heterogeneous phase equilibria, essential trace elements, toxicity and concentration, alkaline earth metals, formation & decay constants of complexes, chelations, denticity, coordination number (boron and aluminium), pnictogens, ammoniac, hydrazine, hydroxylamine, nitrogen oxides, nitrous and nitric acid, phosphoric acid, apatite, multi-stage dissociation, condensation of phosphoric acid, phosphate buffer; carbon group, carbon dioxide, hydrogen carbonate and carbonate, urea, phosgene, hydrogen cyanide and salts; overview of silicium compounds, important subgroup elements (Fe, Cu, Co, Mo, etc.).
Performance assessment	None

Experimental physics and radiology	
Form of the course	Lecture (2 SWH)
ECTS	2
Responsibility	Faculty of Physics
Entry requirements	None
Course contents	1. Mechanics: Motion of point-shaped bodies, conservation laws, equations of motion, gravity, forces and equilibrium of forces, motion of rigid bodies, rotation, accelerated reference systems, elastic properties of solid bodies, static and moving liquids, harmonic oscillator, waves, interference, acoustics 2. Thermodynamics: Equations of state, kinetic theory of gases, specific heat, phase transformation, entropy, cycles, thermal engines 3. Electricity: Electric fields, magnetic fields, induction, circuits, AC, oscillating circuit 4. Optics: Wave, interference, diffraction, reflection, refraction, lenses, optical instruments, resolution 5. Atomic and nuclear physics: Atoms, nuclei, radioactivity
Educational objective	See course documentation
Performance assessment	None

Physics - Practical course	
Form of the course	Practical course (2 SWH)
ECTS	4
Responsibility	Faculty of Physics
Entry requirements	None
Advice	The event will be held in blocks in the 1st and 2nd semester
Course contents	Practical exercises on selected topics of the lecture „Atomic and nuclear physics“
Performance assessment	None

Medical terminology	
Form of the course	Lecture (1 SWH)
ECTS	1
Responsibility	Institute of Veterinary Anatomy (WE01)
Entry requirements	None; A Latinum or Graecum can replace participation in this seminar
Course contents	Latin and Greek phonology and morpheme, application in the scientific and medical language, structure of the nomina anatomica, including related nomenclatures
Performance assessment	Written test at the end of term

Anatomy I - Topographical and applied anatomy of dogs and cats	
Form of the course	Lecture (2 SWH)
ECTS	2
Responsibility	Institute of Veterinary Anatomy (WE01)
Entry requirements	None
Course contents	General myology, osteology, angiology, neurology, lymphology. Skeleton: Structure, organization, and joints. Muscles: location, function, innervation, and auxiliaries. Intestines: location, relationship of organs, classification, meso, vascular and nerve supply and lymph nodes. Neck: cervical spine, neck muscles, neck viscera, conduction systems.

	Chest: bones of the chest, muscles, pleural relations, organs, conduction systems. Abdomen: chest and lumbar spine, muscles, teats. Abdominal cavity: organs, peritoneal relations, conduction systems Pelvis: pelvic girdle, muscles. Pelvic cavity: organs, peritoneal relations, conduction systems. Shoulder limb: bones, limb muscles, conduction systems, lymph nodes, end of the toes Pelvic limb: bones, limb muscles, conduction systems, lymph nodes. Head: ones, organs: oral cavity, throat, nasal cavity and paranasal sinuses, larynx. Central nervous system: spinal cord: lining, organization and structure, brain: meninges, organization and structure, nerves.
Educational objective	Establishing anatomical base knowledge in form of general osteology, myology, arthrology, angiology, lymphology, neurology and general composition of skin, mucous and serous membranes. Knowledge of the basic concept of structures and organ systems (e.g., musculoskeletal, respiratory, digestive, and urogenital system) in the carnivores (dog, cat) in close relation to the circulatory and nervous system, as well as the lymphoid and endocrine system. Ability to link topographical and systematic anatomy; interdisciplinary links (histology, zoology). Practical relevance through constant link of applied anatomical aspects with clinically relevant topics in terms of the clinical section of the study (surgery, imaging: X-ray, ultrasound, MRI, CT). Understanding of comparative anatomy using the example of variations of basic appearances in the body of dogs and cats. Preparation for the following thematically linked practical lessons.
Performance assessment	None

Anatomical preparation exercises I (dog and cat)	
Form of the course	Exercise (4 SWH)
ECTS	6
Responsibility	Institute of Veterinary Anatomy (WE01)
Entry requirements	None
Course contents	Introduction to the preparation exercises of the dog. General osteology and thorax with spine and joints. Skin, skin muscles and skin nerves. Dorsal trunk limb muscles. Ventral trunk limb muscles. Conduction systems and neck viscera. Bones and joints of the shoulder limb. Conduction systems and muscles on the upper arm. Conduction systems and muscles in the forearm. Spinal muscles, lumbar skin nerves. Muscles of respiration. Ventrolateral body wall with teats and prepuce, abdominal muscles, groin. Thoracic cavity with pleural caves and lungs. Heart and pericardium. Conduction systems of the thoracic cavity with sympathetic chain. Topography of the abdominal organs and peritoneum. Stomach and intestines with blood vessels and nerves. Intestinal accessory glands, autonomous nervous system. Pelvic cavity with peritoneum, meso and tendons of the urinary and reproductive organs, Fossa ischiorectalis. Comparing sexual organs. Pelvic girdle, bones, and joints of the pelvic limb. Conduction systems and hip joint muscles. Conduction systems and muscles in the lower leg. Skull, nose, nasal cavity, larynx, oral cavity, pharynx, crainial nerves, tongue, salivary glands, teeth. Spinal cord, brain and meninges.
Educational objectives	Systematically-derived topographic preparation of the structures and organ systems listed above at preserved and fresh carcasses (comparing cat and dog). Consolidation of expertise, expanding the rhetorical skills and intensification of professional communication between students with the aid of the new educational method "peer instructing". "Peer instructing" is based on teachings by students and accompanied by instructors. Learning the topographical preparation method as preparation for the future clinical surgical activity.

	Combination of topographical and systematic anatomy; interdisciplinary links (histology, zoology). Independent preparation of body cavities of fresh carcasses (dog and cat). Comparison of the different anatomical structures of fresh Carnivore carcasses, as well as fixed organ and skeletal preparations or plastinates and polyethylene glycol (PEG)-preparations. Mesoscopic demonstrations (magnifying glass). Learn anatomical terms. Clinical reference by learning to interprete imaging techniques by comparing self-made or provided anatomical preparations with X-rays presented on specific topics, as well as CT and ultrasound recordings. Guidance for evaluation of clinically applied questions.
Performance assessment	4 oral and practical tests during the semester

General histology (cytology und histology of vertebrates) and special histology I	
Form of the course	Lecture (1 SWH)
ECTS	1
Responsibility	Institute of Veterinary Anatomy (WE01)
Entry requirements	None
Course contents	Cytology: general, cell definititon. Cytoplasm: plasmalemm, hyaloplasm, microtubules, cell organelles, metaplasm, paraplasm, nucleus. Manifestation of life of the cell: cell growth, cell proliferation (mitosis, meiosis), functional morphology. Histology: general, tissue definition. Epithelial tissue: integumentary epithelia, secretory epithelia, sensory epithelia. Connective and supporting tissue: mesenchymal tissue, reticular tissue, adipose tissue, fibrous connective tissue, cartilage and bone tissue. Muscle tissue: smooth muscle, skeletal muscle, myocardal muscle. Nervous tissue: neuron, neuroglia, nerve fiber, synapses. Cardiovascular system: blood, blood vessels, lymph vessels, heart, haematopoiesis and bone marrow. Immune system: thymus, lymph nodes, spleen, tonsils. Skin and appendages: skin, hair, cutaneous glands (perspiratory glands, sebaceous gland, mammary gland) Sensory equipment of the skin, claw, hoof.
Educational objectives	Ultrastructure of the animal cell, structure of tissues, and microscopic anatomy of the skin and of the immune system of companion animals and birds in terms of functionality. Establishing references to clinical situations or cases and integration of various fields of knowledge.
Performance assessment	None

General histology (cytology and histology of vertebrates) and special histology I	
Form of the course	Exercise (2 SWH)
ECTS	4
Responsibility	Institute of Veterinary Anatomy (WE01)
Entry requirements	None
Course contents	Introduction to histology and cytology of companion animals. Microscope and making of histological sections in electron microscopy and immunohistochemistry. Guided microscopy of cells and tissues: cytology, connective and supporting tissue, osteogenesis, muscle tissue, nerve tissue, epithelial tissue, skin and mamma, blood and lymph vessels, blood, bone marrow, lymphatic organs.
Educational objectives	Basic knowledge of the making of preparations for light and electron microscopy, basic knowledge of light microscopy, routinely used histological stains, immunohistochemistry and electron microscopy. Basic knowledge of the distinction between physiologically and pathologically modified tissue. Maximizing the expertise through peer instructing ("Peer instructing" is based on teachings by students and accompanied by instructors.).
Performance assessment	Written or practical test at the end of the term

History of veterinary medicine	
Form of the course	Lecture (1 SWH)
ECTS	1
Responsibility	Equine Clinic (WE17)
Entry requirements	None
Course contents	At the beginning of veterinary studies, students shall be given an insight into the development of veterinary medicine and the history of the professional. Among other things the relationship between humans and animals is demonstrated from the prehistoric to the present.
Performance assessment	None

Veterinary professional organisation and ethics	
Format	Lecture (1 SWH)
ECTS	1
Responsibility	Clinic for Ruminants and Swine
Entry requirements	None
Course content	Introduction to the responsibilities of and opportunities within the veterinary profession. Overview of continued eduction and specialisation options; role of the veterinary medicine in public health / one health, the food-producing sector, in medical research, herd health and agriculture.
Educational objectives	Knowledge on the responsibilities and working areas for veterinarians
Performance assessment	None

Mandatory courses during the 2nd term

Botany of forage, poisonous, and medicinal plants	
Form of the course	Lecture (2 SWH)
ECTS	2
Responsibility	Institute of Animal Nutrition (WE04)
Entry requirements	None
Course contents	Fundamentals of botany of forage plants, nutritive value, cultivation, conservation and uses.
Educational objectives	Students know the most important forage plants and their main ingredients, as well as the possibile fields of application.
Performance assessment	None

Chemistry - Practical course for veterinarians	
Form of the course	Practical course (3.5 SWH)
ECTS	5
Responsibility	Faculty of Chemistry
Entry requirements	None
Advice	The event will be held in blocks in the 1st and 2nd semester
Course contents	Practical exercises on selected topics of the lecture
Performance assessment	Written test (in the 2nd semester)

Anatomical seminar/ Situs demonstrations I	
Form of the course	Seminar (1.5 SWH)
ECTS	3
Responsibility	Institute of Veterinary Anatomy (WE01)
Entry requirements	Successful participation: Anatomical preparation exercises I (dog and cat)
Course contents	Unfixed dogs and cats: Demonstration of the organs, structures and relationships of mesentery in abdominal and pelvic cavities, as well as in the thoracic cavity. Abdominal situs: organs that are supplied by the A. coeliaca and A. mesenterica cran. , including their mesenteries and supply structures; abdominal wall with rectus sheath. Female pelvic situs: inner and outer genitals, urinary organs, rectum including the mesenteries and supply structures; skin and skin modifications, excavations. Male pelvic situs: inner and outer genitals, urinary organs, rectum including the Mesenteries and supply structures; pelvis, inguinal rings, lymph nodes. Thorax situs: organs of the throracic cavity including their mesenteries and supply structures; autonomous nervous system. Situs cat: all body cavities. Sonography situs: sonographic appearance of the main organ systems in the abdominal and pelvic cavities. X-ray situs: radiographic anatomy, image interpretation and reporting.
Educational objectives	Consolidation and extension of anatomical knowledge of body cavities of carnivores from unfixed carcasses (dog, cat) and representation of clinically significant structures of the body cavities and the internal organs using the examples of clinical questions. Projection of the organs to the body wall. Independent preparation of the body cavities, orientation within the carcass and identification of anatomical structures. Presentation of operating conditions and detection of pathological changes. Basic knowledge of anatomically relevant structures for the soft tissue surgery and simulation of standard surgery such as the castration of male and female animals. Consolidation of expertise, expanding the rhetorical skills and intensification of technical communication between students or between students and the scientific staff through so-called "competence teams". A competence team consists of 2 students, which independently prepare for specific organs and organ systems and answer the teacher's questions during the seminar. Basic knowledge of sonographic examination and the section diagram anatomy. Anatomical knowledge to interpret the structures on X-ray and CT images.
Performance assessment	oral and practical, each student each day

Introduction to ethology	
Form of the course	Lecture (2 SWH)
ECTS	2
Responsibility	Institute of Animal Welfare and Behavior (WE11)
Entry requirements	None
Course contents	A. History and functioning of ethology: ethograms and functional circuits, including territorial behavior, sexual behavior, socialization, aggression, order of precedence; Influence of domestication on behavior; ontogeny of behaviour; coping strategies; learning theories; classical and instrumental conditioning. B. Specific behavioral patterns of dogs, cats, horses, cattle, pigs, sheep, goats, llamas, small pet animals, birds, reptiles and fish: normal behavior, behavioral disorders and problem behaviour; signals of veterinary importance (including pain / suffering indicators); behavioral therapy (including applied learning theory, desensitization, counter conditioning, habituation).
Performance assessment	None

General agricultural economics	
Form of the course	Lecture (2 SWH)
ECTS	2
Responsibility	Humboldt Universität, Faculty of Live Sciences
Entry requirements	None
Course contents	Influencing factors and specific function in the livestock sector; animal husbandry, animal performance, animal health; animal-environment interaction; agricultural farm structures with livestock; intensive and extensive livestock husbandry; standards regarding livestock systems; animal husbandry and welfare; animal husbandry and environmental protection; animals in the agricultural ecosystem; evaluation of livestock systems; evaluation criteria for a livestock-friendly and ecological animal husbandry; fundamentals of stable construction; housing for dairy cows; combinations of livestock husbandry, feeding, milking, manure removal techniques; variants of housing for growing cattle; procedures of pasture management; housing forms for pigs in different age groups; influences of animal husbandry and feeding practices on the health and growth of pigs, as well as on the quality of the meat; possibilities and conditions for keeping sheep; poultry farming; animal husbandry in organic farming.
Performance assessment	None

Introduction to animal welfare ethics and law	
Form of the course	Lecture (2 SWH)
ECTS	2
Responsibility	Institute of Animal Welfare, Animal Behavior and Laboratory Animal Science (WE11)
Entry requirements	None
Course contents	Animal ethics: deontological and utilitarian ethics of animals, animal law concepts, reference systems of ethical reasoning (contractualism, empathy, socio-biology, sense of justice), cruelty to animals and animal killing, veterinary ethics, animal ethics and politics. - Animal protection law: historical and current concepts of animal welfare legislation, crimes and offences, proportionality (reasonable reason), collective right to file an action, animal advocate, animal protection ombudsman, animal welfare officer, guarantor position, right to life, emergency killing indication, euthanasia, animal experimentation law, alternative methods (3R).)
Performance assessment	None

Special animal husbandry and assessment	
Form of the course	Lecture (2 SWH)
ECTS	2
Responsibility	Humboldt Universität, Faculty of Live Sciences
Entry requirements	None
Course contents	Cattle: current state of cattle breeding, organization and performance testing in cattle breeding, milk and beef production, estimation of breeding values in dairy cattle farming. Horses: horse breeds, performance and perspective use, estimation of breeding values in the riding horse and racehorse, special genetics and marker assisted breeding. Pigs: regionalisation, importance of piglet production and pig fattening, performance testing and estimation of breeding values, piglet and porker production. Sheep and goats: state of sheep breeding in Germany, modes of operation, performance, performance testing and breeding programs. Poultry: regionalisation, importance, breeds, breeding, rearing, laying hens, young broilers.
Performance assessment	None

Exercises to the special animal husbandry and animal assessment	
Form of the course	Exercise (2 SWH)
ECTS	3
Responsibility	Humboldt Universität, Faculty of Live Sciences
Entry requirements	None
Course contents	Cattle: breeds; performance direction and perspective use, assessment of breeding animals, assessment of carcasses and quality production, practicale breeding work. Horses: organization of performance tests. Swine: estimation of breeding values, breeding procedures, assessment of breeds and breeding animals, evaluation of carcass quality. Sheep and goats: breeds of sheep andgoats, breeding programs for adverse population structures. Poultry: breeding processes, performance testing and assessment of egg quality.
Performance assessment	Written examination

Biostatistics	
Form of the course	Lecture & Exercise (2 SWH)
ECTS	3
Responsibility	Institute of Veterinary Epidemiology & Biostatistics (WE16)
Entry requirements	None
Course contents	Basic concepts of epidemiology and biostatistics, data collection, data processing, measures of dispersion and variation, probability, probability distributions (binomial & normal distribution), point and interval estimation, principle and application of biostatistic test procedures, correlation &, regression; epidemiological measures of morbidity, mortality and association, concept of study population parameter and sample estimate; diagnostic test validation
Educational objectives	Students will be able to question scientific work with regard to its quality and plausibility. To do this, they learn to use different epidemiological and statistical methods. Beginning with the basics of the descriptive statistics for presenting collected information they proceed to the concept of probability and its application to veterinary issues, and continue with principles and simple methods of inductive statistics and concepts for the determination of relationships and dependencies. The event will teach biometric concepts and put students in a position to understand statistical analyses and to apply basic descriptive and analytic statistics.
Performance assessment	Weekly home work and one MC exam at the end of the term

Biochemistry I	
Form of the course	Lecture (4 SWH)
ECTS	4
Responsibility	Institute of Veterinary Biochemistry (WE03)
Entry requirements	None
Course contents	Amino acids, peptides and proteins: structures and functions Protein-N-metabolism: Transamination, deamination, decarboxylation, urea cycle, proteolysis Enzymes: classification, structure and function, examples of mechanisms of catalysis, Michaelis-Menten kinetics, inhibitors, activators, allosteric enzymes, inter conversion. Carbohydrates and their metabolism: occurrence, structure and function of monosaccharides, oligo-and polysaccharides, proteoglycans, metabolism of glucose (glucose intake, glycolysis, gluconeogenesis), glycogen metabolism, metabolism of fructose and galactose, pentose phosphate pathway, carbohydrate digestion. Lipids and their metabolism: structure, occurrence and function of lipids and eicosanoids, biological membranes, asymmetry, metabolism of fatty acids (ß-oxidation, de novo synthesis, ketogenesis, ketolysis, propionate metabolism, lipolysis, lipogenesis), digestion, lipid transport, lipid analysis. Biochemistry of nutrition: digestion and absorption of nutrients in omnivores and ruminants. Biological oxidation: thermodynamics, citric acid cycle, respiratory chain (electron transport, proton translocation, ATP synthesis, decoupling, energy balance).
Performance assessment	None

Biochemistry seminar	
Form of the course	Exercise / Seminar (0,5 SWH)
ECTS	2
Responsibility	Institute of Veterinary Biochemistry (WE03)
Entry requirements	None
Course contents	Consolidation of the course contents of the lecture "Biochemistry I"
Performance assessment	oral examinations

Physiology I	
Form of the course	Lecture (4 SWH)
ECTS	4
Responsibility	Institute of Veterinary Physiology (WE02)
Entry requirements	None
Course contents	General cell physiology (functions of cellular compartments and cell membrane, diffusion, osmosis, protein-mediated transport, potential formation) General neurophysiology (emergence, conduction and integration of stimulating and inhibiting signals to neurons, reflexes) Muscle Physiology (structure, saltatory conduction and functional processes of skeletal, smooth and cardiac muscles, contraction forms, contractile force and its regulation) Physiology of the central nervous system (structure and hierarchy of the nervous system, learning, motor centres and motor processes, behavioural physiology) Physiology of vegetative nervous system (sympathetic, parasympathetic and enteric nervous system) Sensory physiology (general sensory physiology, sense of pain, touch or smell, taste buds, sense of sight, hearing, or balance) Physiology of blood and lymph (functions of blood plasma and blood cells, haematopoiesis, rheology, immune system, blood groups and blood transfusion, haemostasis and wound healing, haematologic diagnosis, anemia, lymph) Cardiovascular physiology (electrical and mechanical processes of the heart, regulation of cardiac activity, basics of heart diagnostics, organisation and physical laws of the circulation, blood pressure, pulse, blood pressure regulation, substance transfer in the terminal vessels, characteristics of the pulmonary circulation) Renal physiology (processes of urine formation, regulation of renal function, tasks and structure of the kidney, diagnostic parameters of renal function, urinary incontinence) Respiration physiology (structure and function of the lung, sub-functions of external respiration, spirometric parameters, mechanics of respiration, exchange and transport of

	respiratory gases, regulation of respiration, pulmonary clearance, pulmonary thermoregulation)
Educational objectives	Ready-to-apply knowledge of basic physiological in species important in veterinary medicine In-depth understanding of the function of excitable structures and their integrative performance In-depth understanding of the functions of blood and the cardio vascular system, as well as the importance of lung and kidney for the constant blood composition Ready-to-apply knowledge of important regulating and control mechanisms Detection and understanding of pathophysiological mechanisms and pharmacological intervention points
Performance assessment	None

Mandatory courses during the 3rd term

Anatomy II (hoofed and cloven-hoofed animals)	
Form of the course	Lecture (2 SWH)
ECTS	2
Responsibility	Institute of Veterinary Anatomy (WE01)
Entry requirements	None
Course contents	Similar course contents as in anatomy I, but with special regard to farm animals, e.g. ruminants, swine and horses. Skin, skin muscles and skin nerves. Dorsal trunk limb muscles. Ventral trunk limb muscles. Conduction systems and neck viscera. Bones and joints of the shoulder limb. Conduction systems and muscles on the upper arm. Conduction systems and muscles in the forearm. Spinal muscles, lumbar skin nerves. Muscles of respiration. Ventrolateral body wall with teats and prepuce, abdominal muscles, groin. Thoracic cavity with pleural caves and lungs. Heart and pericardium. Conduction systems of the thoracic cavity with sympathetic chain. Topography of the abdominal organs and peritoneum. Stomach and intestines with blood vessels and nerves. Intestinal accessory glands, autonomous nervous system. Pelvic cavity with peritoneum, meso and tendons of the urinary and reproductive organs, Fossa ischiorectalis. Comparing sexual organs. Pelvic girdle, bones, and joints of the pelvic limb. Conduction systems and hip joint muscles. Conduction systems and muscles in the lower leg. Skull and joints of the head, superficial blood vessels of the head, facial muscles, lacrimal apparatus, eye nerves and muscles, nose, nasal cavity, larynx, oral cavity, pharynx, all cranial nerves, arteries of the head, Diverticulum tubae auditivae, tongue, salivary glands, teeth. Spinal cord, brain and meninges. Parallel to the individual preparation topics demonstrations will take place on X-rays and on living animals (cattle, horses).
Educational objectives	Knowledge of the basic concept of structures and organ systems (such as musculoskeletal, respiratory, digestive and urogenital system) in large and small ruminants, horse and pig in close relation to the circulatory and nervous system, as well as the lymphoid and endocrine system. Ability to link topographical and systematic anatomy; interdisciplinary links (microscopic anatomy, propaedeutics, physiology). Theoretical corroboration of rectal examination; Practical relevance through constant link of applied anatomical aspects with clinically relevant topics in terms of the clinical section of the study (surgery, clinic, pathology, imaging). Understanding of comparative anatomy using the example of variations of basic appearances in the body of herbi- and omnivores.
Performance assessment	None

Anatomical preparation exercises II (hoofed and cloven-hoofed animals)	
Form of the course	Exercise (4 SWH)
ECTS	8
Responsibility	Institute of Veterinary Anatomy (WE01)
Entry requirements	Successful participation: Anatomical preparation exercises I (dog and cat)
Course contents	Skin muscles, shoulder girdle muscles. Neck: suprasternal notch with V. jugularis externa. A. carotis communis, Truncus vagosympathicus, Spatium colli with conduction systems, trachea and esophagus. Respiratory muscles, thoracic cavity, lungs, conduction systems in the mediastinum. Pericardium and heart. Abdominal wall muscle and rectus sheath, study of peritoneum and the location of the abdominal viscera, study of abdominal organs, liver, stomach, pancreas and spleen. Pelvis, inguinal rings, urinary organs, female and male sexual organs. Head: facial muscles, N. facialis, astication muscles, Nn. mandibularis, maxillaris and ophthalmicus, eye muscles and nerves. Nose and nasal cavity, paranasal sinus. Muscles of soft palate and pharynx. Diverticulum tubae auditivae, larynx: Skeleton, muscles, nerves. Brain and spinal cord.

	Preparation of the limbs: muscles, nerves, blood vessels and their terminal branches. Fascia reinforcements. Preparation of the unfixed toes. Study of the naked and unfixed hoof or claws. Parallel to the course will be demonstrations on living animals.
Educational objectives	Systematically-derived topographic preparation of the structures and organ systems listed above at preserved and fresh carcasses (horse, cattle, sheep, goat, pig). Consolidation of expertise, expanding the rhetorical skills and intensification of professional communication between students with the aid of the new educational method "peer instructing". "Peer instructing" is based on teachings by students and accompanied by instructors. Learning the topographical preparation method as preparation for the future clinical surgical activity focusing on stratigraphy. Learn orientation, based on tactile points of bone and muscle furrows, location relations and organ projection on the carcasses. Learn to protect sensitive conduction systems. Ability to independently perform the preparation carried out on the demonstration species on the other species and work out differences. Combination of topographical and systematic Anatomy; interdisciplinary links (propaedeutics, microscopic anatomy, physiology). Independent preparation of body cavities of preserved carcasses (horse, cattle, small ruminants) and comparison of the different anatomical structures to fresh carcasses (cattle, small ruminants, pig), as well as fixed organ and skeletal preparations or plastinates and polyethylene glycol (PEG)-preparations. Mesoscopic demonstrations (magnifying glass). Learn medical terminology and anatomical terms. Clinically applied anatomy through orienting palpation on live animals. Guidance for evaluation of clinically applied questions
Performance assessment	4 oral, written or practical tests during the semester

Physiology II	
Form of the course	Lecture (4 SWH)
ECTS	4
Responsibility	Institute of Veterinary Physiology (WE02)
Entry requirements	None
Course contents	Physiology of the gastrointestinal tract (function of GIT, food intake and regulation, saliva formation, swallowing act, secretion and activity of single stomach, intestinal digestion, intestinal absorption and secretion, exocrine pancreas and liver, bowel movements, defecation, fermentative digestion, absorption and acids/bases household in the rumen, flow rate of nutrients, rumen activity, characteristics of digestion in the large intestine, postresorptive use of nutrients, diarrhea) Energy balance (principles of thermodynamics, calorific values, direct and indirect calorimetry, energy-dependent processes, conversion rate, degrees of energy conversion) Thermophysiology (temperature of core and shell, homeothermia, poikilothermia, thermoregulation, fever) Water and electrolyte balance (water balance and compartmentalisation, regulation of water balance of the cell and whole organism, homeostasis of clinically important electrolytes, disorders of water and electrolyte balance) Acid-base balance (pH, pH-regulation of the cell and of the total organism, biological buffer systems, Henderson-Hasselbalch equilibrium, diagnosis of disorders) Stress physiology (sympatho-excitatory adrenomedullary system, stress, stress management strategies, hypothalamic pituitary adrenal axis) Performance physiology (especially horses and cattle) Reproduction (female sexual cycle, spermatogenesis and spermiogenesis, capacitation, fertilization, implantation and pregnancy, childbirth, lactation, egg fomation and oviposition
Educational objectives	In-depth understanding of strategies and processes of gastro-intestinal absorption of substrate and subsequent utilisation including its regulation Ready-to-apply knowledge of important homeostatic control circles in different species Identification of performance potential of sport and production animals, as well as understanding of mechanisms and limits of performance adaptation Acquire basic knowledge on reproduction and lactation physiology

	Recognize and understand pathophysiologically important mechanisms and pharmacological intervention points
Performance assessment	None

Proseminar to the practical course in physiology	
Form of the course	Seminar (0.5 SWH)
ECTS	2
Responsibility	Institute of Veterinary Physiology (WE02)
Entry requirements	According to the practical course regulations
Course contents	General cell- and neurophysiology and physiology of muscles, CNS, vegetative nervous system, cardio vascular system, kidney and gastrointestinal tract
Educational objectives	In-depth knowledge on selected physiological topics preparing for or in addition to the physiological practical course Cognition and understanding of relationships between individual physiological or pathophysiological processes; improving the combinatorial skills Knowledge of technical terms needed to describe life processes
Performance assessment	Tests

Biochemistry II	
Form of the course	Lecture (3 SWH)
ECTS	3
Responsibility	Institute of Veterinary Biochemistry (WE03)
Entry requirements	None
Course contents	Nucleic acids, gene regulation, genetic engineering: A. Structures of nucleic acids: general structure (bases, nucleosides, nucleotides), functions of nucleosides + nucleotides (energy source, group vectors, energy, signal substances), NA spatial structure, base pairing, melting curve + hybridization, running direction, polymerization, double helix, triplet code, chromosome structure, mutations (point mutation – chromosomal aberration), sex chromosomes, genetic diseases, recombination, genome structure, plasmids, RNA structure (types of RNA: mRNA, rRNA, tRNA, snRNA, miRNA), functions, nucleic acid analysis (cleaning, sequence determination) B. Gene regulation: replication: DNA polymerases (initiation, elongation, termination), overview of gene expression, gene, genome organization, antibiotics (inhibition of replication, transcription or translation) C. Transcription: prokaryotes: promoters, RNA polymerases, initiation, elongation, termination, regulation (Operon model: lac + trp), DNA-protein interaction (zinc finger, HRE), Eukaryotes: Intro/exon, post-transcriptional RNA processing, translation (only in prokaryotes): components mRNA, tRNA, ribosome, initiation, elongation, termination, polysomes, wobble hypothesis, specific detection methods for mRNA (RT-PCR, Northern blot) D. Genetic engineering: cloning techniques in bacteria + animals, problems in assisted reproduction, genetically modified organisms (GMOs), transgenic animals, detection methods for GM, PCR, benefits of genetic engineering Hormones + vitamines A. Hormones: introduction, general infomation & history of endocrinology, transmission paths & hierarchy of hormone control (feedback), hormone receptor types + signal transduction, type I-IV receptors, adenylate cyclase system, inositol-tris-phosphate system, tyrosine kinases, jak/stat-system, RAS-system, intracellular receptors, second messenger, hormone classes, organs of the endocrine system (brain, adrenal glands, gonads, pancreas), detection methods for hormones, hypothalamus-pituitary axis, releasing hormone: GnRH, TRH, GHRH, proteo/peptide hormones: glucagon, insulin (carbohydrate-/ fat metabolism, diabetes mellitus), gonadotropins FSH + LH, TSH receptor, growth hormone, prolactin, oxytocin (ACTH), Parathyroid hormone, calcitonin is only mentioned), steroid hormones (gonadal hormones: androgens, estrogens, progestins), glucocorticoids, amino acid derivatives: catecholamine (without cardiovascular physiology), thyroid hormones, melatonin, other messengers (mediators): nitrous oxide system, histamine, eicosanoids, cytokines, growth factors, summary, application and benefits, abuse (doping)

	B. Vitamins: vitamin A (other effects besides vision), water soluble vitamins C + B, vitamin D, vitamin E, vitamin K
Performance assessment	None

Biochemistry practical course	
Form of the course	Exercise / Seminar (1.5 SWH)
ECTS	4
Responsibility	Institute of Veterinary Biochemistry (WE03)
Entry requirements	Successful participation: Chemistry - practical course for veterinarians
Course contents	Practical performance of seven experiments: 1. Proteins (determination of free amino acids with Ninhydrin, determination of the activity of arginase in the liver) 2. Enzymes (electrophoretic separation of LDH-isoenzymes in agarose gel, determination of the enrichment of the enzyme lactat dehydrogenase) 3. Carbohydrates (isolation of glycogen from liver acid hydrolysate and evidence of glucose, determination of glucose 6-phospatase activity in liver extract) 4. Lipids (enzymatic determination of D-3-hydroxybutyrate in blood, enzymatic cleavage of triacylglycerides by pancreatic lipase, determination of the peroxide value) 5. Biological oxidation (extraction of mitochondria from heart muscle, measurement of the succinate dehydrogenase reaction, recording the absorption spectra of cytochrome C, examination of cytochrome-C oxidase) 6. Nucleic acids (cleaning of DNA from horse blood, enzymatic cleavage of DNA and viscosity measurements, gel electrophoresis of DNA, photometric determination of DNA concentration and purity) 7. Vitamins / hormones (characterization and separation of vitamins, evidence of hormonal regulation of blood glucose level)
Performance assessment	Practical / oral examinations

Mandatory courses during the 4th term

Anatomical seminar / Situs demonstrations II	
Form of the course	Seminar (2 SWH)
ECTS	4
Responsibility	Institute of Veterinary Anatomy (WE01)
Entry requirements	Successful participation: Anatomical preparation exercises II (hoofed and cloven-hoofed animals)
Course contents	Unfixed pigs, ruminants, horses, small pet animals, and poultry: Demonstration of organs, conduction systems and relationships of mesenteries in abdominal and pelvic cavities, as well as in the thoracic cavity. Bird I Anatomy of the bird Bird II (situs of the body cavity, respiratory and digestive tract including conduction systems) Bird III (urogenital organs) Horse I (abdominal and pelvic cavities, clinically applied focus: colic) Horse II (thoracic cavity) Pet situs (all body cavities: rodents, rabbits, ornamental birds, exotics) Pig situs (all body cavities) Situs small ruminants (all body cavities)
Educational objectives	Consolidation and extension of practical capabilities and of anatomical knowledge of the body cavities of large farm animals (cattle, horse, pig, small ruminants) and introduction to the anatomy of pets (rabbits, rodents, exotics, ornamental birds) from unfixed carcasses. Introduction to the anatomy of poultry. Representation of clinically significant structures of the body cavities and the internal organs using the examples of clinical questions. Projection of organs to the body wall. Consolidation of knowledge of comparative anatomy. Identification of functional adaptation of certain organ systems to certain living conditions of different species. Comparison of basic anatomy of mammals and birds. Acquisition of knowledge of anatomically relevant basics for the soft part surgery and simulation of standard operations. Consolidation of expertise and intensification of technical communication between students or between students and the scientific staff through so-called "competence teams".
Performance assessment	oral and practical, each student each day

Embryology	
Form of the course	Lecture (1 SWH)
ECTS	1
Responsibility	Institute of Veterinary Anatomy (WE01)
Entry requirements	None
Course contents	Organogenesis, cleavage, gastrulation, neurulation, cotyledons. Gametogenesis, capacitation, acrosome reaction. Sexual cycle comparative and including man. Regulation of expression of parental genes. Development of the placenta, implantation, placentation. Development of the heart and the blood vessels, vasculogenesis and angiogenesis. Development of the musculoskeletal system, the digestive and respiratory systems, of the urinary system, the reproductive system, skin, appendages of the skin and mamma. Development of the nervous system. Teratogenesis. Experimental embryology, in vitro fertilization, in vitro culture of embryos, embryo transfer, cloning, stem cells, transgenic animals.
Educational objectives	Development of essential principles of developmental biology and embryology, including medical and experimental embryology, e.g. differentiation and determination, epithelial and mesenchymal interactions, role of growth factors, signal molecules and cell adhesion molecules, proliferation and apoptosis, embryonic induction and cell migration. Basic aspects of morphogenesis and teratology.
Performance assessment	None

Histology II (microscopic anatomy II)	
Form of the course	Lecture (1 SWH)
ECTS	1
Responsibility	Institute of Veterinary Anatomy (WE01)
Entry requirements	None
Course contents	Digestive system: foregut: oral cavity, tongue, teeth, salivary glands, pharynx, Mid- and hindgut: esophagus, stomach, duodenum, jejunum, caecum, colon, rectum, anus, anal bag. Intestinal appendage glands: liver and gallbladder, pancreas and islet system. Respiratory system: nasal cavity, larynx, trachea, lungs. Urinary system: kidney, efferent urinary tract. Male sexual organs: testis and epididymis, sperm, spermatic cord, prostate. Female reproductive organs: ovary, fallopian tube, uterus at various stages of the cycle. Endocrine organs. CNS Sensory organs.
Educational objectives	Microscopic anatomy of digestive, respiratory, urogenital and nervous system and the organs of perception, each functionally related. Producing connections to clinical situations or cases and integration of various fields of knowledge.
Performance assessment	None

Histology II (microscopic anatomy II) and embryology	
Form of the course	Exercise (2 SWH)
ECTS	4
Responsibility	Institute of Veterinary Anatomy (WE01)
Entry requirements	Successful participation: General and special histology I
Course contents	Digestive system: Lip, tongue, teeth, salivary glands, esophagus, rumen, stomach, small intestine, large intestine, anus, anal bag, liver, pancreas. Respiratory system: trachea, lung. Urinary system: kidney, ureter. Male sexual organs: testis and epididymis, sperm, spermatic cord, prostate. Female reproductive organs: ovary, fallopian tube, uterus at various stages of the cycle. Histology of the embryo: gastrulation, gill intestine, kidney development, placentation, umbilical cord, age estimation of fetuses. Endocrine organs. CNS Sensory organs.
Educational objectives	Independent microscopic diagnostics of all organs of farm animals and poultry as listed under “course contents”, and the most important structures during embryonic development and the placenta. Consolidation of knowledge regarding the histological and microscopic diagnosis of the respective course preparations. Basic knowledge of the distinction between physiologically and pathologically modified tissue. Maximizing the expertise through peer instructing (= of the instructors accompanied and supported teaching through students). Intensification of technical communication between students or between students and instructor.
Performance assessment	Written or practical test at the end of the term

Clinical Biochemistry	
Form of the course	Lecture (1 SWS)
ECTS	1
Responsibilty	Institute of Veterinary Biochemistry (WE03)
Entry requirements	None
Course content	Selected biochemical and physiological topics of clinical relevance are presented in close interaction by colleagues from Biochemistry, Physiology and the animal clinics. Specific emphasis is given to topics related to clinical laboratory diagnostics.
Educational objectives	Students are familiar with the relevant biochemical and physiological processes that affect clinical laboratory results
Performance assessement	None

Clinical Physology (Physiology III)	
Form of the course	Lecture (1 SWS)
ECTS	1
Responsibilty	Institute of Veterinary Physiology (WE02)
Entry requirements	None
Course content	Selected biochemical and physiological topics of clinical relevance are presented in close interaction by colleagues from Biochemistry, Physiology and the animal clinics. Specific emphasis is given to topics related to clinical laboratory diagnostics.
Educational objectives	Students are familiar with the relevant biochemical and physiological processes that affect clinical laboratory results
Performance assessement	None

Physiology practical course	
Form of the course	Exercise (2.5 SWH)
ECTS	5
Responsibility	Institute of Verterinary Physiology (WE02)
Entry requirements	According to the practical course regulations
Course contents	• Impulse formation andconduction • Function of skeletal and smooth muscle • Epithelial transport processes • Function of the sensory organs, objective and subjective sensory physiology • Red and white blood cell count, blood coagulation and blood group diagnosis • Electrocardiography and blood pressure measurement • Respiratory gas and blood gas analysis, spirometry • Metabolic rate • Forestomach function of the ruminants
Educational objectives	Consolidation of course contents mediated in the lectures and previous seminars. Acquire ready-to-use knowledge about important experimental methods of physiology and selected methods of laboratory and clinical diagnostics Ready-to-use knowledge of the magnitude of clinically relevant physiological dimensions Practise of skill in dealing with laboratory animals, laboratory equipment and computer-based evaluation procedures
Performance assessment	Tests at the beginning and the end of each day

Animal feed exercises	
Form of the course	Lecture / Exercise (2 SWH)
ECTS	4
Responsibility	Institute of Animal Nutrition (WE04)
Entry requirements	None
Course contents	General principles of animal nutrition: main nutrients: occurrence, properties, function; nutrient digestibility, energy evaluation; evaluation of protein, minerals and vitamins: occurrence and function. Presentation of main feed groups (grains and seeds, feeds of animal origin, green fodder and cereals, by-products of the fermentation and sugar industry and the fruit processing, feed supplements and feed additives) relating to value-determining ingredients, properties and anti-nutritive substances and their suitability for monogastric animals and ruminants. Feed preservation, feed spoilage, feed technology, feed law and safety, feed microscopy.
Educational objectives	Knowledge about the suitability of feed groups, including their processing, preservation and storage for performance and health-oriented feeding; knowledge of the legal framework and common laboratory procedures for the evaluation of feeds
Performance assessment	2 tests (basics of animal nutrition, animal feeds)

Animal welfare and protection seminar	
Form of the course	Exercise (2 SWH)
ECTS	4
Responsibility	Institute of Animal Welfare and Behavior (WE11)
Entry requirements	None
Course contents	10 to 12 anonymised animal welfare cases from veterinary offices. In group work, students develop strategies to deal with a series of frequently encountered offences against the law of animal welfare. The results will be presented by Students during the seminar and discussed with official veterinarians.
Educational objectives	Students increase their knowledge of the animal protection law and gain first skills in the official veterinarian animal welfare enforcement.
Performance assessment	Short presentation (random sample)

Interdisciplinary lectures on „Professional skills“ in 1.-4. term	
Form of course	Lecture (4 SWS)
ECTS	4
Responsibility	Various institutions, coordinated by associate dean for education / study office
Entry requirements	None
Course content	Soft skills relevant for the respective study period such as study organisation, communication, learning strageties, stress mitigation, exam preparation, economics etc.
Educaional objectives	Defined in the individual modules
Performance assessment	None

Course offer and syllabus during the clinical study period

Times are provided in semester week hours (SWH; 14 lecture hours per SWH) and in repective ECTS credits.

Mandatory courses during the 5th term

Animal nutrition	
Form of the course	Lecture (2 SWH)
ECTS	2
Responsibility	Institute of Animal Nutrition (WE 04)
Entry requirements	None
Course contents	General principles of animal nutrition: main nutrients: occurrence, properties, function; feed intake and regulation; nutrient digestibility and determination methods; energy conversion and evaluation systems; evaluation of protein and fulfillment of amino acid demand, protein deficiency and surplus; minerals and vitamins: occurrence and function, availability, deficiency diseases, toxicity. Effect of feed additives; Basics of nutrition of ruminants, pigs, horses, poultry, cats, dogs, ornamental birds and small pets. Mycotoxins in feeds, feed spoilage, influence of feeding on the food quality and safety.
Educational objectives	Knowledge of the metabolism of the feed ingredients, taking into account biochemical, pathobiochemical and nutritious characteristics; knowledge of nutrition- and health-related correlations; competence in the deduction of feeding strategies for farm animals and pets, as well as basic knowledge in terms of influences of feeds and feeding on food safety.
Performance assessment	None

Animal nutrition – practical course	
Form of the course	Exercise (2 SWH)
ECTS	2
Responsibility	Institute of Animal Nutrition (WE 04)
Entry requirements	None
Course contents	Aspects of practical feeding of sows, piglets, porker, laying hens and fattened poultry, calves, heifers, cows and fattening bulls as well as dogs, cats, ornamental birds and small pet animals; determination of requirements, selection of appropriate feeds, calculation and evaluation of rations, dietetic measures in metabolic disorders and convalescent animals
Educational objectives	Knowledge to the ration for farm animals and pets, particularly with regard to high-performance and environmentally friendly aspects of livestock; fundamentals of dietetics for the treatment of food-associated diseases.
Performance assessment	5 tests (livestock-friendly feeding of ruminant, horse, pig, dog, cat and pet animal)

General and special virology I	
Form of the course	Lecture (2 SWH)
ECTS	2
Responsibility	Institute of Virology (WE05)
Entry requirements	None
Course contents	Structure, properties, taxonomy, replication strategies, virus genetics, virus-cell interaction, transmission routes, immune response to viral infections, vaccination, laboratory diagnostics, introduction to the virus families and their most important representatives and virus diseases of animals.
Educational objectives	Teaching of basic knowledge of virology
Performance assessment	None

General lecture on infections and epizootics	
Form of the course	Lecture (2 SWH)
ECTS	2
Responsibility	Institute of Microbiology and Epizootics (WE07)
Entry requirements	None
Course contents	Basics of infectious diseases and epidemics, definitions, ecosystem, cause-effect relationships, evolution of pathogen-host relationships Positive guest-host relations, model diseases Pathogenesis, clinically inapparent infections, Infectious diseases Structure of bacteria, genetics

	Metabolism, cultivation, microscopy, isolation, detection, identification, classification, taxonomy Virulence mechanisms including pathogenicity islands Chemotherapy and resistance General mycology (structure, taxonomy, propagation, virulence mechanisms, isolation, identification) Etiology, pathogenesis, clinic, therapy of veterinary-relevant infectious diseases caused by fungi
Educational objectives	Explain different pathogen-host relationships Explain the pathogenesis of infectious diseases Explain the structure of bacteria and fungi Explain mechanisms of virulence of microorganisms Explain how to use anti-infectives wisely and how resistances develop
Performance assessment	MC-test / oral examination

Animal and environmental hygiene	
Form of the course	Lecture (2 SWH)
ECTS	2
Responsibility	Institute of Animal and Environmental Hygiene (WE10)
Entry requirements	None
Course contents	Basics of animal hygiene, definitions, ecosystem, animal-environment interactions, legal basics Stable construction, ventilation, stable climate, manure removal procedure Emissions (contaminated air, faeces), emission reduction Drinking water for humans and animals, waste water treatment Infection prophylaxis (cleaning, pest control, disinfection, sterilization) Disposal of animal by-products
Educational objectives	• Explain animal-environment interactions • Assess stable climate and emissions from animal farming • Carry out measures for the prevention of infections and evaluate
Performance assessment	None

Animal husbandry	
Form of the course	Lecture (2 SWH)
ECTS	2
Responsibility	Institute of Animal and Environmental Hygiene (WE10)
Entry requirements	None
Course contents	Basics of animal husbandry, physiological basics, ethological basics, legal basics Farming of pigs, cattle (including calves), poultry (laying hens, fattened poultry, water fowl), small ruminants; horses, keeping of small animal and pets, ecological animal husbandry
Educational objectives	Assess keeping of animals Identify animal welfare problems Know alternative farming systems
Performance assessment	None

General pathology	
Form of the course	Lecture / Practice / Seminar (4 SWH)
ECTS	4
Responsibility	Institute of Animal Pathology (WE12)
Entry requirements	None
Course contents	Overview of pathological conditions and processes in the entire organism including their definition and specific nomenclature.
Educational objectives	General principles of disease principles and mechanisms and classification of pathological processes in the whole organism.
Performance assessment	Written tests during the term, practical and oral examination

Parasitology	
Form of the course	Lecture (3 SWH)
ECTS	3
Responsibility	Institute of Parasitology and Tropical Veterinary Medicine (WE13)
Entry requirements	None
Course contents	General parasitology: parasites, parasitism, harmful effect, immune reaction. Special parasitology: helminthology, protozoology, entomology; morphology, biology and therapy of trematodes, cestodes and nematodes, as well as flagellates, Sporozoa, Piroplasmida and parasitic arthropods
Educational objectives	Knowledge on general aspects of parasitology and endo- and ectoparasites of veterinary importance and the diseases caused by them, taking into account the zoonoses, including their epidemiology and control
Performance assessment	None

General pharmacology and toxicology	
Form of the course	Lecture (4 SWH)
ECTS	4
Responsibility	Institute of Pharmacology and Toxicology (WE14)
Entry requirements	None
Course contents	Drug and medicinal properties: pKa value, molecular weight, forms of isomerism, binding properties, receptor effects and inner pathways, methods and modes of application, dose and dose-effect relationships, side effect and toxicity, drug kinetics, absorption types and sites of drugs and influencing factors, protein binding and drug distribution, compartments, elimination of active substances: excretion, bio transformation forms and influencing factors, possible consequences of repeated drug administration (tolerance, resistance and dependency, allergy development, cumulation etc), pharmacogenetics (species differences in drug reaction).
Performance assessment	None

General and clinical radiology I	
Form of the course	Lecture (1 SWS)
ECTS	1
Responsibility	Equine Clinic (WE17)
Entry requirements	None
Course content	Basic radiology and radiation protection, relevant German legislation (RöV, StrSchV) Diagnostic imaging with artefacts, traditional and digital imaging techniques, basics of sonography, CT, MRI, scintigraphy, arthroscopy, laparascopy Diagnostic imaging in small animals (thorax, abdomen, bones and joints Diagnostic imaging in horses: hoof, joints, head, tendons
Educational objectives	Theoretics knowledge required for the postgradual diagnostic imaging certificate
Performance assessement	None

General surgery	
Form of the course	Lecture (2 SWH)
ECTS	2
Responsibility	Small Animal Clinic (WE20)
Entry requirements	None
Course contents	Wounds (wound healing, wound care, wound management in small animals and horses) Muscle and tendon diseases / injuries Bone and cartilage diseases: stunted growth (dysplasia, e.g. of hip and elbow, patella luxation, Legg-Calvé-Perthes disease) Bone inflammation (not infectious / infectious): hypertrophic osteodystrophy, periostitis, panostitis; osteomyelitis Arthritis / osteoarthritis Joint injury in the horse Fractures (origin, classification, healing; fracture treatment in small animals and horses, fracture healing disorders) Epiphyseal damage (small animals, horses)
Educational objectives	Students will learn the theoretical basics of general surgery.
Performance assessment	None

Clinical propaedeutics – Horse	
Form of the course	Exercise (2 SWH)
ECTS	2
Responsibility	Equine Clinic (WE17)
Entry requirements	None
Course contents	Dealing with horses, coercive measures, description, general examination, special examinations of the organ systems: orthopaedic examination, examination of the upper and lower respiratory tract, the digestive system and heart and circulation, neurological examination, examination of the urinary tract, gynecological and andrological examination. Practical exercises in small groups.
Educational objectives	Students learn the theoretical basics of tropaedeutic. They should be able to carry out a general clinical examination and simple special examinations of organ systems and interpret the findings.
Performance assessment	Oral / practical examination

Clinical propaedeutics – Cloven-hoofed animal	
Form of the course	Exercise (2 SWH)
ECTS	2
Responsibility	Ruminant and Swine Clinic (WE 18)
Entry requirements	None
Course contents	Theory and practice of clinical examination for ruminants and pigs, practice-relevant treatment methods, handling including coercive measures.
Educational objectives	Students are able to correctly execute the complete clinical examination of ruminants and pigs. They know the most important normal and deviant examination findings and master the terminology as part of the clinical diagnostic report.
Performance assessment	Practical examination on animal

Clinical propaedeutics – Reproduction	
Form of the course	Exercise (1 SWH)
ECTS	1
Responsibility	Animal Reproduction Clinic (WE19)
Entry requirements	None
Course contents	Special investigation techniques in gynecology, obstetrics, herd health care, andrology and neonatology and on the teats of different species.
Educational objectives	Students know the special reproductive medical examination techniques and procedures in theory and practice. Students can perform the examinations and interpret the findings.
Performance assessment	Oral / practical examination

Clinical propaedeutics – Small animals and pets	
Form of the course	Exercise (2 SWH)
ECTS	2
Responsibility	Small Animal Clinic (WE20)
Entry requirements	None
Course contents	Application of previously discussed theoretical knowledge under guidance in small groups. Topics: handling the animal, general examination, coercive measures, palpation of lymph nodes, heart/cardiovascular examination, taking of a blood sample/injection techniques, examination of the eyes, skin, ears, oral cavity, respiratory, urinary and gastrointestinal tract; neurological examination, diagnosis of lameness, dressings and bandages; examination of small pets
Educational objectives	Students learn the theoretical basics of propaedeutic. They should be able to carry out a full clinical general examination including special examinations of small animals and pets and interpret the findings.
Performance assessment	Medical report

General immunology	
Form of the course	Lecture (1 SWH)
ECTS	1
Responsibility	Institute of Immunology and Molecular Biology (WE06)
Entry requirements	None
Course contents	Cells of the immune system; innate immune responses; complement; adaptive immune responses; B cells; antibodies; T cells, their maturation, activation, receptors, and subpopulations; cytokines; MHC molecules; immune tolerance, autoimmunity; immunopathology; infection defense; evolution
Educational objectives	Basic understanding of innate and adaptive immune responses
Performance assessment	MC test

Mandatory courses during the 6th term

Special pharmacology and toxicology	
Form of the course	Lecture (2 SWH)
ECTS	2
Responsibility	Institute of Pharmacology and Toxicology (WE14)
Entry requirements	None
Course contents	To be completed
Educational objectives	To be completed
Performance assessment	None

General and special virology II	
Form of the course	Lecture (2 SWH)
ECTS	2
Responsibility	Institute of Virology (WE05)
Entry requirements	None
Course contents	Structure, properties, taxonomy, replication strategies, virus genetics, virus-cell interaction, transmission routes, immune response to viral infections, vaccination, laboratory diagnostics, introduction to the virus families and their most important representatives and virus diseases of animals.
Educational objectives	Teaching of basic knowledge of virology
Performance assessment	None

Virology - Practical course	
Form of the course	Exercise (1 SWH)
ECTS	1
Responsibility	Institute of Virology (WE05)
Entry requirements	None
Course contents	To be completed
Educational objectives	To be completed
Performance assessment	Admission test

Microbiology – Practical course	
Form of the course	Exercise (2 SWH)
ECTS	2
Responsibility	Institute of Microbiology and Epizootics (WE07)
Entry requirements	None
Course contents	Learn how to deal with infectious samples Learn simple conventional and molecular methods of bacteriological and mycological infection diagnostic Learn techniques necessary when working with infectious agents Infectiological case descriptions, different strategies for the diagnosis of various pathogens of veterinary importance
Educational objectives	Students can: competently assess the sampling and transport of infectious material deal safely with pathogenic micro-organisms diagnose infectious agents (bacteria, fungi) of veterinary importance
Performance assessment	Practical Examination

Bacteriology and mycology	
Form of the course	Lecture (1 SWH)
ECTS	1
Responsibility	Institute of Microbiology and Epizootics (WE 07)
Entry requirements	None
Course contents	**Module 3:** E. coli-enteropathies, Campylobacter spp., Salmonella enterica, Brachyspira spp., Lawsonia intracellularis, Clostridium perfringens - **Module 5:** Uropathogene E. coli, Corynebacterium renale - **Module 7:** Pasteurella spp., Bordetella spp., Streptococcus equi; Chlamydophila spp., Mycoplasma spp., Actinobacillus spp. - **Module 11:** C. botulinum, C. tetani, S. suis - **Module 14:** relevant mastitis pathogens: i. a. Streptococcus spp.,

	Arcanobacterium (Trueperella) pyogenes; - **Module 15:** Staphylococcus spp. (incl. MRS, ESBL nosocomial infections), Erysipelothrix rhusiopathiae; - **Module 16:** Borrelia spp., Leptospira spp.
Educational objectives	Students can... • classify pathogens taxonomically, explain pathogen characteristics • explain the pathogenesis of infectious diseases • explain the pathology of infectious diseases • define the habitats of the pathogen • explain relevant diagnostic methods • recommend specific therapy and prophylaxis • explain infection-epidemiological aspects of the infectious disease (reservoirs, prevalences, transmission routes etc.)
Performance assessment	None

General food science	
Form of the course	Lecture (1 SWH)
ECTS	1
Responsibility	Institute of Food safety and Hygiene (WE08)
Entry requirements	None
Course contents	• Introduction of the topic of food hygiene, • Continuation of the subject of "bacteriology, mycology and virology", • Preparation for the exercises in "food analysis and technology" • Residues/contaminants in food • Chemical analysis of foods
Educational objectives	Students can... explain the principles of food safety explain the basics of food microbiology (influences on survival, death and proliferation of micro-organisms) provide an overview to the damage to health caused by foods explain the basics of spoilage of foods
Performance assessment	None

Milkhygiene	
Form of the course	Lecture (2 SWH)
ECTS	2
Responsibility	Institute of Food safety and Hygiene (WE08)
Entry requirements	None
Course contents	Hygiene of milk production, in particular dairy equipment and milking hygiene, industrial hygiene, Transport of milk to be delivered, production of drinking milk and milk products (curdled milk products, milk powder, cheese, butter, mixed milk products Microbiology of milk and milk products, in particular starter cultures, Probiotics, spoilage agents and pathogens, dairy legislation
Educational objectives	Students can... explain the national and international relevance of milk and milk products for human consumption and the economic significance of the dairy industry explain the creation of the ingredients of milk of the main species and define standard values explain heat treatment explain the main milk ingredients and evaluate in terms of the physico-chemical, technological and nutritional characteristics of milk discuss the production of high quality and hygienic raw milk and explain the relevant laws
Performance assessment	None

Meat Hygiene I	
Form of the course	Lecture (2 SWH)
ECTS	2
Responsibility	Institute of Food safety and Hygiene (WE08)
Entry requirements	None
Course contents	Overview of the vertical and horizontal processes in the food chain
Educational objectives	To recognize the cross linking far above the animal and the herd
Performance assessment	None

Parasitological exercises	
Form of the course	Exercise (2 SWH)
ECTS	2
Responsibility	Institute of Parasitology and Tropical Veterinary Medicine (WE13)
Entry requirements	None
Course contents	Analytical methods for the detection of parasitic stages in farm animals and pets; differentiation of larvae of pathogenic nematodes; staining techniques for the detection of blood and tissue parasites; microscopic and macroscopic differentiation of parasitic forms of arthropods
Educational objectives	Practical experience in the detection and identification of parasites and their developmental stages of high veterinary importance
Performance assessment	Practical examination on the last day of the exercises

Clinical demonstrations I – Horses	
Form of the course	Exercise (2 SWH)
ECTS	2
Responsibility	Equine Clinic (WE17)
Entry requirements	None
Course contents	Interactive case presentations from the area of orthopaedics/surgery, internal medicine, and reproductive medicine with subsequent discussion
Educational objectives	Application and consolidation of the knowledge gained in the modular and cross-section lectures regarding diseases in the horse and presentation of defined clinical pictures with demonstration of special examination and treatment Problem-oriented case analysis (anamnesis and clinical examination, list of medical conditions, differential diagnosis, diagnostic plan, evaluation of findings, creation of a therapy plan, prognostic assessment, efficiency)
Performance assessment	Medical report on a patient, powerpoint presentation

Clinical demonstrations I – Cloven-hoofed animals	
Form of the course	Exercise (1 SWH)
ECTS	1
Responsibility	Ruminant and Swine Clinic (WE18)
Entry requirements	None
Course contents	Demonstration of clinic patients (ruminants, pigs) with internal and surgical diseases, reproductive disorders (pig), and case studies of diseases affecting whole herds
Educational objectives	Students are able to create a list of differential diagnoses for a sick animal (ruminant or swine) based on the results of the clinical examination. They can name further examination methods for diagnostics, they can give a prognosis taking into account economic aspects and they can formulate a therapy plan or supply prevention measures for food-producing animals.
Performance assessment	Practical examination on animal

Clinical demonstrations I – Reproduction	
Form of the course	Exercise (1 SWH)
ECTS	1
Responsibility	Animal Reproduction Clinic (WE19)
Entry requirements	None
Course contents	Presentation, examination and review of patient and demonstration animals (ruminants, horses, dogs, cats, pets) regarding: -gynaecological, obstetric, andrological and neonatal issues, -introduction and execution of special examination techniques and methods of treatment including surgery (i.a. performing of caesareans, teat operations, castration), as well as biotechnological methods. Presentation, examination and review of animals regarding breed fitness and udder health.
Educational objectives	Students can apply special examination techniques and methods of treatment regarding reproduction of male and female animals of different species.
Performance assessment	Medical report on a patient, a clinical problem or a herd situation

Clinical demonstrations I – Small animals and pets	
Form of the course	Exercise (2 SWH)
ECTS	2
Responsibility	Small Animal Clinic (WE20)
Entry requirements	None
Course contents	Presentation and interactive review of clinic patients (dogs, cats, pets, birds, reptiles) with internal medical, dermatological, oncological, neurological, surgical and ophthalmological diseases; problem-oriented case analysis; compiling of problem-oriented medical reports
Educational objectives	Students will learn from a variety of clinical cases problem-oriented case analysis including medical history and clinical examination (anamnesis and clinical examination, list of medical conditions, differential diagnoses, diagnostic plan, evaluation of the findings, creation of therapy plan, prognostic assessment)
Performance assessment	Medical report

Laboratory course	
Form of the course	Exercise (2 SWH)
ECTS	2
Responsibility	Small Animal Clinic (WE20), Ruminant an Swine Clinic (WE 18), Equine Clinic (WE 17)
Entry requirements	None
Course contents	During this course, theoretical and practical basics of the most important laboratory examinations of small and pet animals, birds, reptiles and horses and farm animals are being taught. Special contents: Preanalytics, accuracy control, precision, sensitivity, specificity; Diagnosis of disorders of the primary and secondary haemostasis; Haematology (micro haematocrit, blood smears - preparation and interpretation, reticulocytes; leucocytes); Serum proteins (incl. electrophoresis); lipids; Analysis of cerebrospinal fluid and synovia; Analysis of the effusions into body cavities; Diagnosis of kidney or liver disease; urine examination in small animals and horses; Endocrine pancreas (hypo- and hyperglycemia;) determination of Glc); Cytology; acid-base homeostasis; Laboratory diagnostical particularities in pets; Laboratory diagnostics in livestock medicine; diagnosis of rumen fluid; Trachealwash in a horse; quick tests in the veterinary medicine
Educational objectives	Students should: know the possible sources of error in the identification and interpretation of laboratory parameters; know the most important laboratory methods and parameters of small and pet animals, birds, reptiles and horses and farm animals and be able to interpret the results and carry out simple laboratory methods independently
Performance assessment	None

Mandatory courses during the 7th term

Animal disease control I	
Form of the course	Lecture (1 SWH)
ECTS	1
Responsibility	Institute of Microbiology and Epizootics (WE07)
Entry requirements	None
Course contents	• Objectives, strategies and methods of epizootic control in Germany • Introduction, structure, and function of the Veterinary Administration (Germany) • Law on epizootic diseases (objective, definitions) • Law on epizootic diseases (notifiable and compulsorily notifiable diseases, measures against the general risk of animal diseases) • Suspected outbreak of an epizootic disease, confirmation of an outbreak, detecting animal disease outbreaks • Protected areas, closed areas, control zones in case of an outbreak of epizootic diseases • Jurisdiction of animal disease control in Germany / role of the federal authorities in the epizootics control and prevention • Law on epizootic diseases (provisions against the exceptional danger of epizootics, empowerment paragraphs) • Compensation / animal disease funds • Protection against animal diseases in import, export, transit • Data collection in connection with animal disease control (TRACES / TSN) • Animal identification / HIT database • Animal vaccines • European legislation (institutions, legislative procedures, legal norms, animal health strategy) • Basics of infection epidemiology
Educational objectives	Students can: • explain objectives, strategies, and methods of animal disease control • reflect and explain the terms of the relevant veterinary directives (law on epizootic diseases, livestock movement order, animal vaccine order, pig husbandry hygiene order) • identify national and supra-national databases and data collections in line with animal disease control and explain their functions • identify national and supranational institutions and bodies in line with animal disease control and explain their functions • evaluate research and control of epizootics in animal populations on the basis of infection-epidemiological key figures
Performance assessment	None

Meat Hygiene II	
Form of the course	Lecture (1 SWH)
ECTS	1
Responsibility	Institute of Food Safety and Hygiene (WE08)
Entry requirements	None
Course contents	Installations and technical options to control and secure the food chain
Educational objectives	Understand the significance of health implications
Performance assessment	None

Food technology and hygiene I	
Form of the course	Lecture (2 SWH)
ECTS	2
Responsibility	Institute of Food Safety and Hygiene (WE08)
Entry requirements	None
Course contents	
Educational objectives	• Consolidation of the subject of food hygiene at the level of food production (products of animal origin) and the placing on the market • Mediation of the tasks of the official veterinarian in the area of food hygiene • Mediation of legal regulations regarding the official examinations and the placing of food of animal origin on the market

	• Students can... • · provide an overview to the horizontal and vertical meat and food hygiene regulations (EU regulations and national legal requirements) • explain ways of preservation (production and storage) of foodstuffs of animal origin • provide an overview to the food science (definitions, classification and systematics) of food of animal origin • explain the classical and modern procedures in product manufacturing (including novel/functional food and GMOs), and explain the legal requirements • provide durability criteria of foodstuffs of animal origin • present possible adverse influences (including microbiology, residues and storage pests) and the legal requirements • provide principles and legal requirements concerning the official control of foodstuffs • explain the principles and legal requirements regarding the placing of products on the market
Performance assessment	None

Food science – Practical course I	
Form of the course	Exercise (2 SWH)
ECTS	2
Responsibility	Institute of Food Safety and Hygiene (WE08)
Entry requirements	None
Course contents	General and special investigations on the subject • Fish and fish products • Residues in food • Microbiology I, II and III • Histology • Sensory properties I and II • Sensory examination of dairy products
Educational objectives	Under guidance, students can perform the official foodstuff examination (incl. sensory, chemical, physical, bacteriological and histological examinations) independently
Performance assessment	Case study during the semester

Milk analysis – Practical course	
Form of the course	Exercise (2 SWH)
ECTS	2
Responsibility	Institute of Food Safety and Hygiene (WE08)
Entry requirements	None
Course contents	Discussing specific aspects of milk hygiene and demonstration or performance of practical exercises. Milk sampling, cell number determination, bacteriological examination of quarter milk samples, inhibitor testing, physical quality parameters, detection of heat treatment, casein precipitating, starter cultures, colony counting methods in milk, detection of pathogens from milk and milk products
Educational objectives	Students can... • describe the principle of examining raw milk as specified in the milk quality testing and explain reasons for deviations from standard values • explain influencing factors at sampling, as well as cytological and bacteriological findings relating to subclinical mastitis and explain the characteristics of important pathogens with regard to industrial hygiene • describe methods for the determination of physic-chemical quality parameters of milk and milk products and interpret the findings in terms of the reference values • describe method principles for the production of milk products and identify causes for problems in milk processing • recognize important tools for the microbiological examination of milk products and interpret typical findings, including sensory properties
Performance assessment	Examination of a milk sample and writing of a report

Pathologic-anatomical demonstrations I	
Form of the course	Exercise (1 SWH)
ECTS	1
Responsibility	Institute of Animal Pathology (WE12)
Entry requirements	None
Course contents	Guided group discussion of organ changes with the help of material from routine operation of the Institute and archive material.
Educational objectives	Establishing pathologic-anatomical diagnoses and differential diagnoses and epi-critical evaluation of the etiology and relevance with regard to the clinic.
Performance assessment	Oral tests during the term

Pharmaceutical and narcotics law / drug regulation and application	
Form of the course	Lecture / Exercise (2 SWH)
ECTS	2
Responsibility	Institute of Pharmacology and Toxicology (WE14)
Entry requirements	None
Course contents	Dispense law and framework provisions, as well as narcotics, food and animal health regulations; national and EU law; provisions on consumer protection
Educational objectives	Comment the relevant legal provisions to the application, prescription, discharge and production of various categories of medicinal products, summarize and explain with the help of examples
Performance assessment	Oral examination

Galenics - Practical course	
Form of the course	Exercise (1 SWH)
ECTS	1
Responsibility	Institute of Pharmacology and Toxicology (WE14)
Entry requirements	None
Course contents	Importance of pharmaceutical technology; legal basics; drug quality; labelling; price calculation; various pharmaceutical forms
Educational objectives	Manufacture of various pharmaceutical forms
Performance assessment	Practical and oral examination

General and clinical radiology II	
Form of the course	Lecture (2 SWH)
ECTS	2
Responsibility	Equine Clinic (WE17)
Entry requirements	None
Course contents	General Radiology and radiation protection Radiation protection ordinance (RöV, StrSchV) Radiotechnology, X-ray artifacts Digital versus analog X-ray Basics of sonography, CT, MRI, scintigraphy, arthroscopy, laparaskopy Imaging diagnostics of the small animal: thorax, abdomen, bones, joints, ... Imaging diagnostics of the horse: hoof, head, joints, tendons, ...
Educational objectives	Theoretical knowledge as a prerequisite for the acquisition of the technical qualification after successful approbation.
Performance assessment	None

Clinical demonstrations II – Horses	
Form of the course	Exercise (2 SWH)
ECTS	2
Responsibility	Equine Clinic (WE17)
Entry requirements	None
Course contents	Interactive case presentations from the area of orthopaedics/surgery, internal medicine, and reproductive medicine with subsequent discussion
Educational objectives	Application and consolidation of the knowledge gained in the modular and cross-section lectures regarding diseases in the horse and presentation of defined clinical pictures with demonstration of special examination and treatment Problem-oriented case analysis (anamnesis and clinical examination, list of medical conditions, differential diagnosis, diagnostic plan, evaluation of findings, creation of a therapy plan, prognostic assessment, efficiency)
Performance assessment	Medical report of a patient, powerpoint presentation

Clinical demonstrations II – Cloven-hoofed animals	
Form of the course	Exercise (1 SWH)
ECTS	1
Responsibility	Ruminant and Swine Clinic (WE18)
Entry requirements	None
Course contents	Demonstration of clinic patients (ruminants, pigs) with internal and surgical diseases, reproductive disorders (pig), and case studies of diseases affecting whole herds
Educational objectives	Students are able to create a list of differential diagnoses for a sick animal (ruminant or swine) based on the results of the clinical examination. They can name further examination methods for diagnostics, they can give a prognosis taking into account economic aspects and they can formulate a therapy plan or supply prevention measures for food-producing animals.
Performance assessment	Practical examination on animal

Clinical demonstrations II – Reproduction	
Form of the course	Exercise (1 SWH)
ECTS	1
Responsibility	Animal Reproduction Clinic (WE19)
Entry requirements	None
Course contents	Presentation, examination and review of patient and demonstration animals (ruminants, horses, dogs, cats, pets) regarding: -gynaecological, obstetric, andrological and neonatal issues, -introduction and execution of special examination techniques and methods of treatment including surgery (e.g. performing of caesareans, teat operations, castration), as well as biotechnological methods. Presentation, examination and review of animals regarding breed fitness and udder health.
Educational objectives	Students can apply special examination techniques and methods of treatment regarding reproduction of male and female animals of different species.
Performance assessment	Medical report on a patient, a clinical problem or a herd situation

Clinical demonstrations II – Small animals and pets	
Form of the course	Exercise (2 SWH)
ECTS	2
Responsibility	Small Animal Clinic (WE20)
Entry requirements	None
Course contents	Presentation and interactive review of clinic patients (dogs, cats, pets, birds, reptiles) with internal medical, dermatological, oncological, neurological, surgical and ophthalmological diseases; problem-oriented case analysis; compiling of problem-oriented medical reports
Educational objectives	Students will learn from a variety of clinical cases problem-oriented case analysis including medical history and clinical examination (anamnesis and clinical examination, list of medical conditions, differential diagnoses, diagnostic plan, evaluation of the findings, creation of therapy plan, prognostic assessment)
Performance assessment	Medical report

Surgery and anesthesia	
Form of the course	Lecture (1 SWH)
ECTS	1
Responsibility	Small Animal Clinic (WE20)
Entry requirements	None
Course contents	Asepsis and antiseptics in the operating theatre; injections and punctures in small animals and horses; sedation; equine anesthetic; injection and inhalation anesthetic in the small animal; surgical instruments; wound dressing; suture materials and suturing techniques; joint surgery in small animals and horses
Educational objectives	Basic knowledge of sterility, instruments, suture materials and suturing techniques; knowledge of anesthesia in small animals and horses; special procedures (punctures, joint surgery)
Performance assessment	Oral examination (surgery)

Mandatory courses during the 8th term

Animal disease control and infection epidemiology II	
Form of the course	Lecture (2 SWH)
ECTS	2
Responsibility	Institute of Microbiology and Epizootics (WE07)
Entry requirements	None
Course contents	• Legal basics, strategies and preventive measures in the control of relevant notifiable and obligatory notifiable animal diseases in Germany (taking EU directives / international regulations into consideration, if applicable) • Etiology, pathogenesis, infection epidemiology (risk of exposure), diagnostics of relevant notifiable and obligatory notifiable epizootics
Educational objectives	Students can... • name notifiable and obligatory notifiable animal diseases • explain content and objective of regulations which have been passed to combat these diseases • describe characteristics (infection epidemiology, etiologie, pathogenesis and diagnosis) of epizootics relevant for their control • discuss advantages and disadvantages of control programmes
Performance assessment	Oral examination

Food science – practical course II	
Form of the course	Exercise (2 SWH)
ECTS	2
Responsibility	Institute of Food safety and Hygiene (WE08)
Entry requirements	None
Course contents	• Demonstration of the production of meat products • Demonstration of the official foodstuff examination with food hygiene legal assessment • Chemical foodstuff investigation • Properties and technology of meat, sausage and other meat products, eggs and egg products, delicatessen, salted meat products • Law I, II, III • Preparative gravimetry • Compilation of an opinion on foodstuff examination
Educational objectives	Students can... • explain the principles and legal requirements of official foodstuff examination • compile an opinion in the context of the official foodstuff examination • gain insight into the product manufacturing of raw, boiled and cooked sausage
Performance assessment	Case study during the semester

Meat Hygiene III	
Form of the course	Lecture (2 SWH)
ECTS	2
Responsibility	Institute of Food Safety and Hygiene (WE08)
Entry requirements	None
Course contents	Monitoring systems for livestock species
Educational objectives	Students understand the supervision of farm animals.
Performance assessment	None

Pathologic-anatomical demonstrations II	
Form of the course	Exercise (1 SWH)
ECTS	1
Responsibility	Institute of Animal Pathology (WE12)
Entry requirements	None
Course contents	Guided group discussion of organ changes with the help of material from routine operation of the institute and archive material.
Educational objectives	Establishing pathologic-anatomical diagnoses and differential diagnoses and epi-critical evaluation of the etiology and relevance with regard to the clinic.
Performance assessment	Oral tests during the term

Poultry diseases	
Form of the course	Lecture (2 SWH)
ECTS	2
Responsibility	Institute of Poultry Diseases (WE15)
Entry requirements	None
Course contents	Etiology, pathogenesis, diagnosis, therapy and prophylaxis of diseases of commercial poultry
Educational objectives	• Viral diseases: avian encephalomyelitis, infectious bronchitis, infectious bursitis (Gumboro-), classical fowlpest, Newcastle disease (atypical fowlpest), infectious laryngotracheitis, rhinotracheitis of turkeys, Marek´s disease, leucosis, smallpox, adenovirus infections, reovirus infections. • Bacterial diseases: salmonellosis, coli-infections, pasteurellosis (poultry cholera), ornithosis, mycoplasmosis, coryza contagiosa, erysipelas, clostridia, Ornithobacterium rhinotracheale • Parasitic diseases: coccidiosis, typhlohepatitis, roundworms, tapeworms, ectoparasites • Deficiency diseases, metabolic disorders: vitamin A - deficiency, vitamin B-deficiency, vitamin E - deficiency (encephalomalacia), vitamin K - deficiency (haemorrhagic syndrome), perosis, gout, fat liver syndrome and other diseases
Performance assessment	None

Clinical demonstrations – Poultry	
Form of the course	Exercise (2 SWH)
ECTS	2
Responsibility	Institute of Poultry Diseases (WE15)
Entry requirements	None
Course contents	Keeping of commercial poultry and ornamental, zoo and wild birds; propaedeutics in terms of commercial poultry and ornamental, zoo and wild birds; etiology, pathogenesis, diagnosis, therapy and prophylaxis of diseases of ornamental, zoo and wild birds.
Educational objectives	Assessment of keeping of poultry, anamnesis, fixation, clinical examination, sampling, application of medications, evaluation of X-rays, performing sections, theory of surgery (endoscopy, trauma, bumblefoot, sex determination), undernourishment and malnutrition, psittacine beak and feather disease, polyomavirus infection, dilatation of the glandular stomach of psittacids, psittacosis, paramyxovirus infections, trichomonosis and salmonellosis of pigeons.
Performance assessment	None

General ophthalmology	
Form of the course	Lecture (2 SWH)
ECTS	2
Responsibility	Small Animal Clinic (WE20)
Entry requirements	None
Course contents	General ophthalmology in different species
Educational objectives	Knowledge relating to general ophthalmology in different species, including ophthalmologic diagnostics, problem-oriented case processing and diagnosis, therapy and surgery of eye diseases. Disorders of orbita, lids, conjunctiva, nictitating membrane, cornea, anterior chamber of the eye, lens, vitreous body and retina, of the olfactory bulb, uveitis and glaucoma, neurophthalmology.
Performance assessment	None

Law and ethics of the profession	
Form of the course	Lecture (1 SWH)
ECTS	1
Responsibility	Ruminant and Swine Clinic (WE18)
Entry requirements	None
Course contents	Introduction to the duties and responsibilities of the veterinary profession, overview of the variety of veterinary tasks and fields of action, insight into opportunities of training and continuing education; role of veterinary medicine in public health, consumer protection, nutritional science, medical research, the care of the herds and agriculture
Educational objectives	Comprehensive presentation of the possibilities of veterinary activities.
Performance assessment	None

Diseases of bees	
Form of the course	Lecture (1 SWH)
ECTS	1
Responsibility	Institute of Microbiology and Epizootics (WE07)
Entry requirements	None
Course contents	1. Introduction to bee biology, immunity to and the spread of diseases in bees 2. Selected diseases (practice-relevant selection) • Parasitic diseases; (varroosis or varroatosis, malpighamoebosis) • Fungal diseases; (chalk brood, Nosema, stone brood) • Bacterial infections; EFB (European foulbrood), AFB (American foulbrood) • Viral infections; chronic bee paralysis virus (CBPV), acute bee paralysis virus (ABPV), deformed wing virus (DWV), sacbrood virus (SBV), other and rare infections (KBV, IAPV) 3. Intoxication 4. Obligatory notifiable bee diseases and disease control; bee products/consumer protection
Educational objectives	Veterinary students get an insight into selected areas of bee biology based on knowledge of general zoology. With additional knowledge of general parasitology and microbiology as well as epizootics an overview of diseases of honey bees will be provided. The emphasis is placed on practice-related diseases. Official veterinary-related legal requirements regarding detection and control of notifiable bee diseases are mentioned.
Performance assessment	None

Diseases of reptiles, amphibians and fishes	
Form of the course	Lecture (1 SWH)
ECTS	1
Responsibility	Small Animal Clinic (WE20)
Entry requirements	None
Course contents	Infectious and non-infectious diseases of reptiles, amphibians and fish
Educational objectives	In the context of modular teaching students learn the most important diseases of reptiles, amphibians and fish.
Performance assessment	None

Laboratory animal science	
Form of the course	Lecture (1 SWH)
ECTS	1
Responsibility	Institute of Animal Welfare, Animal Behavior and Laboratory Animal Science (WE11)
Entry requirements	None
Course contents	Laboratory animal science, freedom of research, ethical justification of animal tests; legal aspects, pproval and monitoring of animal experiments; animal testing; influential factors in animal experiments, factors, animals, environment, experiment; gnotobiot, gnotobiotop, gnotobiostasis, genetic standardisation, genetic control; transgenic animals; basics of molecular biology, constructing transgenic animals, abiotic environment of laboratory animals; climate, temperature, humidity, ventilation, light, acoustics, nutrition and diet components; optimising of animal experiments; alternatives to animal experiments.
Performance assessment	None

Mandatory courses of 6th - 8th semester on interdisciplinary topics

The interdisciplinary courses during 6. – 8. Semester are offered in a blended learning format with a combination of in-classroom activities and mandatory e-learning modules.

Interdisciplinary courses during 6.-8. Semester	
Form of the course	Lectures and exercises (12 SWS)
ECTS	12
Responsibility	Participating institutions, coordinated by the associated dean for education / study office
Entry requirements	None
Course contents	The focus is on the problem-based interdisciplinary presentation of relevant clinical and VPH / food-safety releated cases / problems. The content of the cases is related to the other subjects taught dring the respective semester. Details of the respective cases and presentation are within the responsibility of the participating institutions.
Educational objectives	See objectives presented for each module / case
Performance assessment	Short MC tests at the end of each e-learning module

Courses of 6th - 8th semester within the framework of "organ-centered teaching"

The following courses of the 6th to 8th semester are taught in organ-centered moduls in which clinical and para-clinical subjects are integrated into the respective topics. Details on the weekly lectures are listed under: http://www.vetmed.fu-berlin.de/studium/veterinaermedizin/stundenplaene/index.html

Semester	Module	Topic	Lecture Hours
6th term	1	Introduction, medical teaching	3
	2	Reproduction I	42
	3	Gastroenterology	63
	4	Liver, pancreas	15
	5	Kidney und efferent urinary tract	9
7th term	6	Reproduction II	45
	7	Respiratory system	20
	8	Cardio-vascular system	15
	9	Blood, haemopoietic organs, lymphatic system	32
	10	Musculoskeletal system	44
8th term	11	Nervous system	23
	12	Metabolism and endocrine organs	31
	13	Udder and teats	25
	14	Skin, mucous membrane, skin appendages	17
	15	Systemic diseases	17

Organ-centered module 2: Reproduction I	
Format	Lecture (42 hours)
ECTS	3
Responsibility	Animal Reproduction Clinic (WE 19)
Entry requirements	None
Course content	Physiological and pathological effects of sexual hormones and reproductive cycles in females and males of various animal species Examination for and diagnosis of male and female animals with regards to reproductive health, breeding fitness and value, udder health including aspects of animal welfare, food dafety and economics Recognition of reproductive problems / diseases, therapeutical approaches to infertility, pregnancy, obstectrics and neonatology
Educational objectives	See list of learning objectives in Blackboard
Performance assessment	None

Organ-centered module 3: Gastroenterology	
Format	Lecture (63 hours)
ECTS	4
Responsibility	Ruminant and Swine Clinic (WE 18)
Entry requirements	None
Course content	Physiological and pathological facts related to the gastroenterological system of various species with regulation, clinical symptoms, diagnosis and treatment
Educational objectives	See list of learning objectives in Blackboard
Performance assessment	In-term written assessments

Organ-centered module 4: Liver, pancreas	
Format	Lecture (15 hours)
ECTS	1
Responsibility	Institute of Veterinary Pathology (WE 12)
Entry requirements	None
Course content	Physiological and pathological facts related to the liver and pancreatic system of various species with regulation, clinical symptoms, diagnosis and treatment
Educational objectives	See list of learning objectives in Blackboard
Performance assessment	In-term written assessments

Organ-centered module 5: Kidney und efferent urinary tract	
Format	Lecture (9 hours)
ECTS	1
Responsibility	Institute of Veterinary Physiology (WE 02)
Entry requirements	None
Course content	Physiological and pathological facts related to the kidney and efferent uninary tract of various species with regulation, clinical symptoms, diagnosis and treatment
Educational objectives	See list of learning objectives in Blackboard
Performance assessment	In-term written assessments

Organ-centered module 6: Reproduction II	
Format	Lecture (45 hours)
ECTS	3
Responsibility	Animal Reproduction Clinic (WE 19)
Entry requirements	None
Course content	Continuation of module 2
Educational objectives	See list of learning objectives in Blackboard
Performance assessment	In-term written assessments

Organ-centered module 7: Respiratory system	
Format	Lecture (9 hours)
ECTS	1
Responsibility	Equine Clinic (WE 17)
Entry requirements	None
Course content	Physiological and pathological facts related to the respiratory system of various species with regulation, clinical symptoms, diagnosis and treatment
Educational objectives	See list of learning objectives in Blackboard
Performance assessment	In-term written assessments

Organ-centered module 8: Cardio-vascular system	
Format	Lecture (15 hours)
ECTS	1
Responsibility	Equine Clinic (WE 17)
Entry requirements	None
Course content	Physiological and pathological facts related to the cardio-vascular system of various species with regulation, clinical symptoms, diagnosis and treatment
Educational objectives	See list of learning objectives in Blackboard
Performance assessment	In-term written assessments

Organ-centered module 9: Blood, haemopoietic organs, lymphatic system	
Format	Lecture (32 hours)
ECTS	2
Responsibility	Institute of Veterinary Pathology (WE 12)
Entry requirements	None
Course content	Physiological and pathological facts related to the blood (and anemia), the haemopoietic organs and lymphatic system of various species with regulation, clinical symptoms, diagnosis and treatment
Educational objectives	See list of learning objectives in Blackboard
Performance assessment	In-term written assessments

Organ-centered module 10: Musculoskeletal system	
Format	Lecture (44 hours)
ECTS	3
Responsibility	Equine Clinic (WE 17)
Entry requirements	None
Course content	Physiological and pathological facts related to the musculoskeletal system of various species with biomechanics, clinical symptoms, diagnosis and treatment
Educational objectives	See list of learning objectives in Blackboard
Performance assessment	In-term written assessments

Organ-centered module 11: Nervous system	
Format	Lecture (23 hours)
ECTS	2
Responsibility	Small Animal Clinic (WE 20)
Entry requirements	None
Course content	Physiological and pathological facts related to the peripheral and central nerveaus system of various species with regulation, clinical symptoms, diagnosis and treatment
Educational objectives	See list of learning objectives in Blackboard
Performance assessment	In-term written assessments

Organ-centered module 12: Metabolism and endocrine organs	
Format	Lecture (31 hours)
ECTS	2
Responsibility	Ruminant and Swine Clinic (WE 18)
Entry requirements	None
Course content	Physiological and pathological facts related to the metabolism and endocrine organs of various species with regulation, clinical symptoms, diagnosis and treatment
Educational objectives	See list of learning objectives in Blackboard
Performance assessment	In-term written assessments

Organ-centered module 13: Udder and teats	
Format	Lecture (25 hours)
ECTS	1
Responsibility	Animal Reproduction Clinic (WE 19)
Entry requirements	None
Course content	Physiological and pathological facts related to the udder and teats of various species with regulation, clinical symptoms, diagnosis and treatment
Educational objectives	See list of learning objectives in Blackboard
Performance assessment	In-term written assessments

Organ-centered module 14: Skin, mucous membrane, skin appendages	
Format	Lecture (17 hours)
ECTS	1
Responsibility	Institute of Veterinary Pathology (WE 12)
Entry requirements	None
Course content	Physiological and pathological facts related to the skin, mucous membrane and skin appendages of various species with regulation, clinical symptoms, diagnosis and treatment
Educational objectives	See list of learning objectives in Blackboard
Performance assessment	In-term written assessments

Organ-centered module 15: Systemic diseases	
Format	Lecture (17 hours)
ECTS	1
Responsibility	Ruminant and Swine Clinic (WE 18)
Entry requirements	None
Course content	Physiological and pathological facts related to systemic diseases of various species with regulation, clinical symptoms, diagnosis and treatment
Educational objectives	See list of learning objectives in Blackboard
Performance assessment	In-term written assessments

Courses of 9th - 10th semester within the framework of the "clinical rotation"

During the 9th and 10th semester, students participate in clinical rotations in which they work in small groups in the clinics and pathology and participate in course work and clinical exercises and routine clinical duties. The courses listed in the tabular overview are integrated into the framework of the rotation.

Clinical rotation – Small animal clinic	
Form of the course	Exercise (5.5 SWH)
ECTS	5.5
Responsibility	Small Animal Clinic (WE20)
Entry requirements	None
Course contents	Review of clinic patients (dogs, cats, pets, reptiles) with internal medical, dermatological, oncological, neurological, ophthalmological and surgical disorders in the context of the clinical rotation; problem-oriented case processing; problem-oriented case analysis; compiling of medical reports; participation in journal clubs; interactive review of cases in small groups; X-ray interpretation; introduction to anaesthesia; basics of sterility and OP assistance; care for stationary patients; participation in emergency services (first aid, taking X-rays, emergency laboratory examinations); surgical exercises
Educational objectives	Within the framework of the rotation, students will practice problem-oriented case analysis from clinical cases (anamnesis and clinical examination, list of medical conditions, differential diagnoses, diagnostic plan, evaluation of the findings, creation of therapy plan, prognostic assessment); dealing with customers and patients; emergency management; practicing simple operations
Performance assessment	Medical report

Clinical rotation – Equine clinic	
Form of the course	Exercise (5.9 SWH)
ECTS	5.9
Responsibility	Equine Clinic (WE17)
Entry requirements	None
Course contents	Review and care of clinic patients with internal medical, reproductive and surgical diseases. Compiling of a medical report. Internships: rectal examination, sonography tendons, X-ray / imaging techniques, forge, diagnostic anesthesia, applied anatomy, internal medicine, reproduction medicine.
Educational objectives	Skills in dealing with patients and their daily care Practical application and implementation of theoretical knowledge Practice of problem-oriented case analysis: anamnesis, clinical examination, assessment of the status praesens, differential diagnoses, creation of therapy plans, prognostic assessment
Performance assessment	Medical report

Clinical rotation – Ruminant and swine clinic	
Form of the course	Exercise (5.4 SWH)
ECTS	5.4
Responsibility	Ruminant and Swine Clinic (WE18)
Entry requirements	Successful participation: Clinical propaedeutics
Course contents	Participation in routine operations in the ruminant and swine clinic, demonstration of clinic patients (ruminants, pigs) with internal and surgical diseases, reproductive disorders (pig) and case studies of livestock diseases. Ambulance trips to farms, evaluation and treatment of individuals and diagnosis and vaccination of the herd. Excursions to agricultural holdings: identification of problems and approaches to solving the problem of stock diseases, diagnostic investigation, taking of samples for further examination, evaluation of findings, knowledge of farm organisation, course of operations and economic matters, contact to the operations manager and stable staff during the survey of the farm statistics, anamnesis and detailed consultation, creation of a consultation protocol with appropriate recommendations to solve the problem. Surgical exercises: suturing techniques, anesthesia, laparotomies, wound treatment, installing blocks and dressings, castration, operation of hernia, and orthopaedic surgery.
Educational objectives	Students are able to create a list of differential diagnoses for a sick animal (ruminant or swine) based on the results of the clinical examination. They can name further examination methods for concrete diagnostics, they can give a prognosis taking into account economic

	aspects and they can formulate a therapy plan or supply prevention measures for food-producing animals. Students can explain the surgery on ruminants and pigs including perioperative measures and perform these operations under guidance. In addition, they learn how to handle and communicate with pet owners and stable staff.
Performance assessment	Compiling a medical report, practical examination on animal and oral test.

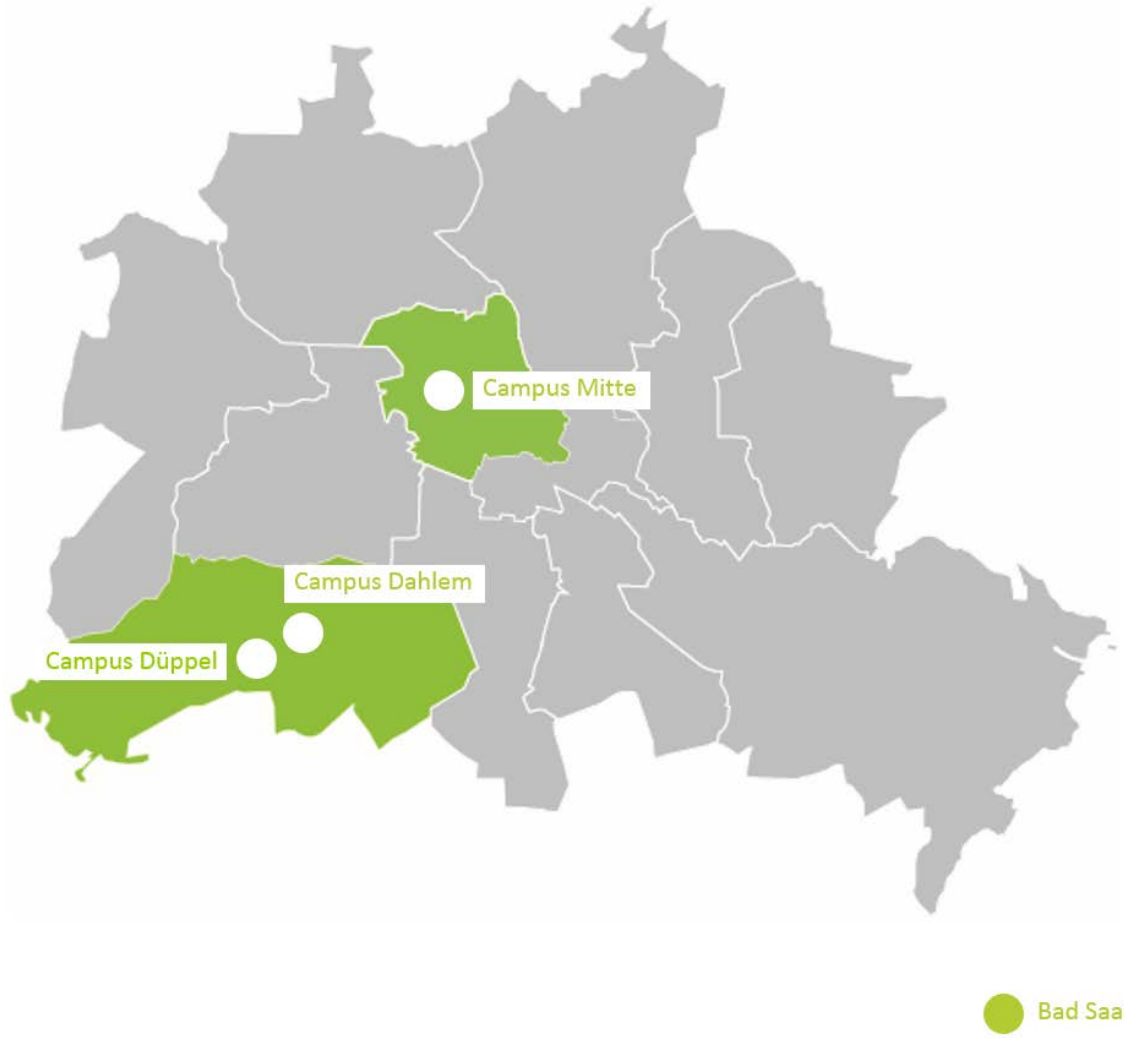
Clinical rotation – Animal reproduction	
Form of the course	Exercise (5.4 SWH)
ECTS	5.4
Responsibility	Animal Reproduction Clinic (WE19)
Entry requirements	None
Course contents	Examination, review and treatment of patients and demonstration animals (ruminants, horses, dogs, cats, pets) in regard to gynaecological, obstetrical, andrological and neonatal questions, including diseases and dysfunctions of the mammary gland. Implementation of special examination techniques and methods of treatment including surgery and biotechnological methods. Presentation, examination and review of animals regarding breed fitness and udder health. Practical examinations: rectal and vaginal examination in cattle and horse, gynaecological examination of dog, cat, pet, ultrasound examinations in the medical context of reproduction (including pregnancy tests). Identification of the insemination date in a dog, andrological and spermatological examinations, examination and surgical procedures on the mamma, obstetrical examinations, obstetric measures including correction of position, posture, presentation, instrumental obstetrics, embryotomy, caesarean. Care of neonatals. Excursions to dairy farms, sheep and horse farmers in the hinterland. Visit to the stables, the milking parlour and other facilities on the farms, examination and treatment of animals in the context of livestock managemengt. Introduction and application of working techniques of the evidence-based veterinary medicine.
Educational objectives	Students acquire in-depth knowledge and skills in the implementation of specific examination techniques and methods of treatment which they learn to apply in the reproduction medical context on male and female animals of different species. Students get to know dairy farms and their facilities near Berlin. They learn practical work within the framework of stock supervision of dairy farms. Students know the basic features of the evidence-based veterinary medicine and are able to evaluate information critically.
Performance assessment	Medical report

Clinical rotation – Poultry diseases	
Form of the course	Exercise (0.8 SWH)
ECTS	0.8
Responsibility	Institute of Poultry Diseases (WE15)
Entry requirements	None
Course contents	• Diagnostic exercises on poultry: consolidating diagnostic procedures • Poultry ambulation: poultry ambulation is carried out on selected farms with different directions of use and types of farming. Herd supervision and inventory management are at the centre of attention.
Educational objectives	• Diagnostic exercises on poultry: application and evaluation of laboratory diagnostic procedures; dissection of the animal, with special regard to specific changes due to different diseases and differential diagnoses; fixation of animals; various injection procedures; blood sampling • Poultry ambulation: Target is the diagnostics of the individual in order to draw conclusions to the entire herd. Economical factors of poultry production are also taken into account
Performance assessment	None

Clinical rotation – Pathology	
Form of the course	Exercise (4.6 SWH)
ECTS	4.6
Responsibility	Institute of Animal Pathology (WE12)
Entry requirements	None
Course contents	Section exercises on all species with a focus on section technique, attendence of routine operation in the pathological institute.
Educational objectives	Independent execution of a section, describing the findings by means of morphological diagnoses, discussion of possible differential diagnoses, including taking into account their respective possible aetiologies, clinical significance and pathogenesis.
Performance assessment	Compiling a written organ or section report

Clinical rotation – Meat hygiene	
Form of the course	Exercise (2.4 SWH)
ECTS	2.4
Responsibility	Institute of Food Safety and Hygiene (WE08)
Entry requirements	None
Course contents	Technical and practical implementation of the theoretical content of the lecture on ante and post-mortem examination of animals
Educational objectives	Ability to practically implement theoretically derived content of the lecture
Performance assessment	

C. Maps of the Establishment and the intra-mural and extra-mural facilities used in the core veterinary programme

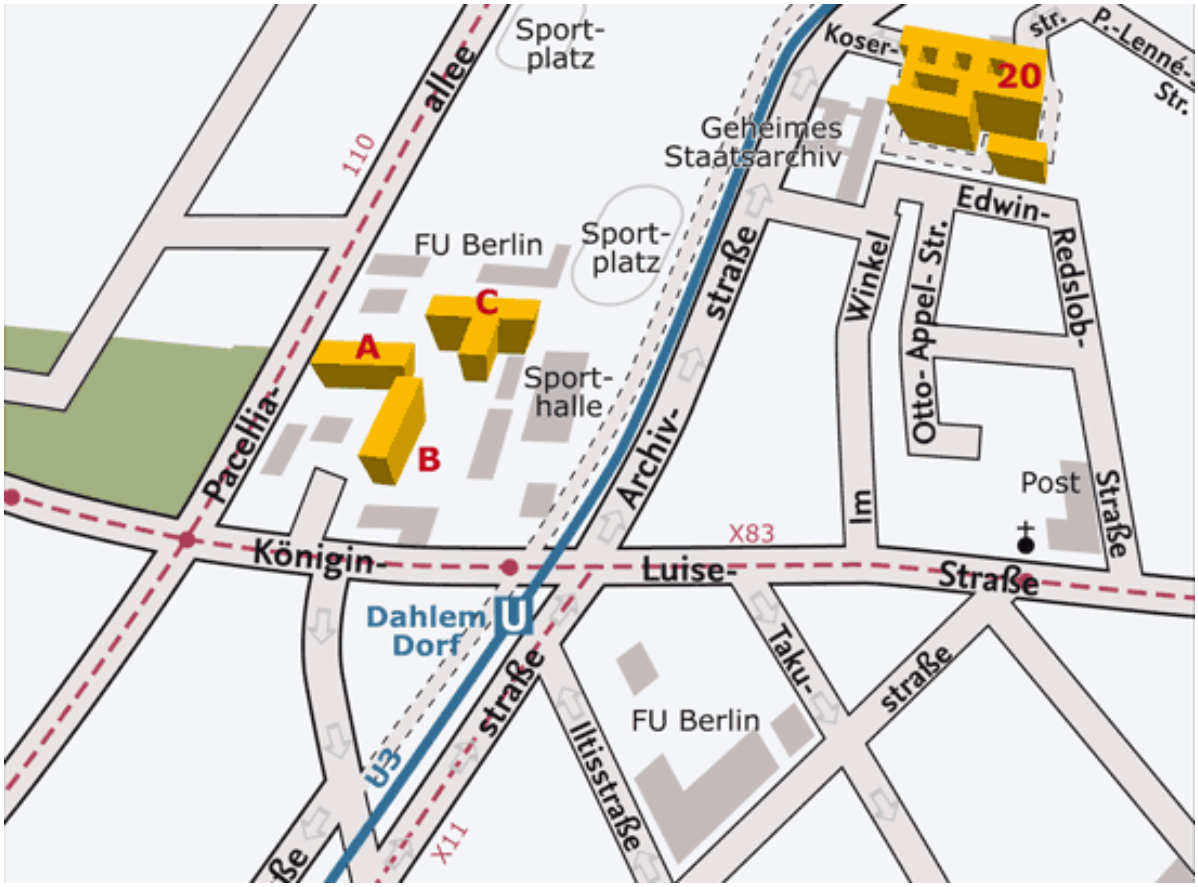


Map of Campus Düppel

Building 1	• Small Animal Clinic
Building 3	• Equine Clinic: Surgery and Radiology
Building 4	• Dean's Office • Administration
Building 6	• Veterinary Library
Building 7	• Student Union canteen
Building 8	• Engineering and Utilities • Institute of Veterinary Physiology, Laboratory • Institute of Veterinary Biochemistry, Laboratory
Building 9	• Continued Education building "Veterinarium Progressum" • Veterinary Medicine Student Representative Group
Building 11	• Institute of Veterinary Physiology
Building 12	• Institute of Veterinary Biochemistry
Building 21	• Institute of Food Safety and Food Hygiene • Institute of Animal Welfare and Behaviour

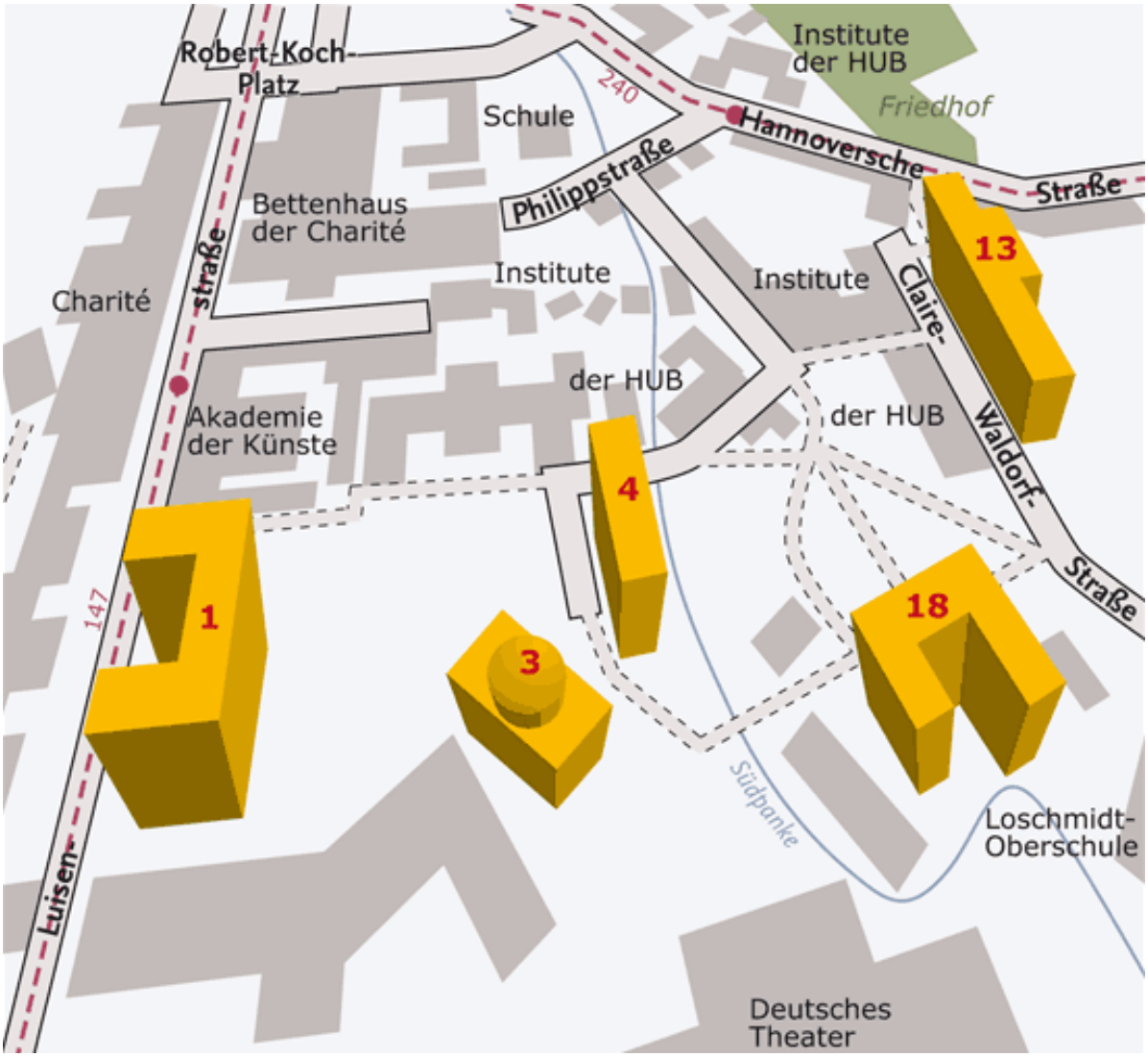
	• Institute of Veterinary Epidemiology and Biostatistics
Building 22	• Institute of Parasitology and Tropical Veterinary Medicine (Stable)
Building 23	• Course room Equine Sciences
Building 24	• Ruminant and Swine Clinic (Stable)
Building 25	• Ruminant and Swine Clinic (Calf Barn)
Building 26	• Ruminant and Swine Clinic
Building 27	• Ruminant and Swine Clinic, Laboratory • Animal Reproduction Clinic
Building 28	Lecture hall • Ruminant and Swine Clinic • Animal Reproduction Clinic
Building 30	• Ruminant and Swine Clinic
Building 31	• IT Unit • Institute of Veterinary Pathology • Institute of Poultry Diseases
Building 32	• Ruminant and Swine Clinic • Animal Reproduction Clinic
Building 34	• Ruminant and Swine Clinic • Animal Reproduction Clinic
Building 35	Robert-von-Ostertag-Building • Institute of Virology • Institute of Immunology • Institute of Microbiology and Epizootics • Institute for Animal and Environmental Hygiene • Institute of Parasitology and Tropical Veterinary Medicine
Building 36	• Institute of Food Safety and Food Hygiene

Map of Campus Dahlem



Building A-C	• Institute of Animal Nutrition
Building 20	• Institute of Veterinary Anatomy • Institute of Pharmacology and Toxicology

Map of Campus Mitte



Building 13 Institute of Food Safety and Food Hygiene (Meat Examination Hall)

D. Written assessment procedures for QA

1. Process Description S.01.01.FU: Implementing Objective Agreements (Extract)

Process Purpose:
The purpose of the process "Implementing Objective Agreements" is to enshrine the continuously developing university-wide strategic objectives at the operational level through a framework of regularly conducted target rounds with all departments.
For this purpose, qualitative and quantitative objectives for teaching and learning are identified and agreed upon between the Executive Board and the Dean's Office. The process ensures that the agreed qualitative and quantitative objectives are planned and implemented. It also safeguards that testing for their attainment is done regularly. The results of the objective agreement rounds are incorporated into subsequent objective agreements in the form of content impulses and procedural conclusions.

Process Triggers:
Regular cycles of objective agreements, normally every 2 years

Process Responsibility:
President of Freie Universität Berlin

Process overview (sub-processes and content):
This process description pertains to the general procedures of the objective agreement from the perspective of university studies and teaching.

S.01.01.01.FU: Objective Agreement Preparation	S.01.01.02.FU: Objective Agreement Completion	S.01.01.03.FU: Objective Agreement Implementation and Evaluation
• Develop and identify content and suggestions for objective agreements • Discuss content and topics for objective agreements as part of the strategic meeting • Create a general and department-related key issues paper • Conduct preliminary discussions with department • Finalise negotiating guidelines for each department	• Conduct objective agreement discussions • Sign off on objective agreements • Present current objective agreement to Freie Universität Berlin and in the Academic Senate and Board of Trustees	• Allocate adopted objective agreements funds • Implement agreed upon objectives • Draw up interim / final report • Examine and document the objective agreements' degree of fulfilment • Determine substantive results of objective agreements as well as objective agreement procedures and set conclusions for future objective agreements

2. Process Description K.01.02.FU: Advancement of Degree Programs (Extract)

Process Purpose:
The purpose of the process "Advancement of Degree Programs" is to further develop the range of studies at Freie Universität Berlin according to nationally and internationally recognised scientific and research standards. Furthermore, feedback from students, teachers and graduates on aspects of the current degree programs as well as modified institutional and subject framework conditions at departments and central institutes can necessitate revisions. Compliance with the framework and structural requirements is ensured by a staggered examination and confirmation procedure. This makes provision for coordination within the subjects as well as between subjects and the central advising units in academic structural development and the Office of the General Counsel in the revision phase. Therefore, the process of revising and developing a degree program ensures the necessary administrative adjustments within teaching planning, examination administration as well as, if necessary, application and admission procedures.

Process Responsibility:
Executive Board of Freie Universität Berlin

Process Point of Contact:
Academic Affairs Division: academic structural development, Office of the General Counsel

Process overview (sub-processes and content):

K.01.02.FU: Advancement of Degree Programs			
K.01.02.01.FU: Review and revise degree program	K.01.02.02.FU: Revisions Examine degree program	K.01.02.03.FU: Revisions Approve degree program	K.01.02.04.FU: Revisions Adapt degree program administratively

3. Process Description K.04.01.FU: Providing and Offering Courses (Extract)

Process Purpose:
The purpose of the process, "Providing and Offering Courses" is to make a range of courses available to students of Freie Universität Berlin, which correspond to current study and examination regulations.
In addition this process is intended to ensure that students are able to participate as fully as possible in the compulsory courses on offer. (The degree program table ensure these courses do not clash and also special needs of students are taken into account).

Process Responsibility:
Office of the Dean at the respective department

Process Point of Contact:
Study and examination offices, curriculum designers and degree program coordinators at the department level

Process overview (sub-processes and content):

K.04.01.FU: Providing and Offering Courses		
K.04.01.01.FU: Prepare courses on offer, recruit, authorise, publish	K.04.01.02.FU: Substantiate course	K.04.01.03.FU: Follow up on courses on offer

4. Process Description U.02.03.BS: Evaluating Teaching (Extract)

Process Purpose:
The purpose of the process "Evaluating Teaching" is to provide teachers with individual feedback from students' points of view in regard to the form, content, implementation and student learning success in individual courses. They are thereby encouraged to reflect on their own teaching, the contents conveyed as well as their personal development potential.
Individual feedback on courses and didactic teaching skills is an important starting point for teachers so that they can enter into dialogue with other subject representatives about the content offered. They may also take advantage of appropriate advanced training possibilities and support junior scholars in their respective teaching activities.
In addition, aggregated feedback on evaluated courses allows departments and central institutes to evaluate their range of courses and, if necessary, further develop them in keeping with students' needs.
Therefore, a significant contribution is made to the improvement of teaching quality at Freie Universität Berlin on a sustainable basis.

Process Triggers:
- Regular Evaluation (in accordance with evaluation guidelines)
- As the occasion demands in the first year of teaching activity for newly appointed university professors and teachers at the Faculty of Veterinary Medicine at Freie Universität Berlin
- Occasions at the request of teachers

Process Responsibility:
Office of the Dean at the Faculty of Veterinary Medicine

Process Point of Contact:
Advisor for University Studies and Teaching at the Faculty of Veterinary Medicine

Process overview (sub-processes and content):

U.02.03.01.BS: Plan and prepare survey	U.02.03.02.BS: Conduct survey	U.02.03.03.BS: Evaluate, analyse and report survey	U.02.03.04.BS: Evaluate the results of the survey and improve processes
• Inform subject coordinators lecturers responsible for the topics and new teachers about upcoming teaching evaluation • Fill in registration form for teaching evaluation and send to Advisor for University Studies and Teaching • Prepare survey software and questionnaire • Print out questionnaires and send	• Distribute questionnaires • Fill in questionnaires • Collect questionnaires. Package them, seal them and sign • Forward completed questionnaires to the Advisor for University Studies and Teaching	• Scan questionnaires for evaluations into survey software At LeKo: • Create individual evaluations for each teacher and if necessary send information to "SUPPORT for Teaching" • Create anonymised and aggregated overall evaluations for LeKO and present to the Dean's Office FBR / ABK At LeZiKo: • Create individual evaluations for each course and send to subject coordinators / persons responsible for blocks • Create overall evaluation for LeZiKo and present to and discuss with the Dean's Office	At LeKo: • Use further training and qualification courses if necessary At LeZiKo: • Discuss survey results and if necessary agree upon measures • Present evaluation results to LeZiK, including measures to FBR • Report essential information on evaluation procedures and measures to the Executive Board as part of annual quality report

5. Process Description U.02.04.BS: Evaluating Student Satisfaction (Extract)

Process Purpose:
The purpose of the process "Evaluating Student Satisfaction" is to provide information based on a systematic survey of students at the Faculty of Veterinary Medicine. They are able to indicate starting points for improving degree programs and study conditions.

Process Triggers:
Regular evaluations (every 2 years)

Process Responsibility:
Office of the Dean at the Faculty of Veterinary Medicine

Process Point of Contact:
Advisor for University Studies and Teaching at the Faculty of Veterinary Medicine

Process overview (sub-processes and content):

U.02.04.01.BS: Plan and prepare student satisfaction survey	U.02.04.02.BS: Conduct student satisfaction survey	U.02.04.03.BS: Evaluate and analyse student satisfaction survey. Report on the results	U.02.04.04.BS: Evaluate the results of the student satisfaction survey and improve processes
• Create Questionnaire • Adjust population • Create and coordinate email cover letters • Provide information for the survey • Send email cover letters to the population	• Fill in questionnaires • Sample number of returns and send reminder email if necessary • Conclude student satisfaction survey	• Evaluate survey data • Present overall results	• Discuss survey results • Compile overall report • Present evaluation results to Faculty Council • Report evaluation results and measures within the annual quality report to the Executive Board

6. Process Description U.02.05.BS: Evaluating Extramural Internships (Extract)

Process Purpose:
The purpose of the process "Evaluating Extramural Internships" is to obtain feedback on the quality of extramural training as well as on the preparation of students for their respective internships organised through Freie Universität Berlin. For this, a survey of students and internship directors is conducted. The process also identifies possible areas for potential improvement. Feedback from students and internship directors is incorporated into improving study courses on offer.

Process Responsibility:
Office of the Dean at the Faculty of Veterinary Medicine

Process Point of Contact:
Advisor for University Studies and Teaching at the Faculty of Veterinary Medicine

Process overview (sub-processes and content):

U.02.05.**01**.BS: Plan and initiate extramural internships	U.02.05.**02**.BS: Conduct survey on extramural internships	U.02.05.**03**.BS: Evaluate and analyse survey on extramural internships and report on the results	U.02.05.**04**.BS: Evaluate the results of the survey on extramural internships and improve processes
• Download learning catalogue and guide from the Federal Association of Practising Veterinarians (BPT) • Seek out internship establishment and conduct preliminary discussion with internship director • Initiate internship	• Download and fill in internship certifications and questionnaires for assessing extramural internships (students, internship directors). Submit to the Veterinary Library. • Internship certificates are sent to the LaGeSo • Questionnaires for assessing extramural internships (students, internship directors) are forwarded to the Dean's Office	• Questionnaires for assessing extramural internships are scanned and evaluated in survey software: (a) aggregated evaluation according to internship type, (b) individual evaluation for the internship institutions of the Faculty of Veterinary Medicine • Present aggregated overall survey results • Archive questionnaires for assessing extramural internships for student access	• If necessary feed survey results on the internship institutions of the Faculty of Veterinary Medicine back to persons responsible for internships • Identify areas with improvement potential • Discuss evaluation results and if necessary agree upon measures • Feed evaluation results back • Report evaluation results within annual quality report to the Executive Board

7. Process Description U.02.06.BS: Evaluating Agricultural Internships (Extract)

Process Purpose:
The purpose of the process "Evaluating Agricultural Internships" is to obtain feedback on the quality of extramural training as well as on the preparation of students for their internship organised through Freie Universität Berlin. For this, a survey of students and internship directors is conducted. The process also identifies possible areas for potential improvement. Feedback from students and internship directors is incorporated into improving study courses on offer.

Process Responsibility:
Office of the Dean at the Faculty of Veterinary Medicine

Process Point of Contact:
Advisor for University Studies and Teaching at the Faculty of Veterinary Medicine

Process overview (sub-processes and content):

U.02.06.**01**.BS: Plan and Prepare agricultural internships	U.02.06.**02**.BS: Conduct agricultural internships as well as survey	U.02.06.03.BS: Evaluate and analyse agricultural internships. Report on the results	U.02.06.**04**.BS: Evaluate the results of the survey on agricultural internships and improve processes
Variant A: Compact internship in cooperation company • Register for internship • Students to internship directors: Notify cooperation company **Variant B:** Self-initiated organised internship • Search for company licensed for internships • Coordinate training plan and confirm fulfilment of specifications	• Carry out internship conforming to training plan • If necessary draw up daily records and internship report (Varient B) • Download and fill in surveys assessing agricultural internships (students, internship directors). Forward to Dean's Office • If necessary fill out internship certificate and send to internship coordinators at Humboldt-Universität zur Berlin with internship report (Variant B)	• Questionnaires for assessing agricultural internships are scanned and evaluated in survey software • Present aggregated overall survey results • Archive questionnaires for assessing agricultural internships for student access	• Identify areas with improvement potential • Discuss survey results and if necessary agree upon measures • Feed evaluation results back • Report evaluation results within the annual quality report to the Executive Board

	• If necessary sort internship certificates and examine internship report, debriefing if necessary (Variant B) • Issue internship certification and forward to LaGeSo		

8. Process Description K.05.01.BS: Organising and Managing Erasmus- Study Exchanges, Visiting Students (Extract)

Process Purpose:
The purpose of the process "Organising and Managing Erasmus Study Exchanges (Visiting Students) is to coordinate and sign the learning agreement that forms part of the preparation for Erasmus study exchanges and other programs as well as to grant temporary FU affiliation to Erasmus exchange students so that they can partake in university studies.
In the course of this process, objective group specific features as well as information requirements are factored into the appropriate range of services and studies.

Process Triggers:
International exchange students who would like to partake in a time-limited Erasmus exchange at Freie Universität Berlin

Process Responsibility:
The Dean's Office at the Faculty of Veterinary Medicine, Division for External Affairs

Process Point of Contact:
Erasmus Coordinator at the Faculty of Veterinary Medicine, Division for External Affairs:
Unit for International Student Mobility

Process overview (sub-processes and content):

K.05.01.01.BS: Conduct application and nomination	K.05.01.02.BS: Conduct pre-enrollment	K.05.01.03.BS: Conduct personal enrollment	K.05.01.04.BS: Initiate Erasmus study exchange
• Apply at the home university for an Erasmus study exchange at Freie Universität Berlin • Conduct selection procedure • Nominate Candidates • Check learning agreement. Examine and sign	• Download request for pre-enrollment from Distributed Campus internet portal. Fill in and forward. • Update student details in student records • Assign provisional enrollment number • Send invitation for central orientation days with further information	• Submit health insurance evidence or evidence for exemption • Calculate semester fees • Issue Certificate of Arrival • Submit completed enrollment request and documentation for enrollment • Update student details in student records • Check address • Send a semester card and semester ticket transportation pass	• Send information on further aspects of the process • Greet visiting students • Register for and take courses • Take module examinations and certificate • Issue Confirmation of Stay

9. Process Description K.05.02.BS: Organising and Managing Erasmus- Study Exchanges, Outgoing Students (Extract)

Process Purpose:
The purpose of the process "Organising and Managing Erasmus Study Exchanges (Outgoing Students)" is to coordinate and sign the learning agreement that forms part of the preparation for Erasmus study exchanges and other programs. This included to nominate applicants as part of the prerequisite for Erasmus study exchanges as well as to certify completed study and examination achievements in keeping with the requirements of the Erasmus stay abroad and also to complete the process of paying the mobility grant. In the course of this process, objective group-specific features as well as information requirements are factored into the appropriate informations and advising services.

Process Triggers:
Students of Freie Universität Berlin who would like to partake in a time-limited Erasmus exchange at a partner university

Process Responsibility:
The Dean's Office at the Faculty of Veterinary Medicine, Division for External Affairs

Process Point of Contact:
Erasmus Coordinator at the Faculty of Veterinary Medicine, Division for External Affairs: Unit for International Student Mobility

Process overview (sub-processes and content):

K.05.02.01.BS: Conduct application and nomination	K.05.02.02.BS: Initiate Erasmus study exchange	K.05.02.03.BS: Follow up on Erasmus study exchange
• Apply for Erasmus exchange study at a partner university • Conduct selection procedure • Nominate candidate, send notification to applicant and forward nomination to partner university • Check learning agreement. Sign and forward • Forward applicant list to IV C • Submit and sign grant agreement • Arrange payment of 1st instalment of mobility grant • If necessary apply for semester on leave	• Register or enroll at partner university • Register for and take courses • Sit examinations • Issue certificate for confirmation of stay	• If necessary certify study and examination achievements in keeping with the requirements of the Erasmus stay abroad • Submit and check necessary documentation for the 2nd Instalment of the mobility grant • Arrange payment of 2nd instalment of the mobility grant

E. List of scientific publications from the Establishment's academic staff in peer reviewed journals during the last three academic years

List sorted by scientific institutions, separate years 2014 to 2016

Table 1: Total number of publications per year 2014-2016 by Faculty of veterinary medicine

Year	Number of Publications
2016	257
2015	275
2014	331

2014

Institute of Veterinary Anatomy (WE01)

1) Barszcz, K.; Kupczynska, M.; Kleckowska-Nawrot, J.; Janczyk, P.; Krasucki, K.; Wasowicz, M. (2014): Arterial coronary circulation in cats (Felis silvestris f. catus).
Medycyna Weterynaryjna; **70**(6), S. 373–378

2) Dietze, K.; Slosarek, I.; Fuhrmann-Selter, T.; Hopperdietzel, C.; Plendl, J.; Kaessmeyer, S. (2014): Isolation of equine endothelial cells and life cell angiogenesis assay.
Clinical hemorheology and microcirculation; **58**(1), S. 127–146

3) Hiebl, B.; Hopperdietzel, C.; Hünigen, H.; Dietze, K.; Jung, F.; Niehues, S. M. (2014): Tissue reaction induced by implanted venous access ports in adult patients after infection of the implantation site.
Clinical hemorheology and microcirculation; **58**(1), S. 107–113

4) Hopperdietzel, C.; Hirschberg, R. M.; Hünigen, H.; Wolter, J.; Richardson, K.; Plendl, J. (2014): Gross morphology and histology of the alimentary tract of the convict cichlid Amatitlania nigrofasciata.
Journal of fish biology; **85**(5), S. 1707–1725

5) Kaessmeyer, S.; Bhoola, K.; Baltic, S.; Thompson, P.; Plendl, J. (2014): Lung cancer neovascularisation: Cellular and molecular interaction between endothelial and lung cancer cells.
Immunobiology; **219**(4), S. 308–314

6) Kavoi, B. M.; Plendl, J.; Makanya, A. N.; Ochieng', S.; Kiama, S. G. (2014): Effects of anticancer drug docetaxel on the structure and function of the rabbit olfactory mucosa.
Tissue & cell; **46**(3), S. 213–224

7) Kreuzer, S.; Rieger, J.; Strucken, E. M.; Thaben, N.; Hünigen, H.; Nöckler, K.; Janczyk, P.; Plendl, J.; Brockmann, G. A. (2014): Characterization of CD4+ subpopulations and CD25+ cells in ileal lymphatic tissue of weaned piglets infected with Salmonella Typhimurium with or without Enterococus faecium feeding.
Veterinary immunology and immunopathology; **158**(3/4), S. 143–155

8) Ali-von Laue, C.; Zoschke, C.; Do, N.; Lehnen, D.; Küchler, S.; Mehnert, W.; Blaschke, T.; Kramer, K. D.; Plendl, J.; Weindl, G.; Korting, H. C.; Hoeller Obrigkeit, D.; Merk, H.-F.; Schäfer-Korting, M. (2014): Improving Topical Non-Melanoma Skin Cancer Treatment: in vitro Efficacy of a Novel Guanosine-Analog Phosphonate.
Skin pharmacology and physiology; **27**(4), S. 173–180

9) Liu, P.; Pieper, R.; Scharek-Tedin, L.; Martin, L.; Meyer, W.; Rieger, J.; Plendl, J.; Vahjen, W.; Zentek, J. (2014): Effect of dietary zinc oxide on jejunal morphological and immunological characteristics in weaned piglets.
Journal of Animal Science; **92**(11), S. 5009–5018

10) Liu, P.; Pieper, R.; Rieger, J.; Vahjen, W.; Davin, R.; Plendl, J.; Meyer, W.; Zentek, J. (2014): Effect of Dietary Zinc Oxide on Morphological Characteristics, Mucin Composition and Gene Expression in the Colon of Weaned Piglets.
PLoS one; **9**(3), S. e91091

11) Patan-Zugaj, B.; Gauff, F. C.; Plendl, J.; Licka, T. F. (2014): Effect of endotoxin on leukocyte activation and migration into laminar tissue of isolated perfused equine limbs.
American journal of veterinary research; **75**(9), S. 842–850

12) Wang, Z.; Burwinkel, M.; Chai, W.; Lange, E.; Blohm, U.; Breithaupt, A.; Hoffmann, B.; Twardziok, S.; Rieger, J.; Janczyk, P.; Pieper, R.; Osterrieder, N. (2014): Dietary Enterococcus faecium NCIMB 10415 and Zinc Oxide Stimulate Immune Reactions to Trivalent Influenza Vaccination in Pigs but Do Not Affect Virological Response upon Challenge Infection.
PLoS one; **9**(1), S. e87007

Institute of Veterinary Physiology (WE02)

13) Ahmed, R.; Martens, H.; Mülling, C. (2014): Diet-dependent rumen epithelial NHE1 and NHE3 expression in sheep.
Animal an veterinary sciences; **2**(6), S. 208–212

14) Awad, W. A.; Hess, C.; Khayal, B.; Aschenbach, J. R.; Hess, M. (2014): In vitro exposure to Escherichia coli decreases ion conductance in the jejunal epithelium of broiler chickens.
PLoS one; **9**(3), S. 92156

15) Awad, W. A.; Aschenbach, J. R.; Ghareeb, K.; Khayal, B.; Hess, C.; Hess, M. (2014): Campylobacter jejuni influences the expression of nutrient transporter genes in the intestine of chickens.
Veterinary Microbiology; **172**(1/2), S. 195–201

16) Dittmann, I.; Amasheh, M.; Krug, S.M.; Markov, A.G.; Fromm, M.; Amasheh, S. (2014): Laurate permeates the paracellular pathway for small molecules in the intestinal epithelial cell model HT-29/B6 via opening the tight junctions by reversible relocation of claudin-5
Pharmaceutical research; **31**(9), S. 2539–2548

17) Georgi, M. I.; Rosendahl, J.; Ernst, F.; Gunzel, D.; Aschenbach, J. R.; Martens, H.; Stumpff, F. (2014): Epithelia of the ovine and bovine forestomach express basolateral maxi-anion channels permeable to the anions of short-chain fatty acids.
Pflügers Archiv: European journal of physiology; **466**(9), S. 1968–1712

18) Lu, Z.; Stumpff, F.; Deiner, C.; Rosendahl, J.; Braun, H.; Abdoun, K.; Aschenbach, J. R.; Martens, H. (2014): Modulation of sheep ruminal urea transport by ammonia and pH.
American journal of physiology / Regulatory, integrative and comparative physiology; **307**(5), S. R558–R570

19) Markov, A. G.; Falchuk, E. L.; Kruglova, N. M.; Rybalchenko, O. V.; Fromm, M.; Amasheh, S. (2014): Comparative analysis of theophylline and cholera toxin in rat colon reveals an induction of sealing tight junction proteins.
Pflügers Archiv: European journal of physiology; **466**, S. 2059–2065

20) Markov, A. G.; Amasheh, S. (2014): Tight junction physiology of pleural mesothelium.
Frontiers in physiology; **5**, S. 221

21) Martín-Tereso, J.; Martens, H. (2014): Calcium and magnesium physiology and nutrition in relation to the prevention of milk fever and tetany (dietary management of macrominerals in preventing disease).
The Veterinary clinics of North America. Food animal practice; **30**(3), S. 643–670

22) Penner, G. B.; Aschenbach, J. R.; Wood, K.; Walpole, M.E.; Kanafany-Guzman, R.; Hendrick, S.; Campbell, J. (2014): Characterizing barrier function among regions of the gastrointestinal tract in Holstein steers.
Animal production science; **54**(9), S. 1282–1287

23) Schweigel-Röntgen, M.; Kolisek, M. (2014): SLC41 transporters: molecular identification and functional role.
Current topics in membranes and transport; **73**, S. 383–410

24) Stumpff, F.; McGuigan, J.A. (2014): Measuring Ca(2+) binding to short chain fatty acids and gluconate with a Ca(2+) electrode: role of the reference electrode.
Analytical biochemistry; **459**, S. 46–52

25) Twardziok, S. O.; Pieper, R.; Aschenbach, J. R.; Bednorz, C.; Brockmann, G. A.; Fromm, M.; Klingspor, S.; Kreuzer, S.; Lodemann, U.; Martens, H.; Martin, L.; Richter, J.F.; Starke, I.; Siepert, B.; Tedin, K.; Scharek-Tedin, L.; Vahjen, W.; Wieler, L. H.; Zakrzewski, S. S.; Zentek, J.; Wrede, P. (2014): Cross-talk between host, microbiome and probiotics: A systems biology approach for analyzing the effects of probiotic Enterococcus faecium NCIMB 10415 in piglets.
Molecular Informatics; **33**(3), S. 171–182

26) Weber, G. M.; Witschi, A.-K. M.; Wenk, C.; Martens, H. (2014): Triennial Growth Symposium: Effects of dietary 25-hydroxycholecalciferol and cholecalciferol on blood vitamin D and mineral status, bone turnover, milk composition, and reproductive performance of sows.
Journal of Animal Science; **92**(3), S. 899–909

27) Zhao, H.; Lu, J.; Huang, Z.; Yan, L.; Holger, M.; Shen, Z. (2014): High concentrate: forage ratio diet inhibiting omasal epithelium growth is associated with decreased cyclin D1 and CDK4 expression in growing goats.
Animal science journal = Nihon chikusan Gakkaihō; **85**(6), S. 660–670

Institute of Veterinary Biochemistry (WE03)

28) Abdoon, A. S.; Gabler, C.; Holder, C.; Kandil, O. M.; Einspanier, R. (2014): Seasonal variations in developmental competence and relative abundance of gene transcripts in buffalo (Bubalus bubalis) oocytes.
Theriogenology; **82**(8), S. 1055–1067

29) Adler, L.; Alter, T.; Sharbati, S.; Gölz, G. (2014): Phenotypes of Campylobacter jejuni luxS Mutants Are Depending on Strain Background, Kind of Mutation and Experimental Conditions.
PLoS one; **9**(8), S. e104399

30) Bruegge, J. Z.; Hanisch, C.; Einspanier, R.; Alter, T.; Gölz, G.; Sharbati, S. (2014): Arcobacter butzleri induces a pro-inflammatory response in THP-1 derived macrophages and has limited ability for intracellular survival.
International journal of medical microbiology; **304**(8), S. 1209–1217

31) Hurlbeck, C.; Einspanier, R.; Pfeil, I.; Bondzio, A. (2014): Evaluation of biomarkers for osteoarthritis caused by fragmented medial coronoid process in dogs.
Research in Veterinary Science; **96**(3), S. 429–435

32) Jasensky, A. K.; Bondzio, A.; Murugaiyan, J.; Siebert, U.; Roesler, U.; Kohn, B.; Einspanier, R. (2014): Characterization of the native C-reactive protein (cCRP) and the corresponding liver mRNA in dogs.
Biochemical and biophysical research communications; **452**(3), S. 462–467

33) Palma-Vera, S.; Einspanier, R.; Schoen, J. (2014): Bovine oviductal epithelial cells: long term culture characterization and impact of insulin on cell morphology.
Reproductive biology; **14**(3), S. 206–212

34) Sheldon, I. M.; Cronin, J. G.; Healey, G. D.; Gabler, C.; Heuwieser, W.; Streyl, D.; Bromfield, J. J.; Miyamoto, A.; Fergani, C.; Dobson, H. (2014): Innate immunity and inflammation of the bovine female reproductive tract in health and disease.
Reproduction; **148**(3), S. R41–R51

35) Siepert, B.; Reinhardt, N.; Kreuzer, S.; Bondzio, A.; Twardziok, S.; Brockmann, G.; Nöckler, K.; Szabó, I.; Janczyk, P.; Pieper, R.; Tedin, K. (2014): Enterococcus faecium NCIMB 10415 supplementation affects intestinal immune-associated gene expression in post-weaning piglets.
Veterinary immunology and immunopathology; **157**(1/2), S. 65–77

36) Tschiche, A.; Staedtler, A. M.; Malhotra, S.; Bauer, H.; Böttcher, C.; Sharbati, S.; Calderón, M.; Koch, M.; Zollner, T. M.; Barnhard, A.; Smith, D. K.; Einspanier, R.; Schmidt, N.; Haag, R. (2014): Polyglycerol-based amphiphilic dendrons as potential siRNA carriers for in vivo applications.
Journal of Materials Chemistry B; **15**(2), S. 2153–2167

37) Wyszko, E.; Mueller, F.; Gabryelska, M.; Bondzio, A.; Popenda, M.; Barciszewski, J.; Erdmann, V. A. (2014): Spiegelzymes® Mirror-Image Hammerhead Ribozymes and Mirror-Image DNAzymes, an Alternative to siRNAs and microRNAs to Cleave mRNAs In Vivo?
PLoS one; **9**(1), S. e86673

38) Zeljenková, D.; Ambrušová, K.; Bartušová, M.; Kebis, A.; Kovrižnych, J.; Krivošíková, Z.; Kuricová, M.; Líšková, A.; Rollerová, E.; Spustová, V.; Szabová, E.; Tulinská, J.; Wimmerová, S.; Levkut, M.; Révajová, V.; Sevčíková, Z.; Schmidt, K.; Schmidtke, J.; La Paz, J. L.; Corujo, M.; Pla, M.; Kleter, G. A.; Kok, E. J.; Sharbati, J.; Hanisch, C.; Einspanier, R.; Adel-Patient, K.; Wal, J.-M.; Spök, A.; Pöting, A.; Kohl, C.; Wilhelm, R.; Schiemann, J.; Steinberg, P. (2014): Ninety-day oral toxicity studies on two genetically modified maize MON810 varieties in Wistar Han RCC rats (EU 7th Framework Programme project GRACE).
Archives of toxicology; **88**(12), S. 2289–2314

Institute of Animal Nutrition (WE04)

39) Altmeyer, S.; Kröger, S.; Vahjen, W.; Zentek, J.; Scharek-Tedin, L. (2014): Impact of a probiotic Bacillus cereus strain on the jejunal epithelial barrier and on the NKG2D expressing immune cells during the weaning phase of piglets.
Veterinary immunology and immunopathology; **161**(1/2), S. 57–65

40) Awad, W.A.; Ghareeb, K.; Zentek, J. (2014): Mechanisms underlying the inhibitory effect of the feed contaminant deoxynivalenol on glucose absorption in broiler chickens.
Vet-Journal: Magazin für österreichische Tierärztinnen und Tierärzte; **202**(1), S. 188–190

41) Goodarzi Boroojeni, F.; Vahjen, W.; Mader, A.; Knorr, F.; Ruhnke, I.; Röhe, I.; Hafeez, A.; Villodre, C.; Männer, K.; Zentek, J. (2014): The effects of different thermal treatments and organic acid levels in feed on microbial composition and activity in gastrointestinal tract of broilers.
Poultry Science; **93**(6), S. 1440–1452

42) Goodarzi Boroojeni, F.; Mader, A.; Knorr, F.; Ruhnke, I.; Röhe, I.; Hafeez, A.; Männer, K.; Zentek, J. (2014): The effects of different thermal treatments and organic acid levels on nutrient digestibility in broilers.
Poultry Science; **93**(5), S. 1159–1171

43) Brenten, T.; Morris, P. J.; Salt, C.; Raila, J.; Kohn, B.; Brunnberg, L.; Schweigert, F. J.; Zentek, J. (2014): Energy intake, growth rate and body composition of young Labrador Retrievers and Miniature Schnauzers fed different dietary levels of vitamin A.
The British journal of nutrition; **111**(12), S. 2104–2111

44) Chai, W.; Zakrzewski, S.; Günzel, D.; Pieper, R.; Wang, Z.; Twardziok, S.; Janczyk, P.; Osterrieder, N.; Burwinkel, M. (2014): High-dose dietary zinc oxide mitigates infection with transmissible gastroenteritis virus in piglets.
BMC veterinary research; **10**, S. 75

45) Durek, J.; Ghadiri Khozroughi, A.; Fröhling, A.; Knorr, F.; Mader, A.; Goodarzi Boroojeni, F.; Zentek, J.; Knorr, D.; Bolling, J.S. (2014): Effects of thermally treated broiler feed with different organic acid levels on resulting meat composition and parameters related to meat quality.
Innovative Food Science & Emerging Technologies; **26**, S. 397–405

46) Ebner, F.; Rausch, S.; Scharek-Tedin, L.; Pieper, R.; Martin, L.; Burwinkel, M.; Zentek, J.; Hartmann, S. (2014): A novel lineage transcription factor based analysis reveals differences in T helper cell subpopulation development in infected and intrauterine growth restricted (IUGR) piglets.
Developmental and comparative immunology; **46**(2), S. 333–340

47) Hafeez, A.; Mader, A.; Goodarzi Boroojeni, F.; Ruhnke, I.; Röhe, I.; Männer, K.; Zentek, J. (2014): Impact of thermal and organic acid treatment of feed on apparent ileal mineral absorption, tibial and liver mineral concentration, and tibia quality in broilers.
Poultry Science; **93**(7), S. 1754–1763

48) Haselmeyer, A.; Zentek, J.; Chizzola, R. (2014): Effects of thyme as a feed additive in broiler chickens on thymol in gut contents, blood plasma, liver and muscle.
Journal of the science of food and agriculture; **95**, S. 504–508

49) Kalmar, I.D.; Verstegen, M.W.A.; Vanrompay, D.; Männer, K.; Zentek, J.; Iben, C.; Leitgeb, R.; Schiavone, A.; Prola, L.; Janssens, G.P.J. (2014): Efficacy of dimethylglycine as a feed additive to improve broiler production.
Livestock Science; **164**, S. 81–86

50) Kieran, J.; Dalmasso, M.; Zentek, J.; Mader, A.; Bruggeman, G.; Wallace, J.; De Medici, D.; Fiore, A.; Prukner-Radovcic, E.; Lukac, M.; Axelsson, L.; Holck, A.; Ingmer, H.; Malakauskas, M. (2014): Microbes versus microbes: control of pathogens in the food chain.
Journal of the science of food and agriculture; **94**(15), S. 3079–3089

51) Halberg Larsen, M.; Dalmasso, M.; Ingmer, H.; Langsrud, S.; Malakauskas, M.; Mader, A.; Moretro, T.; Mozina, S. S.; Rychli, K.; Wagner, M.; Wallace, R. J.; Zentek, J.; Jordan, K. (2014): Persistence of foodborne pathogens and their control in primary and secondary food production chains.
Food control; **44**, S. 92–109

52) Liu, P.; Pieper, R.; Rieger, J.; Vahjen, W.; Davin, R.; Plendl, J.; Meyer, M.; Zentek, J. (2014): Effect of dietary zinc oxide on morphological characteristics, mucin composition and gene expression in the colon of weaned piglets.
PLoS one; **9**(3), S. e91091

53) Liu, P.; Pieper, R.; Scharek-Tedin, L.; Martin, L.; Meyer, W.; Rieger, J.; Plendl, J.; Vahjen, W.; Zentek, J. (2014): Effect of dietary zinc oxide on jejunal morphological and immunological characteristics in weaned piglets.
Journal of Animal Science; **92**(11), S. 5009–5018

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Continuing veterinary education Kleintier; **6**(5), S. 1–11

55) Paßlack, N.; Burmeier, H.; Brenten, T.; Neumann, K.; Zentek, J. (2014): Short term effects of increasing dietary salt concentrations on urine composition in healthy cats.
The veterinary journal; **201**(3), S. 401–405

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Journal of Nutritional Science; **3**, S. 1–10

57) Paßlack, N.; Mainzer, B.; Lahrssen-Wiederholt, M.; Schafft, H.; Palavinskas, R.; Breithaupt, A.; Neumann, K.; Zentek, J. (2014): Concentrations of strontium, barium, cadmium, copper, zinc, manganese, chromium, antimony, selenium and lead in the equine liver and kidneys.
SpringerPlus; **3**(1), S. 343

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BMC veterinary research; **10**, S. 163

59) Pieper, R.; Boudry, C.; Bindelle, J.; Vahjen, W.; Zentek, J. (2014): Interaction between dietary protein and the source of carbohydrates along the gastrointestinal tract of weaned piglets.
Archives of animal nutrition; **68**(4), S. 263–280

60) Richter, J.F.; Pieper, R.; Zakrzewski, S.; Günzel, D.; Schulzke, J.-D.; Van Kessel, A.G. (2014): Diets high in fermentable protein and fiber alter tight junction protein composition with minor effect on barrier function in piglet colon.
The British journal of nutrition; **111**(6), S. 1040–1049

61) Röhe, I.; Ruhnke, I.; Knorr, F.; Mader, A.; Goodarzi Boroojeni, F.; Löwe, R.; Zentek, J. (2014): Effects of grinding method, particle size, and physical form of the diet on gastrointestinal morphology and jejunal glucose transport in laying hens.
Poultry Science; **93**(8), S. 2060–2068

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Veterinary Science Development; **4**(2)

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Veterinary immunology and immunopathology; **157**(1/2), S. 65–77

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Archives of animal nutrition; **68**(6), S. 448–459

65) Starke, I.; Zentek, J.; Vahjen, W. (2014): Effects of the probiotic Enterococcus faecium NCIMB 10415 on selected lactic acid bacteria and enterobacteria in co-culture.
Beneficial microbes; **17**, S. 1–8

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Journal of Veterinary Science and Technology; **5**(2), S. 171

68) Starke, I.; Vahjen, W.; Pieper, R.; Zentek, J. (2014): The influence of DNA Extraction Procedure and Primer Set on the Bacterial Community Analysis by Pyrosequencing of Barcoded 16S rRNA Gene Amplicons.
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Molecular Informatics; **33**(3), S. 171–182

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PLoS one; **9**(1), S. e87007

Institute of Virology (WE05)

71) Abdelgawad, A.; Azab, W.; Damiani, A. M.; Baumgartner, K.; Will, H.; Osterrieder, N.; Greenwood, A. D. (2014): Zebra-borne equine herpesvirus type 1 (EHV-1) infection in non-African captive mammals.
Veterinary Microbiology; **169**(1-2), S. 102–106

72) Akkutay, A. Z.; Osterrieder, N.; Damiani, A.; Tischer, B. K.; Borchers, K.; Alkan, F. (2014): Prevalence of equine gammaherpesviruses on breeding farms in Turkey and development of a TaqMan MGB real-time PCR to detect equine herpesvirus 5 (EHV-5).
Archives of virology; **159**(11), S. 2989–2995

73) Azab, W.; Harman, R.; Miller, D.; Tallmadge, R.; Frampton, A. R.; Antczak, D. F.; Osterrieder, N. (2014): Equid herpesvirus type 4 uses a restricted set of equine major histocompatibility complex class I proteins as entry receptors.
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74) Brett, K.; Kordyukova, L. V.; Serebryakova, M. V.; Mintaev, R. R.; Alexeevski, A. V.; Veit, M. (2014): Site-specific S-acylation of influenza virus hemagglutinin: the location of the acylation site relative to the membrane border is the decisive factor for attachment of stearate.
The journal of biological chemistry; **289**(50), S. 34978–34989

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German Veterinary Medical Licensure Law

Non-official abbreviated and translated version based on the German "Verordnung zur Approbation von Tierärztinnen und Tierärzten" (TAppV) from 01.10.2006 with changes implemented on 20.12.2016 (published in Federal Law News 2016 Part I No. 60 Pages 3341-3344)

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Introduction

Based on § 5.1. of the Federal Veterinary Regulation … the German Federal Ministry of Health orders:

Part 1 - The Veterinary Education

§ 1 Objectives and Structure of the veterinary education

The objective is that graduates are scientifically and clinically trained for

- responsible and independent work
- continued education
- life-long learning

Emphasis should be laid on

- the essential / core knowledge in veterinary, scientific, interdisciplinary and methodological skills
- practical skills
- intellectual and ethical basics
- a professional one health-focused attitude

required to work in all fields of veterinary medicine.

The veterinary training consists of

- scientific-theoretical training (4.5 years, 3850 hrs) at a University
- extramural practical training of 1170 hours (with details)
- Two examination periods (preclinical & final clinical examinations)
- Regular study time is 5 years and 6 months (11 semesters) including final exams.

The veterinary education has to meet the standards as laid down in 2005/36/EG of the European Parliament.

§ 2 Modes of instruction

The veterinary school has to implement a curriculum that allows students to meet the educational objectives

- focus on content with relevance to the veterinary field
- linking theoretical and clinical subjects throughout the curriculum
- a mixture of lectures, large and small group practicals, clinical demonstrations and hands-on non-clinical and clinical animal work in all subjects listed in Appendix 1
- E-Learning / Blended Learning as an alternative teaching
- Number of students adjusted to the educational needs of the modules
- Leaning objectives and instructions should have a board interdisciplinary focus

Students have to enrol in all modules listed in Appendix 1 that are indicated as mandatory.

- combination of mandatory and electives courses should on average not exceed 30 hrs per week.
- The hrs assigned to the individual topics (Appendix 1) have to be met.
- The school has to offer a sufficient number of electives to meet the requirements of at least 308 hrs (84 hrs in preclinical phase).
- The interdisciplinary modules ("Querschnitt").

§ 3 Exploratory curriculum option
Veterinary schools under the following circumstances can reduce the number of hrs per subject by a maximum of 20% (in order to increase the hrs for other subjects)

- only in subjects with more than 28 hrs (and some additional exceptions).
- while maintaining the total of 3850 hrs.
- meeting the educational objectives including 2005/36/EG.
- changing schools (within Germany) must still be possible for students.
- approval of the Federal State authority is needed.
- assessment and report to the authority is required.

§ 4 New model curriculum
For exploring completely new veterinary educational models the Federal State authority can approve the implementation of a model curriculum.

- Educational objectives including 2005/36/EG must be met, and the process must be clearly and transparently prepared, communicated, overseen by external experts and assessed.
- Enrolment into the model curriculum and transfer to a regular veterinary curriculum need to be explicitly described.

Part 2 - Examination regulations

Section 1 - General issues

§ 5 Examination boards
All veterinary schools establish their own preclinical and clinical examination boards

- faculty members and lecturers who are proposed by the school and approved by the respective Federal State authority for a period of 4 years.
- Each board is chaired by an elected faculty member.
- The chairs oversee the organization of the respective examinations and assure that students that meet all prerequisites can take the exams during the periods as laid out in the school examination regulation (EPO).

§ 6 Responsible examination board
Students have to take all exams (including repetitions) at the veterinary school that they are / have been enrolled in.

§ 7 Registration for examination
For admission to the preclinical exams (TAppV §§ 19 & 22) and the clinical exams (TAppV § 29) students have submit a formal request to the chair of the examination board that includes documentation of all required course certificates.

§ 8 Admittance to the examinations
The decision on admission is taken by the examination board.

- Students are not admitted if they don't fulfil the requirements or if they have failed a specific exam three times (§ 17.1.3).
- After admission, exams have to be taken within the time frame as specified by the veterinary school.

§ 9 Examination process
Examiners are the respective members on the examination boards.

- Exams can be taken in front of several examiners, and the chair of the examination board can attend all exams and ask questions.
- The responsible Federal State authority can send observers into oral exams.

- On request, students can send up to five student observers and the State Veterinary Chamber can send an observer into each oral exam.

§ 10 Examination format
Exams can be written (paper- or PC-based, assay or multiple choice), oral, practical or in a mixture of formats.

- For larger topics, exams can be split into several parts.
- Groups of between 2 and 5 students have to be examined together in oral exams.
- The veterinary school defines the format for each subject (Appendix 1) and necessary deviations from TAppV (§§ 9, 11, 12, 14) in specific examination regulations (EPO).

§ 11 Examination date
Exams have to be scheduled in semester breaks close to the completion of the respective subjects.

- They should be completed before the beginning of the next term.
- The chair of the examination board together with the respective examiners prepares the examination schedule.
- The schedule has to allow for completing the course of study within the intended time (§ 1.2.2).

§ 12 Invitation, attendance
Students are invited by registered mail at least 7 days before the intended examination date

- Missing an exam requires a sufficient reason, otherwise the exam is counted as fail.
- Missing due to medical conditions requires a physician's certificate.
- Students not registering for exams in due time in the course of their study have to be invited to a mandatory counselling by the chair of the examination board.

§ 13 Objective of the examination process
The objective is to assess whether students have met the learning objectives to continue with their studies resp. to graduate from veterinary school

- In case of lack of study objects / living patients the examiner can decide to perform the examination on phantoms / models instead.

§ 14 Assessment
Oral / practical exams have to be documented in a log (Appendix 2) that specifies the specifically asked topics and gives a short reasoning on the grading.
Grading scheme
1. „excellent" (1)
2. "good" (2)”
3. "satisfactory" (3)
4. "sufficient" (4)
5. "insufficient” (5) = not passed

Exam results have to be communicated to the students after completion of the subject.

§ 15 Irregularities
For students disturbing an exam or caught cheating the exam can be terminated by the examiner, and the exam will be graded as insufficient / not passed.

§ 16 Grades and transcripts
The chair of the examination board collates the results and compiles the transcripts (Appendix 3 to 5).

- Transcripts contain the subjects, grades and final result of the subjects in the preclinical resp. the clinical part of the study.
- A subject is passed when at least a grade 4 (sufficient) has been achieved
- For completion of the preclinical and the clinical study periods all individual subjects / exams have to be passed
- The overall grade is calculated as the average of the subject-specific grades and rounded to 2 decimals. The final grades are
  - "excellent" for an average grade of < 1.5
  - “good” for average grades from 1.5 to 2.49
  - “satisfactory” for average grades from 2.5 to 3.49
  - “sufficient” for average grades from 3.5 to 4.0

§ 17 Repetition of exams
In each subject, students can attempt to pass the exam three times.

- After three failed attempts in a subject the chair of the examination board has to declare the student as finally failed and the student is exmatriculated
- Earliest date for a repeat exam is three weeks after the failed attempt
- In all repeat oral exams, a second member of the respective examination board has to be present and can ask questions
- In written and PC-based repeat exams a second examiner has to check the grading.

§ 18 Communication of results
The chair of the clinical examination committee communicates the final results (name of student, grades) to the respective Federal State authority.

Section 2 - Natural sciences part of the preclinical exam

§ 19 Examination subjects

This part of the preclinical exam consists of the following subjects

1. Physics including basics of radiation protection
2. Chemistry
3. Zoology
4. Botany of feeding, toxic and healing plants

These exams should be taken until the end of the first year of study.

§ 20 Prerequisites

For admittance to these exams the following certificates are required:

- Successful completion of seminars / exercises / practicals in physics, chemistry, zoology, botany, medical terminology.

§ 21 Content of natural sciences preclinical exam

The examination topics the four subjects should be limited to those with relevance to veterinary study and science.

Section 3 - Anatomical-physiological part of the preclinical exam

§ 22 Examination subjects

This part is composed of the following subjects

1. Anatomy,
2. Histology and Embryology,
3. Physiology,
4. Biochemistry und
5. Animal breeding and basics of genetics.

These exams should be taken until the end of the second year of study.

§ 23 Prerequisites

For admittance to these exams the following certificates are required:

- Completion of the natural sciences part within the past 1,5 years of study
- Successful completion of seminars / exercises / practicals in anatomy, histology, embryology, physiology, biochemistry, animal breeding and genetic
- Attendance of an extramural agricultural training of 70 hours on a state farm related to agricultural production / farming, animal production and breeding (alternatively four weeks on a privately operated farm)
- Attendance of at least 84 hours of electives in relevant topics

§ 24 Anatomy

Students have to be able to

- identify the internal organs in situ
- explain the anatomy of either an organ, organ system or part of the locomotor system based on anatomical specimens or models

§ 25 Histology and Embryology

Students have to

- show their proficiency in cell, tissue and organ structure at the macro- and microscopical level
- know the evolutionary theory of organ development

§ 26 Physiology
Students have to
- know the physiological functions of relevant organ systems within the organism
- be able to consider regulatory (feedback) loops and nutritional aspects.

§ 27 Biochemistry
Students have to
- know the biochemical and molecular basics and regulation of functional biological systems with emphasis on the metabolism and nutrition of domestic animal species.

§ 28 Animal breeding & genetics
Students have to
- be able to assess the genetic and production value of domestic animal species
- show sufficient knowledge on genetics, breeding of domestic animals and related legislation.

Section 4 - Clinical veterinary examination

§ 29 Subjects
The clinical veterinary examination covers the following subjects:
1. Animal husbandry, animal hygiene, agricultural sciences
2. Animal welfare and ethology,
3. Animal nutrition / feeding,
4. Clinical propaedeutic,
5. Virology,
6. Bacteriology und Mycology,
7. Parasitology,
8. Animal disease (outbreak) control and infection epidemiology,
9. Pharmacology & Toxicology,
10. Drug, narcotics and prescription legislation,
11. Avian diseases,
12. Diagnostic imaging,
13. General and specific pathology, specific anatomy and histology,
14. Food production and hygiene
15. Meat production and hygiene,
16. Milk production and hygiene,
17. Reproduction medicine,
18. Internal medicine,
19. Surgery and anaesthesiology
20. Veterinary legislation, professional knowledge and conduct.

§ 30 Specific regulations for the final exam subjects
The following subjects should not be completed before the end of the 8th semester:
General and specific pathology, specific anatomy and histology, Food production and hygiene, meat production and hygiene, milk production and hygiene, reproduction medicine, internal medicine, surgery and anaesthesiology veterinary legislation, professional knowledge and rules of professional conduct.

§ 31 Prerequisites
For admittance to the exams listen in § 29 the following certificates are required:
- Completion of the preclinical part of the curriculum
- Successful completion of all seminars / exercises / practicals related to the examination subjects
- Attendence of extramural practical training as specified in §§ 54 to 62

Before completion of the final exams listed in § 30 the following conditions have to be met:

- Successful completion of classes in biostatitics, feedstuff, immunology
- Having studied veterinary medicine for at least 5,5 years in total and at least 3 years after passing the preclinical exams
- Attendance of 224 hours of electives, excluding those taken during the preclinical phase of the curriculum (§ 23).

Section 5 - Content and exam subjects

§ 32 Animal husbandry, hygiene & agricultural science

Students have to know

- Husbandry and care of pets, companion and farm aninmals
- Impact of environment / management on health and production
- Impact of animal husbandry including residues on the environment
- Impact of animal husbandry and treatment on the quality of food of animal origin

§ 33 Animal welfare and ethology

Students have to show knowledge in

- species-appropriate housing and handling of animals
- animal welfare aspects in the context of animal trade, transport, slaughter, animal experiments
- animal welfare legislation with their ethical and scientific basis
- ethology

§ 34 Animal nutrition

Students have to show knowledge in

- feeding of animals with specific emphasis on pathogenesis of malnutrition
- impact of feeding on production and reproduction, environment and food safety
- dietetics and relevant animal feed legislation

§ 35 Clinical propaedeutics

Students have to

- show that they have acquired the relevant skills of clinical examination of animals

§ 36 Virology

Students have to show knowledge in

- virus types relevant for veterinary medicine
- transmission, progression, diagnosis, prevention and control / treatment of viral infections in animals
- relevance of virus-related zoonosis
- immunology, epidemiology and disease control

§ 37 Bacteriology und mycology

Students have to show knowledge in

- steps of bacterial (microbiological) diagnosis
- relevant bacteria and fungi
- transmission, progression, diagnosis, prevention and control / treatment of associated bacterial and fungal infections in animals
- relevance of bacterial and fungal zoonosis
- immunology, epidemiology and disease control

§ 38 Parasitology
Students have to show knowledge in
- steps of parasitological diagnosis
- relevant parasites
- transmission, progression, diagnosis, prevention and control / treatment of associated infections in animals
- relevance of parasitic zoonosis
- immunology, epidemiology and disease control

§ 39 Animal disease control and infection epidemiology
Students have to show knowledge in
- origin, epidemiology and economic impact of infectious animal diseases
- relevant international and national legislation
- disposal of animal waste and regulations on the processing of animal byproducts

§ 40 Pharmacology and toxicology
Students have to show knowledge on
- effects and side effects of relevant drugs and their interactions in healthy and diseased animals
- basics of therapeutic use of drugs including risks such as antimicrobial resistance for animals and humans
- pharmacokinetics and clearance
- therapy of acute and chronic intoxications

§ 41 Drug, narcotics and prescription legislation
Students have to show knowledge on
- the correct selection and prescription of drugs
- determination of maximal dosages and waiting times
- preparation of drugs based on given formulae including pricing
- relevant legislation on operating a veterinary pharmacy, prescribing drugs and narcotics
- measures to prevent residues in products of animal origin

§ 42 Avian diseases
Students have to show knowledge on
- origin, pathogenesis, diagnosis, prophylaxis and therapy of infectious diseases in poulty as well as in wild, pet and exotic birds
- development and treatment of medical conditions related to housing and feeding of birds

§ 43 Diagnostic imaging
Students have to show knowledge on
- the physical properties and effect of ionizing radiation
- basics of radiation biology and therapy
- effect of ionizing radiation on humans, animals, food, feed and the environment
- methods to measure exposure of humans to ionizing radiation
- detection of radioactive substances
- physical and technical principles of diagnostic imaging
- relevant legislation on protection of humans against radiation exposure

§ 44 General pathology and specific pathological anatomy and histology
Students have to show knowledge on
- the basics of the development, progression, main features and nomenclature of pathological processes including the pathology of relevant diseases
- the correct identification of pathological-histological specimen
- dissection of a carcass, examination of organs, documentation of results and writing a pathological report

§ 45 Food production and hygiene
Students have to show knowledge on
- examining a food product of animal origin (excluding milk and dairy products) and report writing (documentation)
- assessing the texture, composition and readiness for distribution
- relevance of food products for human nutrition
- production technology, microbiological, chemical and other properties with emphasis on food-hygienic and health-related issues
- food safety and quality at all steps of the food production chain (from stable to table) with emphasis on residuals, other risks and their prevention
- relevant legislation on food production of animal origin and food safety

§ 46 Meat production and hygiene
Students have to show knowledge on
- perfoming an ante- and post-mortem inspection of slaughter animals
- assessing the fitness for human consumption based on relevant legislation
- writing a report on their findings
- basics of slaughterhouse operation and processes as well as hygiene
- applying HACCP concepts along the meat-producing chain
- methods to prevent / reduce human exposure to foodborne pathogens
- epidemiological approaches and monitoring / surveillance systems

§ 47 Milk production and hygiene
Students have to show knowledge on
- examining and assessing a fresh milk sample or dairy product and report writing (documentation)
- production technology, microbiological, chemical and other properties of dairy products with emphasis on food-hygienic and health-related issues
- food safety and quality at all steps of the milk production chain with emphasis on residuals, other risks and their prevention
- relevant legislation on production of milk and dairy products

§ 48 Reproduction medicine
Students have to show knowledge on
- examining and assessing the reproduction & health status of adult animals or newborns
- diagnostic methods including diagnostic imaging
- writing a reproduction-related report including a treatment plan
- gynaecology including mastitis, obstetrics, relevant surgical interventions
- male reproductive functions and diseases
- breeding hygiene, artificial insemination and other biotechnical methods
- herd health monitoring

§ 49 Internal medicine
Students have to show knowledge on
- relevant internal and skin diseases in all animal species
- examination, diagnosis, prognosis, treatment and report writing
- herd health monitoring

§ 50 Surgery and anaesthesiology
Students have to show knowledge on
- examination, diagnosis, prognosis, treatment of health conditions that require surgery including report writing
- practical skills in surgery and anaesthesia
- ophthalmology, dentistry, hoof and claw diseases and horse shoeing

§ 51 Veterinary legislation, professional knowledge and conduct
Students have to show knowledge on
- veterinary laws of obligation including pre-purchase examinations
- due diligence obligations, liability legislation
- other legislation relevant for working in veterinary practice
- knowledge on the organisation of the veterinary profession
- running a veterinary practice and professional conduct

§ 52 Animal (species) clinics
In reproduction, surgery / anaesthesiology and internal medicine the relevant species (equines, ruminants, pigs, dogs, cats and pet animals) have to be covered. At veterinary schools that have designated species clinics the candidates can be assigned to specific clinics for the respective exams.

§ 53 Interdisciplinary lectures
Students throughout the curriculum have to attend a series of interdisciplinary lectures. In those, topics related to internal medicine, surgery, reproduction and herd health should be linked to aspects of pathology, clinical pharmacology, nutrition, animal husbandry and hygiene, animal welfare and ethology, epidemiology, animal disease control etc. in an interdisciplinary approach. Learning should be case-based and should also include aspects of diagnostic imaging & radiation, therapy, residues & antimicrobial resistance, environmental contamination, safety of food of animal origin, risk assessments, zoonotic diseases and other public health issues and painless animal euthanasia.

Part 3 - The extramural practical training (EPT)

§ 54 Extramural practicals
The EPT has to be completed during the lecture breaks at regular working hours and full time in the specified institutions. The timing in the curriculum is determined by the respective study regulations (StO).

Section 1 - Food safety and meat inspection

§ 55 Institutions, duration
EPT on control work in food hygiene including food sampling & examination

- 75 hrs within at least 2 consecutive weeks
- regional or national veterinary authority with responsibility for food-related inspections, food industry inspection agency or respective university institution / laboratory

EPT in an abattoir under supervision by the respective veterinary authority

- 100 hrs within at least 3 consecutive weeks, may be split into 2 sequences
- Either cattle or pigs or both species covered for at least 2 weeks;
- poultry if covered counts with a maximum of 30 hrs
- Abattoirs need to be officially registered with full time veterinary inspectors

§ 56 Learning objectives
Students during the EPT should aquire knowledge on all processes of veterinary overseeing and control of food-producing institutions and abattoirs as well as the sampling and testing of food of animal origin. They receive certificates from the respective institutions (appendix 6, 7).

Section 2 - Training in a veterinary practice or hospital

§ 57 Institutions, duration

- The first part (150 hrs within 4 weeks, not before the end of the 2rd year of study) can be competed either in a private veterinary practive, in a veterinary hospital, or both.
- The second part (700 hrs within 16 weeks, not before the end of the 4th year) can be completed in either a private veterinary practive, in a veterinary hospital, or a combination of up to four institutions (see also § 60). Having completed the classes in clinical radiology is a prerequisite.

§ 58 Practical training in a veterinary practice
Supervisors have to be practicing veterinarians with at least two years of experience in runninga practice, that run a veterinary pharmacy and the have not prosecuted for work-related issues.

Students have to be involved (under supervision) in all aspects of running a veterinary practice. They receive a certificate (Appendix 8, 9).

§ 59 Practical training in a veterinary hospital
This part of the EPT either has to be completed at a university teaching hospital or a privately operated institution that is approved be the State veterinary chamber as a clinic / hospital.

Students have to be involved (under supervision) in all aspects of running a veterinary clinic and should be encouraged to link their theoretical-scientific knowledge to the practical aspects of the work in the hospital. They receive a certificate (Appendix 10).

Section 3 - Elective training

§ 60 Institutions, duration
Part or the practical training in a veterinary practice or hospital (§ 57) can be completed in other institutions.

- Minimum of 75 hrs within 2 weeks; maximum of 350 hrs within 8 weeks
- University institute with scientific-medical focus
- Federal or State Research Institution with scientific-medical focus
- Veterinary administration / office / laboratory
- State herd health service or insemination / breeding station
- Pharmaceutical or feed-producing industry
- Zoological garden

Students receive a certificate (Appendix 11).

Section 4 - Training in veterinary administration

§ 61 Institutions, duration
This EPT has a duration of 75 hrs within at least 2 weeks and hast o be completed in a regional or State veterinary office.

§ 62 Learning objectives
Students should be introduced into the practical aspects of veterinary administration including the legal aspects, implementation and documentation.
Students receive a certificate (Appendix 12).

Part 4 - Approbation (license to practice)

§ 63 Application process
After having passed the final exams and thus completed veterinary studies, graduates have to apply to the respective Federal State authority to receive the approbation (license to practice). Details of the process covering all prossible situations are provided in this section.

§ 64 Approbation certificate
After approval, applicants receive an approbation certificate (Appendix 13).

Part 5 - Additional regulations

§ 65 Credit for course and exams done elsewhere
Students that have attended couses / modules and passed examinations at other veterinary schools can apply to receive credits for those courses and exams.

§ 66 Responsible institution
The decision of acceptance of prior modules and exams is take by the veterinary school where these students want to start or continue their veterinary curriculum.

§ 67 Exceptions
The veterinary school can make some exceptions (§§ 6, 21.2., 23.1, 31.2, 58.1) when giving credits for previous modules and exams, mainly in the context of timing of the respective activities.

§ 68 Transitional regulations
This section specifies details on when this (changed) Veterinary Medical Licensure Law has to be implemented in current and new (incoming) cohorts of veterinary students.

§ 69 Commencement
This law commences on October 1, 2006 [last amended on Dec. 20, 2016]

Final clause
The Federal Assembly (upper house of the German parliament) has agreed.

Appendix 1 (related to § 2.1, 2.2 and 2.3)

Subjects with total hours in curriculum *)
(Original source: BGBl. I 2006, 1841 - 1842)

1.	Physic including basics of radiation protection	56 Hrs
2.	Chemistry	126 Hrs
3.	Zoology	70 Hrs
4.	Botany of feeding, toxic and healing plants	70 Hrs
5.	Biostatistics	28 Hrs
6.	Professionalism (medical terminology, history of veterinary medicine, veterinary legislation)	42 Hrs
7.	Anatomy	224 Hrs
8.	Histology und embryology	98 Hrs
9.	Agricultural science	28 Hrs
10.	Animal husbandry & hygiene	56 Hrs
11.	General and clinical radiology / diagnostic imaging	42 Hrs
12.	Physiology; biochemistry	280 Hrs
13.	Animal breeding and genetics	84 Hrs
14.	Clinical propaedeutics	98 Hrs
15.	Animal welfare and ethology	84 Hrs
16.	Expertimental animal science	14 Hrs
17.	Animal nutrition and feed science	98 Hrs
18.	Veterinary laws and legislation, organisation of the profession	28 Hrs
19.	Avian diseases	28 Hrs
20.	Pharmakology, toxicology including clinical toxicology, drug and narcotic substance legislation, drug preparation and prescription legislation, residue development and prevention, drug-related risk assessment	126 Hrs
21.	Bacteriology, mycology, virology, parasitology, immunology, animal disease control, epidemiology	266 Hrs
22.	Diseases of reptiles, amphibic species, fish and bees	28 Hrs
23.	General pathology, specific pathological anatomie and histology, post-mortem examinations (dissections)	182 Hrs
24.	Internal medicine including clinical laboratory diagnostics, dietetics, animal reproduction medicine, neonatal medicine and udder diseases; Surgery and anaesthesiology, ophthalmology, dentistry, hoof and claw diseases, herd health management, ambulatory practice	420 Hrs
25.	Food technology and safety, food hygiene and toxicology, residues, legislation, examination; Milk production, technology, hygiene, quality assurance Meat and poultry meat production, technology, hygiene, quality assurance	252 Hrs
26.	Clinical training in subjects 19, 22 and 24	518 Hrs
27.	Interdisciplinary modules	196 Hrs
28.	Exercises / extramural practicals in agriculture / farming, animal production & breeding	70 Hrs
29.	Extramural practical training in a veterinary practice / hospital	850 Hrs

30. Extramural practical training in veterinary administration with focus on supervision of food production and meat inspection	175 Hrs
31. Extramural practical training in veterinary administration	75 Hrs
32. Elective courses	308 Hrs
	5.020 Hrs

*) Appendix 1 does not affect the naming of teaching modules offered and optional combination of subjects into new (interdisciplinary) teaching modules as implemented at the respective veterinary schools

Additional appendices (forms / certificates, not translated)

No.	Section (§)	Content / Template
2	14.1	Minutes / records of oral examinations
3	16.1	Transcript or records, preclinical Part 1
4	16.1; 16.4	Transcript or records, preclinical Part 2
5	16.1	Transcript of records, clinical & final
6	56.3	EPT certificate food hyhiene & saftely
7	56.3	EPT certificate abattoir
8	58.3	EPT certificate veterinary practice Part 1
9	58.3	EPT certificate veterinary practice Part 2
10	59.3	EPT certificate veterinary hospital
11	60.2	EPT certificate in other institutions
12	62.2	EPT certificate in veterinary administration
13	64	Certificate for approbation / licence to practice

Study Regulations for Veterinary Medicine

Dept. Veterinary Medicine, Freie Universität Berlin
Published in Freie Universität News 18/2017 on 08.06.2017

Non-official abbreviated version ttranslated by the Faculty of Veterinary Medicine,
Freie Universität Berlin (July 2017)

Preamble

Based on § 2 Section 1 sentence 9 of the German Veterinary Medical Licensure Law (TAppV) from 27. July 2006 (BGBl. I S. 1827), last amended on 20. December 2016 (BGBl. I. S. 3341) the following study regulations for veterinary medicinal course of study were enacted by the faculty board of the Dept. of Veterinary Medicine, Freie Universität Berlin on April 20, 2017:

Content

Appendix

Detailed course of study with topics and hours by semester

§ 1 Scope

This study regulation, on the basis of the TAppV and the Study and Examination Regulatory Framework (RSPO) of the University, defines content, structure and course work of the veterinary medical curriculum at the Freie Universität Berlin.

§ 2 Objectives

The veterinary curriculum shall provide the students with the intellectual and ethical foundation, the appropriate professional attitude and sufficient knowledge and skills to – after graduation – practice veterinary medicine as defined in § 1 of the German Federal Veterinary Ordinance (BTÄO) from 20. November 1981 (BGBl. I S. 1193), last amended on 31. August 2015 (BGBl. I S. 1474).

§ 3 Start of study, duration

(1) Enrolment into the veterinary curriculum is only possible in the fall semester.

(2) The regular time to degree including the final examination period is five years and six months (§ 1 section 2 sentence 2 TAppV).

§ 4 Introduction into the responsibilities of the veterinary profession

Incoming students are informed about the range of veterinary responsibilities, areas of work within the profession, course of study and opportunities for continued education and specialization. The respective regulations (BTÄO; TAppV, RSPO, study regulation, examination regulation) are introduced in the most recent version.

§ 5 Student advisory services

General student advisory services are provided by the student services and psychological counselling office of the Freie Universität Berlin. Specific issues related to the veterinary curriculum are addressed by the Faculty / Departmental study office.

§ 6 Modes of teaching, courses

(1) During the mandatory courses of the curriculum students are taught the topics relevant for the subjects (exams) as listed in Appendix 1 of § 2 TAppV.

(2) The mandatory interdisciplinary courses should deepen the understanding of complex cross-subject problems and are primary offered as seminars and blended-learning modules.

(3) Elective courses should expand and deepen the range of topics and provide an opportunity for students to focus on specific subjects. Regular attendance of chosen electives is required; assessments are not done. Assistance in routine clinical, laboratory and other work outside the regular curriculum hours can be accounted for as intensified elective training.

(4) Modes of teaching:

a) Lectures (V)

Lectures convey basic theoretical knowledge in a systematic fashion and lay the foundation for the seminars and practical exercises.

b) Seminars (S)

During seminars, topics are emphasized in smaller groups and with practical elements. Instructions can be problem-based. Regular attendance has to be documented.

c) Practical exercises (Ü)

Practical exercises including clinical demonstrations are intended to deepen the understanding of theoretical topics and to acquire basic hands-on skills. Regular and successful attendance has to be documented.

(5) The above listed modes of instruction can be implemented in a blended learning format during different phases of the curriculum. On-site instructions are there combined with internet-based e-learning modules. The latter are offered through the electronic learning environment of the Freie Universität.

(6) Students have to document their progression through the curriculum by certificates and transcripts. For graduation, all required course work has to be shown and all exams have to be passed. Graduation is not possible when at least one of the requirements has definitively not been met at any of the German veterinary schools.

(7) Regular attendance of electives has to be documented. Individual claims to attend specific electives do not exist.

§ 7 Structure of the curriculum

(1) The curriculum is structured in a preclinical and a clinical part as laid out in §§ 7, 8, 20, 23 und 31 of the TAppV. These parts are completed with the respective examinations. Details on curriculum hours and exam topics are specified in the appendix to § 1 section 2 TAppV.

(2) Prerequisite for entering the clinical phase is the completion all exams of the preclinical phase. Students that have passed all but 1 or 2 preclinical exams are conditionally admitted to the modules of the 5th semester (fall semester). This conditional admission ends if the students do not take and pass these exams until December 1st of that semester. This is also applicable to students that had valid reasons for not attending some of the regularly scheduled preclinical exams. In addition, exceptions can be made by the associate dean for education in cases of hardship.

(3) Students are entitled to attend the required modules only at the time of occurrence in their respective regular curriculum.

(4) Successful attention of all extramural practical training modules as laid out in § 1 Section 2 Part 2 TAppV has to be documented to the examination board with indication of the training institution.

§ 8 Study content

The content of the veterinary curriculum is based on the TAppV and compiled in subject specific learning objectives that cover all modules taught during the preclinical and clinical phase of the curriculum

§ 9 Commencement and transition regulations

This regulation becomes effective the day after publication in the official news of the Freie Universität Berlin. At the same time the study regulation published on 27. February 2007 (FU News 75/2007, S. 2398), last amended on 7. July 2011 (FU News 1/2012, S. 6) ceases to be in force.

(3) This regulation is binding for students immatriculated after enforcement. For students already immatriculated before the date of enforcement, all modules completed under the previous regulation will be accepted until 30. Sept. 2017.

Appendix – Modules within the curriculum

Modules in semester 1	Format	Units*
Basic zoology	Lecture	4
Basic botany	Lecture	2
Organic / inorganic chemistry	Lecture	4
Physics and medical radiology	Lecture	2
Physics practicals	Exercise	2
Medical terminology	Lecture	1
Anatomy I	Lecture	2
Gross anatomy dissection I	Exercise	4
Histology I	Lecture	1
Histological practicals I	Exercise	2
History of the veterinary profession	Lecture	1
Veterinary legislation, professional knowledge and conduct I	Lecture	1
Interdisciplinary modules on professional skills	Lecture	1
Modules in semester 2	**Format**	**Units***
Botany of feeding, toxic and healing plants	Lecture	2
Chemistry practicals	Exercise	3.5
Anatomical seminar / Situs I	Exercise	1.5
Animal welfare ethics and law	Lecture	2
Introduction to ethologie	Lecture	2
Farming and animal husbandry	Lecture	2
Biostatistics	Lecture / Exercise	2
Biochemistry I	Lecture	4
Biochemistry seminar	Seminar	0.5
Physiology I	Lecture	2
Introduction to animal breeding	Lecture	2
Animal breeding and assessment	Lecture	2
Practicals in animal breeding and assessment	Exercise	1
Interdisciplinary modules on professional skills	Lecture	1

Modules in semester 3	Format	Units
Anatomy II	Lecture	2
Anatomical practicals II	Exercise	4
Physiology II	Lecture	4
Physiology seminar	Seminar	0.5
Biochemistry II	Lecture	3
Biochemical practicals	Exercise	1.5
Interdisciplinary modules on professional skills	Lecture	1
Modules in semester 4	**Format**	**Units**
Anatomical seminar / Situs II	Exercise	2
Embryology	Lecture	1
Histology II	Lecture	1
Histological practicals II	Exercise	2
Biochemistry & Physiology within clinical laboratory diagnostics	Lecture	2
Physiology practicals	Exercise	2.5
Animal feed practicals	Exercise	2
Animal welfare	Exercise	2
Interdisciplinary modules on professional skills	Lecture	1
Modules in semester 5	**Format**	**Units**
Basic and advanced animal nutrition	Lecture	3
Animal nutrition practicals	Exercise	2
Virology I	Lecture	2
Introduction to infectious diseases / General bacteriology and mycology	Lecture	2
Animal and environmental hygiene	Lecture	2
Animal husbandry	Lecture	2
General pathology	Lecture	3.5
General pathology practicals	Exercise	0.5
Parasitology	Lecture	3
Pharmacology & toxicology	Lecture	4
Clinical radiology I	Lecture	1
Introduction to surgery	Lecture	2
Clinical propaedeutic – small animals	Exercise	1.75
Clinical propaedeutic – reproduction medicine	Exercise	1.75

Clinical propaedeutic – ruminants and swine	Exercise	1.75
Clinical propaedeutic – horses	Exercise	1.75
Basic and advanced immunology	Lecture	2
Modules in semester 6	**Format**	**Units**
Advanced Pharmacology & toxicology	Lecture	2
Virology practicals	Exercise	1
Advanced virology	Lecture	1
Microbiology practicals	Exercise	2
Specific bacteriology and mycology	Lecture	1
Meat hygiene I	Lecture	1
Milk hygiene	Lecture	2
Food hygiene I	Lecture	1
Parasitology practicals	Exercise	2
Clinical demonstrations I – small animals	Exercise	2
Clinical demonstrations I – reproduction medicine	Exercise	1
Clinical demonstrations I – ruminants and pigs	Exercise	1
Clinical demonstrations I – horses	Exercise	2
Clinical laboratory diagnostics - practicals	Exercise	2
Organ centred education module 1: introduction	Lecture	1
Organ module 2: gynaecology and andrology	Lecture	3
Organ module 3: gastrointestinal system	Lecture	4
Organ module 4: liver	Lecture	1
Organ module 5: kidneys	Lecture	0.5
Pathological practicals related to organ module I	Exercise	0.5
Interdisciplinary topics	Lecture	3.5
Modules in semester 7	**Format**	**Units**
Animal disease control I	Lecture	1
Meat hygiene II	Lecture	1
Food technology & hygiene practicals I	Exercise	2
Milk hygiene practicals	Exercise	2
Food technology	Lecture	2
Gross pathology demonstrations I	Exercise	1
Drug preparation; drugs, narcotics and prescription legislation	Lecture / Exercise	2
Drug preparation practicals	Exercise	1

Clinical radiology II	Lecture	2
Clinical demonstrations II – small animals	Exercise	2
Clinical demonstrations II – reproduction medicine	Exercise	1
Clinical demonstrations II – ruminants and pigs	Exercise	1
Clinical demonstrations II – horses	Exercise	2
Surgery and anaesthesiology	Lecture	1
Organ module 6: delivery and neonatal period	Lecture	3
Organ module 7: respiratory system	Lecture	1.5
Organ module 8: cardiovascular system	Lecture	1
Organ module 9: blood	Lecture	2.5
Pathological practicals related to organ module II	Exercise	0.5
Interdisciplinary topics	Lecture	4
Modules in semester 8	**Format**	**Units**
Animal disease control II	Lecture	2
Food technology & hygiene practicals II	Exercise	2
Meat hygiene III	Lecture	2
Gross pathology demonstrations II	Exercise	1
Avian diseases	Lecture	2
Clinical demonstrations - poultry	Exercise	2
Ophthalmology practicals	Exercise	2
Veterinary legislation, professional knowledge and conduct II	Lecture	2
Diseases of bees	Lecture	1
Diseases of reptiles, amphibians and fish	Lecture	1
Organ module 10: musculoskeletal system	Lecture	3
Organ module 11: nervous system	Lecture	2
Organ module 12: metabolic system	Lecture	2
Organ module 13: mammary gland	Lecture	2
Organ module 14: skin	Lecture	1
Organ module 15: regulatory system	Lecture	1
Pathological practicals related to organ module III	Exercise	0.5
Interdisciplinary topics	Lecture	3.5
Experimental animal science	Lecture	1

Modules in semesters 9 & 10	Format	Units
Clinical rotation – small animal clinic	Exercise	5.5
Clinical rotation – equine clinic	Exercise	5.9
Clinical rotation – clinic for ruminants and swine	Exercise	5.4
Clinical rotation – clinic for animal reproduction	Exercise	5.4
Clinical rotation – avian diseases	Exercise	0.8
Clinical rotation – pathology	Exercise	4.6
Clinical rotation – meat hygiene	Exercise	2.4
Electives	**Format**	**Units**
Electives during the preclinical phase	Exercise / Seminar / Lecture	6
Electives during the clinical phase	Exercise / Seminar / Lecture	16

Total units in curriculum		**275**
Total hours in curriculum		**3850**

*one unit equals 14 curricular hours

Regulations for the preclinical and clinical examinations in Veterinary Medicine

Dept. Veterinary Medicine, Freie Universität Berlin
Published in Freie Universität News 18/2017 on 08.06.2017

Non-official abbreviated translation. Translated by the Faculty of Veterinary Medicine, Freie Universität Berlin (Juli 2017)

Preamble

Based on § 10 Section 4 of the German Veterinary Medical Licensure Law (TAppV) from 27. July 2006 (BGBl. I S. 1827), last amended on 20. December 2016 (BGBl. I. S. 3341) the following additional examination regulations (EPO) for the preclinical and the clinical part of the veterinary medicinal course of study were enacted by the faculty board of the Dept. of Veterinary Medicine, Freie Universität Berlin on April 20, 2017:

Content

Appendix:

§ 1 Scope

This examination regulation, on the basis of the TAppV and the Study and Examination Regulatory Framework (RSPO) of the University, defines the format, process and timing of all tests and examinations required during the preclinical and clinical phase of the veterinary medical course of study at the Freie Universität Berlin.

§ 2 Examination board

(1) The University establishes State-approved examination boards for the preclinical and the clinical exams. Each board consists of a chair, one or more vice chairs and all examiners for the respective subjects. All examination board members are appointed by the Federal State authority for a period of four years. Chairs have to be faculty members; examiners can be all qualified lecturers for the respective subjects.

(2) The chair of each examination board is responsible for supervising the examination process. She/he assures that students becoming eligible to take the respective exams are admitted and tested in due time.

(3) The examination board meets at least once a year on invitation by the chair for a non-public meeting. It has a quorum if then chair, at least one vice chair and at least five members are attending. Votes are taken with simple majority; in tied votes the chair decided.

§ 3 Examination process

(1) At the beginning of each examination, students have to show an official ID and declare that they are fit (healthy enough) to take the exam.

(2) Exams can be taken in writing, electronically, orally, with practical components, as a multiple choice (MC) test or in a combination of these formats.

(3) Oral, practical or oral-practical (combined) exams require students to solve one or more problems / tasks. In oral exams, at least 2 and not more than 5 students have to be examined together (as a group). In oral exams the duration has to be at least 15 minutes and should not exceed 30 minutes per candidate in the group. In combined exams the oral part has to meet the afore mentioned requirements.

(4) Written and MC test-based exams require the students to solve one or more tasks in writing; this can be paper-based or electronically. Details are provided in § 12 RSPO as well as § 14 Section 2 and § 17 Section 3 TAppV.

(5) The format and timing of all exams is provided in the Appendix.

§ 4 Multiple-Choice examinations

(1) MC exam questions have to (a) be reviewed by two members of the respective examination board, (b) meet the objectives laid down in § 13 Section 1 TAppV and (c) yield reliable results.

(2) In case of obvious problems with individual exam questions the examiner has to forward the whole exam documentation to the chair of the respective examination board prior to communication of the results. The chair examines the case and might consult the examination board. Questions with obvious problems have to be excluded from the grading process. If more than 15% of all questions are considered problematic, then the complete examination has to be repeated.

(3) Students have to reach at least 50% of all points (40% in cases where the overall exam results of the tested cohort are substantially below average) in order to pass an MC exam.

(4) MC exam results are graded as follows:

- „excellent" (1) if the student has achieved between 75 and 100%,
- „good" (2) if the student has achieved between 50 and < 75%,
- „satisfactory" (3) if the student has achieved between 25 and <50%,
- „sufficient" (4) if the student has achieved between 0 and <25%

of the points beyond the fail/pass limit as defined in section 3 above.

(5) Exceptions are possible if both examiners that have composed / reviewed the exam agree or if the MC part of a combined exam does not count for more than 25% of the final grade.

§ 5 Communication of the examination results

(1) The results of oral, practical or combined exams have to be verbally communicated to the student immediately after the exam with a brief justification.

(2) Results of written and electronic exams have to be communicated to the students in an appropriate way (respecting data privacy) within 3 weeks of the examination date.

§ 6 Additional within-term tests

(1) Oral, written or practical tests / quizzes within the semester can be used to document attendance and learning progress in seminars, exercises and practicals. The successful completion of mandatory seminars, exercises and practicals is a prerequisite for admission to the respective formal examination periods.

(2) Information on the successful completion of mandatory seminars, exercises and practicals is transferred to the State examination office at the end of each semester.

(3) Description of the format, process, content and pass/fail requirements for the within-term tests is part of the description of the respective modules in the electronic course catalogue. The course catalogue is presented and accepted by the faculty board before the start of each semester. Details are provided in the study regulation (StO).

§ 7 Quality assurance

The State examination office generates a report with the performance (grade distribution) for each exam at least once a year. For written and practical exams, additional information can be compiled for quality assurance purposes. These reports are submitted to the respective examination boards.

§ 8 Commencement and transition regulations

This regulation becomes effective the day after publication in the official news of the Freie Universität Berlin. At the same time the examination regulation published on 16. October 2007 (FU News 5/2008, S. 72), last amended on 7. July 2011 (FU News 1/2012, S. 6) ceases to be in force.

(3) This regulation is binding for students immatriculated after enforcement. For students already immatriculated before the date of enforcement, all exams completed under the previous regulation will be accepted until 30. Sept. 2017.

Appendix

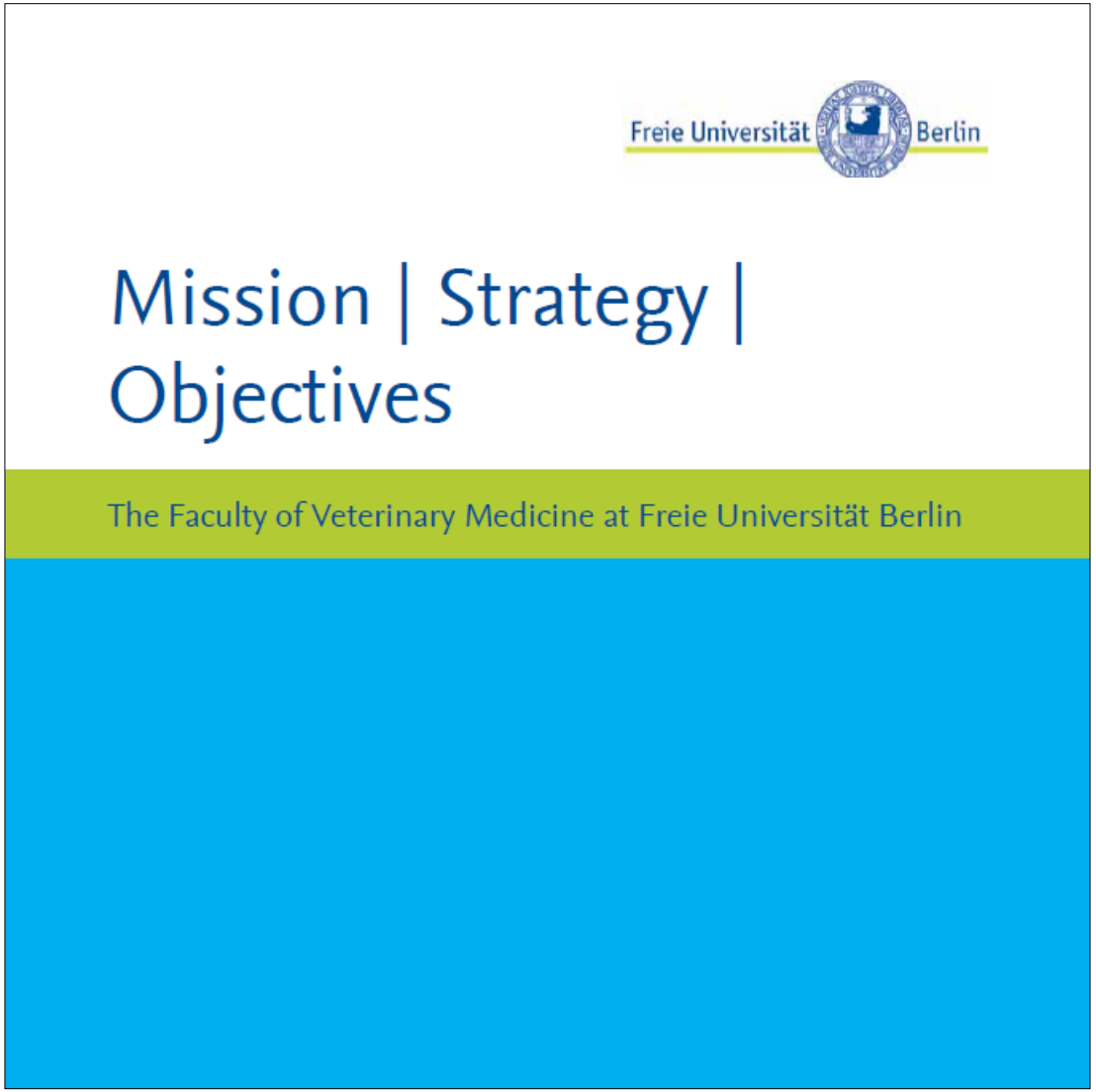
Examination format and timing by subject

Subject	Time in curriculum	Format	Legal basis
A. Preclinical examination period			
Natural sciences part („Vorphysikum“)			**§ 19 TAppV**
Botany of feeding, toxic and healing plants	Lecture-free time after the 2. Semester	Oral exam 100%	§ 21 TAppV
Chemistry	Lecture-free time after the 2. semester	Oral exam 100%	§ 21 TAppV
Physic including basics of radiation protection	Lecture-free time after the 2. semester	Oral exam 100%	§ 21 TAppV
Zoology	Lecture-free time after the 2. semester	Oral exam 100%	§ 21 TAppV
Anatomical-physiological part („Physikum“)			§ 22 TAppV
Biochemistry	Lecture-free time after the 3. semester	Oral exam 100%	§ 27 TAppV
Animal breeding and genetics	Lecture-free time after the 3. semester	Written exam 100%	§ 28 TAppV
Anatomy	Lecture-free time after the 4. semester	Oral exam with practical elements 100%	§ 24 TAppV
Histology and embryology	Lecture-free time after the 4. semester	Written exam 100%	§ 25 TAppV
Physiology	Lecture-free time after the 4. semester	Oral exam with practical elements 100%	§ 26 TAppV
B. Clinical examination period			
Animal husbandry & animal hygiene	Lecture-free time after the 5. semester	Oral exam 100%	§ 32 TAppV
Animal welfare and ethology	Lecture-free time after the 5. semester	Multiple Choice-Test 100%	§ 33 TAppV
Animal nutrition and feed science	Lecture-free time after the 5. semester	Oral exam with practical elements 100%	§ 34 TAppV
Clinical propaedeutic	Lecture-free time after the 5. semester	Oral exam with practical elements 100%	§ 35 TAppV
Virology	Lecture-free time after the 6. semester	Oral exam 100%	§ 36 TAppV
Bacteriology & mycology	3 examination parts		§ 37 TAppV
1 Introduction to bacteriology, mycology and infectious diseases	Within term test during the 5. semester	Multiple Choice-Test 40%	
2 Microbiology practicals	Within term test during the 6. semester	Practical task with written report 20%	
3 Specific bacteriology and mycology	Lecture-free time after the 7. semester	Oral exam 40%	
Parasitology	2 examination parts		§ 38 TAppV
1 **Parasitology practicals**	Within term test during the 6. semester	Practical task 25%	

	2	**Parasitology**	Lecture-free time after the 6. semester	Oral exam 75%	
Animal disease control and infection epidemiology			Lecture-free time after the 8. semester	Oral exam 100%	§ 39 TAppV
Pharmacology and toxicology			Lecture-free time after the 6. semester	Oral exam 100%	§ 40 TAppV
Drug and narcotic substance legislation			3 examination parts		§ 41 TAppV
	1	**Pharmaceutical galenic**	Lecture-free time after the 7. semester	Practical task with written report 20%	
	2	**Drug prescription**	Lecture-free time after the 7. semester	Written task 20%	
	3	**Legislation**	Lecture-free time after the 7. semester	Oral exam 60%	
Avian diseases			Final examination during 11. semester	Oral exam with practical elements 100%	§ 42 TAppV
Radiology			Lecture-free time after the 7. semester	Oral exam with practical elements / OSCE 100%	§ 43 TAppV
General pathology, specific pathological anatomy and histology			4 examination parts		§ 44 TAppV
	1	**General pathology**	Lecture-free time after the 8. semester	Multiple Choice test 25%	
	2	**Specific pathology**	Lecture-free time after the 8. semester	Multiple Choice test 35%	
	3	**Histopathology**	9./10. semester during rotations	Oral exam with practical elements 20%	
	4	**Post-mortem examination practicals**	9./10. semester during rotations	Oral exam with practical elements and written report 20%	
Food technology & food hygiene			Final examination during 11. semester	Oral exam with practical elements 100%	§ 45 TAppV
Meat hygiene			2 examination parts		§ 46 TAppV
	1	**General and specific meat hygiene**	Lecture-free time after the 8. semester	Multiple Choice test 40%	
	2	**Meat hygiene practicals**	Final examination during 11. Semesters	Oral exam with practical elements 60%	
Milk hygiene			2 examination parts		§ 47 TAppV
	1	**Milk examination report**	Within term test during the 7. semester	Practical task with written report 30%	
	2	**Milk hygiene**	Final examination during 11. Semesters	Multiple Choice test 70%	

Animal reproduction	Final examination during 11. semester	Oral exam with practical elements 100%	§ 48 TAppV
Internal medicine	Final examination during 11. semester	Oral exam with practical elements 100%	§ 49 TAppV
Surgery and anaesthesiology	Final examination during 11. semester	Oral exam with practical elements 100%	§ 50 TAppV
Veterinary laws and legislation, organisation of the profession	Final examination during 11. semester	Oral exam 100%	§ 51 TAppV

Appendix to 1.1.2.: Mission | Strategy | Objectives of the Faculty of Veterinary Medicine at Freie Universität Berlin



Mission | Strategy | Objectives

The Faculty of Veterinary Medicine at Freie Universität Berlin

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»Veritas, Iustitia, Libertas
Truth, Justice, Liberty«

FOUNDING PRINCIPLES OF FREIE UNIVERSITÄT BERLIN

True to the founding principles of Freie Universität Berlin, the Faculty of Veterinary Medicine meets societal challenges in research and academic teaching with this mission statement in mind. It is these principles that guide the faculty's identity and the integration into all endeavors of the university.

Our students, staff, and faculty are the key resources which contribute to our level of performance. Together, we maintain excellent standards in teaching, research and provision of services and ensure their sustained development.

All are invited to be actively involved in this endeavor.

Univ.-Prof. Dr. Jürgen Zentek
Dean

About Freie Universität Berlin

Freie Universität Berlin is one of the eleven German universities that have been designated as outstanding within the framework of the Initiative for Excellence. In keeping with its self-conception as an International Network University, Freie Universität Berlin seeks to promote international cooperations, strategic alliances and academic networks. The university sustainably supports junior scholars and scientists, as well as the successful acquisition of external funding for research and teaching.

Freie Universität is a full-spectrum university, comprising twelve departments and three Central Institutes that together offer more than **150 different academic programs** in a broad range of disciplines.

The **system accreditation** is implemented at Freie Universität Berlin to assure quality in the various study programs.

The Faculty of Veterinary Medicine at Freie Universität Berlin

About the Faculty of Veterinary Medicine

The Faculty of Veterinary Medicine looks back on a long, successful and rich history of veterinary medical training, which extends back to 1790. There have been numerous changes, most recently the merger between the years 1992 and 1997, of the Faculty of Veterinary Medicine at Freie Universität Berlin and the Agricultural and Veterinary Faculty of Humboldt-Universität of Berlin. As one of the five German training establishments for veterinary medicine and related professions, the faculty is a renowned center for veterinary medical training, research and veterinary services. We have a strong research focus, especially in the fields of infection medicine, resistance research and animal welfare as well as safe and high quality food production. The faculty is currently located at four sites in Berlin (Düppel, Dahlem, Mitte) and Brandenburg (Bad Saarow). Each contains different specialized institutions. The research activities of the 20 scientific institutions, including the 5 clinics, are tied into a worldwide network of veterinary expertise and related disciplines.

With more than 470 employees, our activities include all areas of contemporary and progress-oriented veterinary medicine. This follows the »One Health« concept, in other words, **the inseparability of the welfare of animals, humans and the environment.** It is bound to current scientific advances. In particular, the faculty count amongst its research and teaching the following specializations:

- Optimized patient care grounded in evidence-based veterinary medicine
- Safety and sustainability in the production of high-quality food of animal origin
- The health and well-being of people through the control of infectious diseases (zoonoses) and the study of basic disease and resistance mechanisms (»One Health« approach)
- Animal protection in the complex realm of interactions between animals, humans and the environment

The Faculty of Veterinary Medicine is also a teaching institution, educating more than 1,600 students, including doctoral candidates, who are distributed amongst **five ongoing degree programs:**

- State examination degree program for veterinary medicine
- Bachelor degree program in equine science
- Master's degree program in equine medicine
- Master's degree program in small animal science
- Dahlem Research School (DRS) doctoral studies in Biomedical Sciences

In addition, we offer a variety of training and advanced education opportunities in veterinary specializations. These include many opportunities for earning academic degrees, additional qualifications, as well as life-long training. The training of veterinary specialists is integrated into the National System of Specialization as well as into the college systems of the European Board of Veterinary Specialization (EBVS).

In addition to an extensive range of patient care on our campus in Düppel, the faculty offers a wide spectrum of laboratory examinations for veterinary practitioners, for clinics and for the public. Our activities are monitored by professional quality management systems. We are linked across disciplines with regional, national and international authorities and organizations and non-university research institutes, with established colleagues, as well as companies and industry.

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»The Faculty of Veterinary Medicine qualifies«

We are an excellent training and research facility. In 2007, the faculty was positively evaluated by the EAEVE (European Association of Establishments for Veterinary Education) in light of its state examination degree program and was included in the list of recognized training institutions. Freie Universität Berlin, of which we are a part, is system-accredited. Furthermore, our bachelor degree program in equine science as well as both of our Master's degree programs were awarded the German Accreditation Council's seal of quality, one of the first of Freie Universität's programs to do so since the end of 2016. In addition, the DRS doctoral program in Biomedical Sciences was given the highest award in 2017.

We would like

- to train outstanding veterinarians and ensure their training and application of their specializations in various areas of expertise,
- to enable students to work in scientific endeavors, to think in a performance-oriented manner, as well as to make ethical decisions,
- to prepare our students for their professional fields of activity and provide them with the necessary professional knowledge, clinical-practical skills and methods,
- to advise our students in all phases of their degree programs,
- to offer attractive training and advanced education opportunities,
- to contribute to the replacement, reduction and refinement in the use of animals in biomedical research
- to support our employees in their personal development as well as
- to promote junior scientists and thereby increase the proportion of women in scientific carriers.

We will

- adapt our curriculum and our learning objections to meet specialized and societal challenges, through constant dialog with students, teachers and the profession,
- improve academic success, through targeted and degree-related offers (Mentoring), as well as improving the development and offers of modern forms of teaching,
- closely interlink teaching and research through the integration of students working on research projects with one another,
- teach »Day One Competences« according to international standards,
- continuously improve the qualification of our teachers by sharing appropriate training in university teaching,
- facilitate the transition from university studies to career development by providing a wide range of information events, as well as
- effectively provide support for technical specialization needs by supplying appropriate training and further education programs.

»The Faculty of Veterinary Medicine leads in research and generates new knowledge«

We are

- a leading research faculty with an outstanding research profile. Research-related performance indicators show our results are placed at the highest international level.
- a faculty well supported by external funding.
- a networked faculty. Our veterinary and biomedical competences are seen in the firm integration in knowledge alliances between other departments at Freie Universität Berlin and the Charité – Universitätsmedizin Berlin. Integration fields include health and quality of life, biomedical principles, material and human-environment interactions.
- an established member of high-performance networks outside Freie Universität Berlin. Due to its integration with large research associations, its launching of joint research projects as well as appointments for outstanding professors, the faculty is regionally, nationally, and internationally networked.

We would like

- to provide a creative development environment for existing and new research and innovation,
- to maintain our success in the acquisition of external funding and our high level of publication,
- to promote application-oriented research and knowledge transfer through increased cooperation with stakeholders from business and politics,
- to promote current knowledge in disease prevention and the treatment of animals through basic, applied and clinical research,
- to further optimize, through research, the quality and safety of animal-based food, as well as their production in relation to animal welfare and animal health,
- to tackle challenges in all interactions between animals and humans through innovative approaches, including infectious diseases and the emergence and spread of resistance in pathogens, as well as
- to help in the replacement, reduction and refinement in the use of animals in biomedical research (the 3R principle).

We will

- meet contemporary challenges by future-oriented academic structural developments,
- further expand infection medicine with its focus on resistance research and
- strongly and structurally interlink areas of expertise along the production of healthy and safe food of animal origin (food chain).

»The Faculty of Veterinary Medicine is a gateway to the world«

We are

- a host institution for foreign scientific researchers as well as for foreign students,
- a participant in numerous international exchange programs in the fields of study and research for students, research associates and other employees,
- highly involved and committed to a number of projects for international development aid in veterinary medicine,
- proud to be a faculty of internationally sought-after partners for all levels of teaching, research and services and
- are aware of the societal challenges of increased migration of veterinarians from non-EU countries.

We would like

- to be a model for cultural diversity, integration, openness and tolerance with a high proportion of international employees and students,
- to expand existing international university partnerships and thereby promote a lively exchange of students, employees and knowledge between partners,
- to facilitate the development of international contacts with our students and to refine their appreciation of international societal responsibility as well as
- to support migrant veterinarians in their qualifications for working in the German labor market.

We will

- further strengthen and expand our existing central and international university partnerships within the framework of cooperation agreements,
- reinforce the portfolio of our international partnerships, exclusive of existing cooperation partnerships and
- additionally support international and national student mobility.

»The Faculty of Veterinary Medicine promotes junior scientists«

We are

- the initiator of the structured doctoral program in Biomedical Sciences at the Dahlem Research School (DRS), which trains our junior scientists to the highest international standard,
- involved in various other structured doctoral programs, such as with the Center of Infection Biology and Immunity,
- a faculty that annually guides approximately 80 doctoral candidates to qualify with Dr. med. vet. degrees and approximately 20 doctoral candidates to graduate with Ph.D. degrees (Doctor of Philosophy),
- providers of a w ide range of specialization programs at national and Europeans levels, including a number of European Diplomate programs which are certified by European colleges as well as
- a faculty which annually mentors young scientists to complete their habilitation degrees.

We would like

- to further promote scientific work of the highest quality in accordance with the rules of good scientific practice,
- to lead junior scientists to successfully achieve the highest qualification levels (junior professorships and habilitation degrees),
- to support and promote young scientists, in particular female scientists and clinical researchers,
- to comply with and advance the rules of good scientific practice in all our activities.

We will

- expand the targeted recruitment of junior scientists from amongst our students,
- further increase the proportion of students in structured doctoral programs,
- support junior scientists on their academic career path,
- further encourage experienced and trained junior scientists in their function as mentors and motivators and in particular,
- we will significantly improve the compatibility of scientific careers with active family lives.

»The Faculty of Veterinary Medicine promotes lifelong learning and specializations«

We are

- proud of our Small Animal Sciences and Equine Medicine master's degree programs. The degree programs are among the first degree programs at Freie Universität Berlin to carry the seal of quality from the German Accreditation Council.
- Organizers and hosts of numerous qualification programs and training courses for all professional areas of veterinary medicine. We have optimally equipped structures and premises which are specially designed for veterinary needs.

We would like

- to further expand the importance of training of veterinary specialists within the college system of the European Board of Veterinary Specialisation (EBVS) and set up more certified training programs for this purpose,
- to regularly offer internationally recognized internships and residency programs in all clinics and paraclinical institutions as well as
- to promote and support life-long learning in veterinarians, as well as in our employees.

We will

- continually upgrade the equipment in our facilities for events and thereby ensure that our offer of high-quality training and further education remains attractive,
- advertise and promote our activities for professionals and the public,
- work with our continuing education commission to identify and implement new and promising fields of action in the area of training and continuing education, and finally,
- continue to provide all relevant specializations in the faculty.

»The Faculty of Veterinary Medicine preserves knowledge«

We are

- providers of a modern library which contains 160,000 volumes and approximately 200 current journals,
- proud of our extensive rare collection which houses veterinary-historical works, some of which date back to the 16th century. We host the Gurlt's Veterinary-Anatomical Collection comprising unique skeleton and wet preparations of malformations of animals and anatomical wax models. We also display the historic horseshoe collection. Both collections can be traced back to the »Berlin Royal Veterinary School« (1790).
- aware of our responsibility to archive continuously generated digital knowledge for future generations and make it available to the wider public.

We would like

- to offer our students the possibility of using current literature to acquire knowledge and to examine learned information, abilities and application competencies through the preparation of original material,
- to make our existing knowledge easily accessible to all interested parties through the use of appropriate databases and
- to make the achievements of the faculty clearly visible for an interested public by using publications and research databases.

We will

- continually transfer our publication, research, cooperation and doctoral databases to the latest state-of-the-art technology and interlink them.
- promote open access publications and financially subsidize them through publication funds,
- support the sustained digitization of archive material,
- collaborate with the libraries and archives of national veterinary training institutions, so to develop joint concepts of data processing and digitalization,
- expand the textbook collection in consultation with the Education Commission and provide enough copies at all times.

»The Faculty of Veterinary Medicine develops the campus«

We are

- a faculty with over 34,000 m² in more than 50 buildings spread over four locations in Berlin and Brandenburg,
- both occupants of a protected estate with historical facilities dating from 1835, as well as recently completed state-of-the-art teaching and research facilities,
- attentive to the careful use of natural resources and are committed to energy efficiency and sustainability in all construction and utility issues.

We would like

- to advance the concentration of our infrastructure on the Düppel campus,
- to develop animal keeping and laboratory facilities to modern standards in relation to (animal) disease hygiene, work safety and animal welfare, as well as
- to create a flexible work space in an attractive environment, which fits the needs of all.

We will

- establish a Center for Resistance Research in Veterinary Medicine at the Düppel Campus. This center will have a major impact on the interdisciplinary research, teaching and translational outreach in the field of microbial resistance against antibiotics and other antiinfectives,
- establish a new building for state of the art research of food safety and hygiene on the Düppel Campus,
- plan our new buildings in accordance with the Evaluation System for Sustainable Building (BNB certificate).
- replace our current environmental certification of ISO 14001 with an EMAS certification (Eco-Management and Audit Scheme) and
- regularly evaluate and prioritize repair measures and new construction measures at the faculty together with the University.

»The Faculty of Veterinary Medicine provides services«

We are

- a veterinary competence center with comprehensive clinical and medical treatments which are carried out according to the latest findings and with state-of-the-art technology,
- operators of a small animal clinic which treats over 12,000 animal patients each year. We are home to ten specialist departments as well as clinics for horses, for ruminants and swine, for reproduction and for poultry diseases some of which are open 24/7,
- providers of a broad spectrum of laboratory tests for veterinary practitioners, clinics, businesses and the public and
- a team of competent experts for all legal and forensic issues.

We would like

- to ensure the care of all animal patients in Berlin and the wider region 24/7, and optimally integrate them into the training of young veterinarians and in veterinary research,
- to be a competent partner for the public in all matters pertaining to animal health, to animal and consumer protection, to food safety and to animal disease control.

We will

» dynamically shape our service portfolio in accordance with the current state of scientific knowledge and future demands of animal and comparative medicine, primarily to promote optimal research and teaching.

»The Faculty of Veterinary Medicine creates a positive work environment«

We are

- an employer in all areas of veterinary medical teaching, research and services,
- a training facility for four skilled professions (trained veterinary assistants, animal keepers, horse owners and animal owners, specialist beekeepers) and therefore
- proud of highly qualified employees.

We would like

- to assure gender equality and diversity in religious, ethnic and national origin, reflecting the world outside,
- to facilitate fair and equal access to higher education,
- to engender a healthy and satisfactory environment in which all employees can actively participate in departmental activities,
- to optimize the personal qualifications of each employee in the institutional and personnel health and safety measures,
- to assure planning security for our employees, especially for young scientists and researchers in their qualification phases and
- to ensure the compatibility of family and work in all terms and conditions of employment.

We will

- implement the personnel development concept of Freie Universität and continue the Berlin plan for the professional promotion of women,
- enter into appropriate employment contracts with young scientists and researchers in accordance with their individual qualification goals,
- develop a concept for the introduction of new employees to the faculty as well as
- further optimize workplace protection measures and risk assessments, especially in regard to pregnant faculty members and students as well as those with specific needs.

»The Faculty of Veterinary Medicine considers itself as a learning organization«

We are

- a faculty with an open communication culture and transparent decision-making processes,
- an organization, willing to learn, that continuously seeks to improve and develop itself and
- engaged in various national and international organizations and networked in all relevant professional and political bodies.

We would like

- to create efficient processes and structures that are orientated to our core objectives and tasks in research, teaching and services,
- to achieve a steady improvement of our services through the establishment and use of modern methods of quality assurance as well as
- to actively integrate member organizations of the faculty in decision-making processes and
- to further contribute to the development of all veterinary and related professions throughout Germany.

We will

- regularly review our degree programs by consulting external expertise on the direction of their content, teaching methods and training results, as well as
- periodically examine our fields of action by internal and external evaluation, disclose these rules and implement them consistently.


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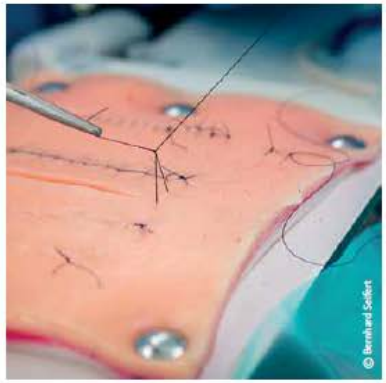
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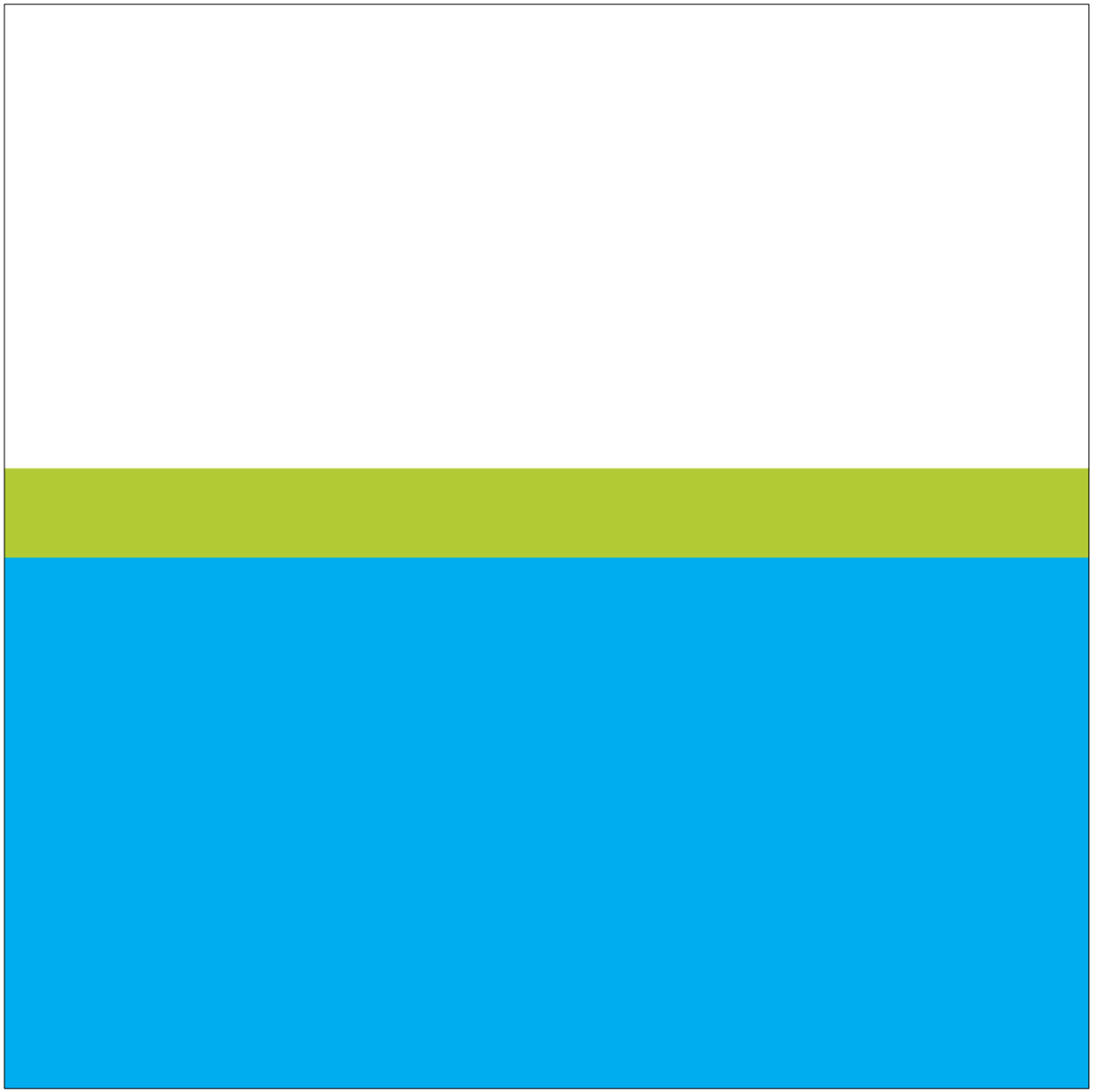
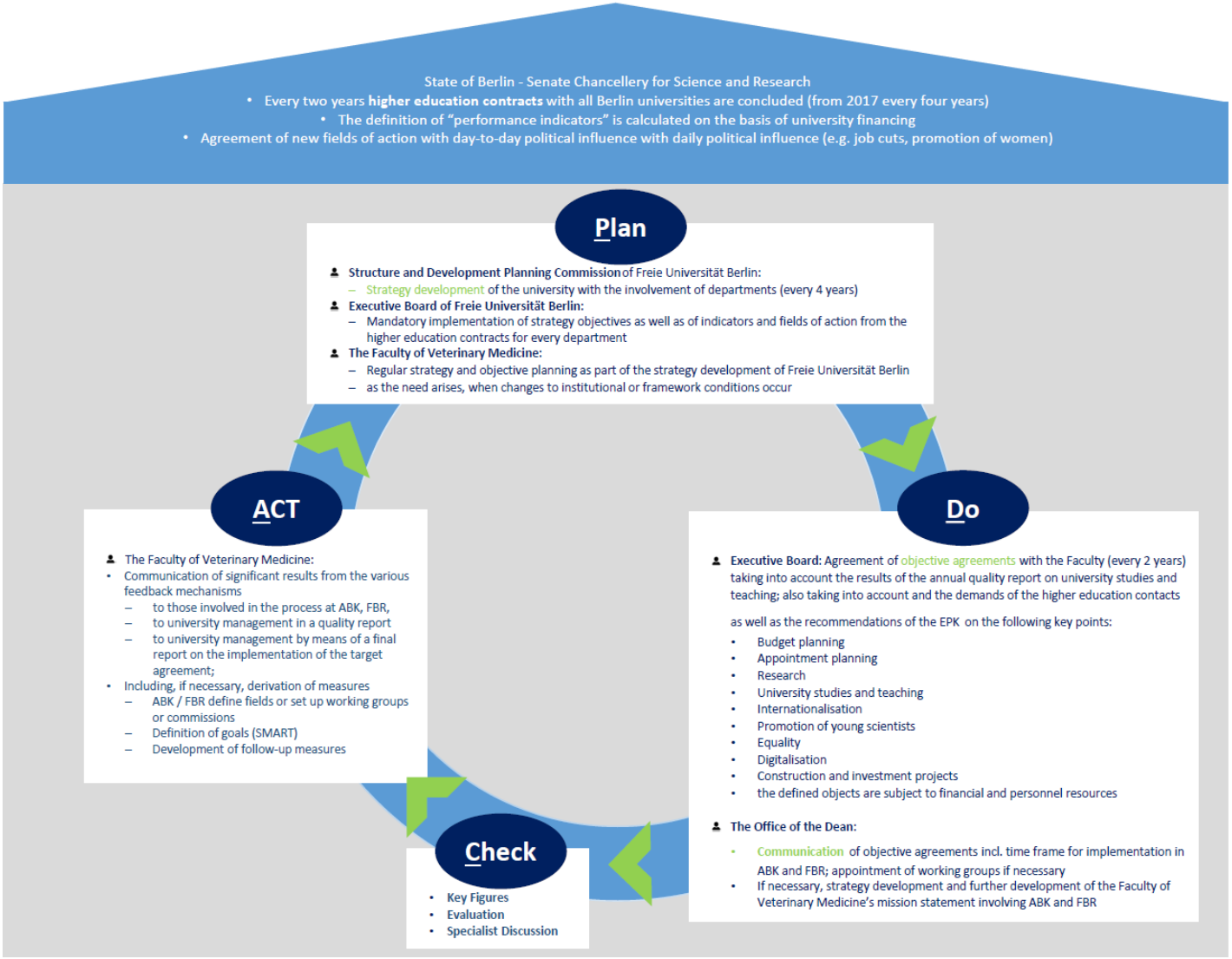


Appendix to 1.1.3.a: Strategic Operating Plan of the Faculty

Strategic Theme and Objectives	Implementation	Indicators
Budgeting		
• Increased and sustained budget revenue	2017 - 2020	Budget agreement with the university
• Higher flexibility in companion animal and equine clinic management	2017 - 2018	Agreement on budget
• Adaptations to faculty budget allocation	2018	Agreement on budget
• Support of fundraising	2017 - 2024	Faculty revenues
• Optimization of organisational structures	2017 - 2020	Organisational plan
Appointment scheduling		
• Increase of human resources (academic staff, resistance research, clinics) balanced against required student admissions	2018 - 2020	Personal plan and student admission numbers
• Recruitment of new professors: poultry, pigs, radiology	2017 - 2020	Recruitment successful
Research		
• Application for collaborative projects (CRC, Research training group)	2017 - 2020	Application submitted
• Establishment of three junior research groups (antibiotic resistance)	2018 - 2020	Establishment
• Collaborations with livestock and agriculture institutions and industry	2017 - 2024	Project plan
Study and teaching		
• Review of the curriculum	2017 - 2024	Modified curriculum implemented
• Improvement of teaching-learning processes	2017 - 2019	Protocols of the responsible commission
• Horizontal and vertical coordination of subject contents	2017 - 2019	Syllabus
• Development of practical training in agriculture	2017 - 2018	Contracts with training farms
• Stakeholder consultation with extramural veterinary specialists	2020, 2023	Protocol of the meetings
• Increase of quality commitment	2017 - 2018	documentation
Postgraduate teaching		
• Consolidation of the running programs (small animals, horses)	2017 - 2024	Number of enrolled students
• Promotion of joint actions with the Chamber of Veterinarians and Professional Associations	2017 - 2024	List of conferences and meetings
Internationalization		
• Targeted partnerships with leading universities	2017 - 2024	Quality of active collaborative projects
• Student exchange (incoming and outgoing)	2017 - 2019	Statistical evaluation
Human resource development		
• Establishment of programs to improve the welfare of staff and students	2017 - 2019	Student evaluation, internal audit results

• Establishment of obligatory courses in teaching	2017	Documentation
• Continuing education for technical staff	2017 - 2018	Documentation
Promotion of young scientists		
• Number of veterinary dissertations and PhD thesis ~ 80 pa	2017 - 2024	Annual statistics
• Up to 20 % PhDs in Dahlem Research School	2017 - 2024	Annual statistics
Gender equality		
• Establishment of a new support program for women in science	2017	Website
• Continuous development of new gender equality approaches with university	2017 - 2024	Website
Electronic Resources		
• New software for diagnostic imaging	2017	In use
• E-Learning modules students for interdisciplinary case based learning	2017 - 2019	20 cases available
Building and investments		
• Improvement of teaching facilities	2017 - 2020	New lecture halls in use
• Veterinary Centre for Resistance Research	2017 - 2020	To open in 2020
• New Centre of Food Safety & Hygiene	2019 - 2022	Planned to open 2023
• Planning and construction of additional infrastructure for research & teaching	2017 - 2024	Ongoing

Appendix to 1.1.3.b: PDCA Cycle Strategy and Objective Planning



Appendix to 1.1.5.: Profiles of the Commissions and Representatives

Commissions / Committees at the Faculty of Veterinary Medicine

The Faculty Council, the Dean's Office and the Education Commission are the central commissions of the Establishment. A detailed description of these and other commissions can be found below:

Faculty Council								
Number of Members	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Professor	👤	👤	👤	👤	👤	👤	👤	
Academic staff members	👤	👤						
Miscellaneous employees	👤	👤						
Students	👤	👤						
Without voting rights	• Managing Director • Women's Representative							
Election	• Every two years							
Chair	• Deans (election is to take place at the constituent meeting made up of professorial members of the FBR)							
Legal Framework	• Berlin Higher Education Act (§ 71, § 72) • Basic Division Ordinances of Freie Universität Berlin (§ 13; § 14)							
Meeting Frequency	• Once a month during the semester • Meetings when courses are in not in session are possible							
Duties / Functions	• Statutes for teaching, university studies, qualifications and examination • Budget • Scientific Institutions of the Department • Commissions • Call for appointment suggestions for professors • Habilitations							
Minutes	• Decision minutes are available internally or via a VPN connection at www.vetmed.fu-berlin.de/protokolle/							

Dean's Office								
Number of Members	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Professor	👤	👤	👤					
Managing Director	👤							
Election	• Every two years (apart from the managing director)							
Chair	• Dean							
Legal Framework	• Basic Division Ordinances of Freie Universität Berlin (§ 15)							
Meeting Frequency	• Normally once a week, Wednesday at 8:00 a.m.							
Duties / Functions	• Budget / budget distribution • Personnel affairs • Administrative matters							
Minutes	• Decision minutes are confidential							

Education Commission								
Number of Members	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Professor	👤	👤	👤	👤				
Academic staff members	👤	👤						
Students	👤	👤	👤	👤	👤	👤	👤	👤*
Special Features	• * At least one student from the degree program in Equine Science							
Without voting rights	• Study Coordinator • Adviser for University Studies and Teaching							
Election	• Every two years							
Chair	• Election of chairperson from members							
Legal Framework	• Basic Division Ordinances of Freie Universität Berlin (§ 14 Paragraph 1 Nr. 5)							
Meeting Frequency	• At least 3 times each semester and as the occasion arises							
Duties / Functions	• Appointments committee in educational matters • Contribution to study and examination regulations • Discussion of course-related quality assurance procedures • Formulation of recommendations etc. for improving feasibility of study, qualification profile of degree programs as well as their alignment with current professional fields							
Minutes	• Decision protocols are available internally or via a VPN connection at www.vetmed.fu-berlin.de/protokolle/							

Continuing Education Commission								
Number of Members	1	2	3	4	5	6	7	8
Professors	1*	1	1	1	1			
Academic Staff Members	1	1						
Doctoral Students	1	1						
Miscellaneous Staff Members	1							
Special Features	• * A professorial member of the Dean's Office							
Without voting rights	• Women's Representative							
Election	• Every two years							
Chair	• Election of chairperson from members							
Legal Framework	• Basic Division Ordinances of Freie Universität Berlin (§ 14 Paragraph 1 Nr. 5)							
Meeting Frequency	• At least 1 time each semester and as the occasion arises							
Duties / Functions	• Advising commission concerned with matter of further and continuing education, focusing on the range of further education qualifications (PhD and master's degree programs and European College programs) • Surveying and evaluation of existing continuing education programs • transparent information about the range of programs							
Minutes	• Decision protocols are available internally or via a VPN connection at www.vetmed.fu-berlin.de/protokolle/							

Ad hoc Professoral Appointments Committee								
Number of Members	1	2	3	4	5	6	7	8
Professors	1*	1	1	1	1	1	1	
Academic Staff Members	1	1						
Students	1							
Miscellaneous Staff Members	1							
Special Features	• * A professorial member of the Dean's Office • 3 professorial members of the Faculty • 1 professorial representative of cooperating subjects at Freie Universität or related subjects in the Berlin-Brandenburg region • 1 professor from an unrelated discipline • 1 external professorial member (appointed by the Executive Board)							
Without voting rights	• Women's Representative • One miscellaneous staff member							
Election	• Case-by-case through the Faculty Council • For each appointment one commission							
Chair	• Selection takes place in the inaugural meeting from a group of professorial members							
Legal Framework	• Appointments guidelines of Freie Universität; http://www.fu-berlin.de/service/zuvdocs/weitere-fu/berufung/index.html • Berlin Higher Education Act							

	• Basic Division Ordinances of Freie Universität Berlin • FU Official Announcements 9/1991 • Administrative Procedures Act (VwVfG) • Social Code IX (SGB IX) • General Equal Treatment Act (AGG) • Freie Universität Guidelines on the Promotion of Women
Meeting Frequency	• As the need arises
Quorum	• University committees meet quoracy when at least half of the members eligible to vote are present. (§ 47 BerlHG) • In matters which directly affect the appointment of professors, the other staff members have no right to vote; they act in an advisory capacity.
Duties / Functions	• Search committee for the selection of new professors • Review of application documents • Clarification and weighting of selection criteria • Decision on inviting applicants to a hearing • Conducting of hearing incl. teaching test • Documentation of the selection decision • Evaluation of the applicant's teaching skills • Proposal of four external reviewers • Vote and decide on appointment suggestion to be handed over to the Faculty Council
Minutes	• Application documents and decision minutes are confidential

Ad hoc Habilitation Commission								
Number of Members	1	2	3	4	5	6	7	8
Professors	👤	👤	👤					
Academic Staff Members	👤							
Students	👤							
Without voting rights	• Women's Representative • Managing Director							
Election	• Every two years							
Chair	• Selection takes place in the inaugural meeting							
Legal Framework	• Habilitation ordinances for the Department of Veterinary Medicine at Freie Universität; http://www.vetmed.fu-berlin.de/einrichtungen/zentrale/dekanat/kommissionen/habilitationen/Habilitationsordnung.pdf							
Meeting Frequency	• As the need arises							
Quorum	• University committees meet quoracy when at least half of the members eligible to vote are present. (§ 47 BerlHG) • At *performance assessments* for habilitations, in addition to professors, only members with habilitations are allowed to contribute to the relevant committee.							
Duties / Functions	• Advising Commission in the awarding of teaching qualifications to those writing habilitations • Checking of applicant requirements • Examination of written habilitation work • Identification of two external experts							

	• Once the opinions of the reviewers are taken into account, the commission makes a recommendation as to whether a written habilitation should be accepted or rejected. • In the case of acceptance, the Faculty Council determines the lecture topic and date. • The Habilitation Commission presents a review of the applicant's teaching.
Minutes	• Habilitation documents and decision protocols are confidential

Doctoral Committee / ad hoc Commission								
Number of Members	1	2	3	4	5	6	7	8
Professors								
Academic Staff Members								
Without voting rights	• Women's Representative							
Special Features	• Doctoral Committee: Four professors • Doctoral Commission: Doctoral Committee plus three reviewers							
Election	• Doctoral Committee: every two years • Doctoral Commission: as the need arises							
Chair	• Selection takes place in the inaugural meeting							
Legal Framework	• Doctoral ordinances of Veterinary Medicine at Freie Universität Berlin; see http://www.vetmed.fu-berlin.de/einrichtungen/zentrale/verwaltung/promotionsbuero/informationen/Promotionsordnung_ab322011.pdf							
Meeting Frequency	• As the need arises							
Quorum	• University committees meet quoracy when at least half of the members eligible to vote are present (§ 47 BerlHG) • At performance assessments for doctorates, in addition to professors, only members with doctorates are allowed to contribute to the relevant committee							
Duties / Functions	• The Doctoral Committee decides on the admission of applicants and their dissertation projects according to doctoral procedure • The Doctoral Committee appoints three reviews once the dissertation has been submitted. Generally, one of these is an external reviewer. • The committee announces the beginning of the dissertation's review process within the department. • Once the deadline for the public inspection of the dissertation expires (four weeks), the doctoral committee instates a Doctoral Commission. Members of the Doctoral Commission are made up of members of the Doctoral Committee and the reviewers. • The Doctoral Commission decides on whether the dissertation should be accepted. • The Doctoral Committee sets the date of the oral examinations, or for the date for a panel of examiners.							
Minutes	• Doctoral file documents and decision protocols are confidential							

Hygiene Commission								
Number of Members	1	2	3	4	5	6	7	8
Professors								
Academic Staff Members								
Students								
Special Features	• The official responsible for hygiene at the department is automatically a member of the commission. • The Commission include representatives of all infection and / or laboratory experimental institutes as well as all veterinary clinics.							
Election	• Every two years							
Chair	• The official responsible for hygiene at the department							
Legal Framework	• Hygiene ordinances of the Department of Veterinary Medicine at Freie Universität Berlin; see http://www.vetmed.fu-berlin.de/einrichtungen/zentrale/dekanat/kommissionen/hygiene/2015-07-09-hygieneordnung.pdf							
Meeting Frequency	• At least once a year and as the need arises							
Duties / Functions	• Production and further development of a standardized hygiene concept for the department as well as production and further development of the departmental hygiene ordinances. • Development of a standardized plan for the protection of pregnant and immunocompromised students and employees from infection within the animal clinics and within the infection and / or laboratory institutes • Checking the hygiene plans of each of the department's scientific institutions and assisting in their production and further development							
Minutes	• Decision protocols are available internally or via a VPN connection at www.vetmed.fu-berlin.de/protokolle/							

For Veterinary Medicine: a) Preclinical Examining Board b) Clinical Examining Board	
Professors and academic staff members	b) all examiners for the Veterinary Preclinical Examination (approx.. 30) b) all examiners for the Veterinary Examination (> 200)
Election	• The committee is elected every four years. • The competent authority (State examination office) after consultation* with Freie Universität Berlin names the members of the examination board. • *Consultation process: Executive directors of the Faculty institutions suggest possible examiners to the Examination Board chairperson. The chairperson checks the prerequisites required of the candidate (generally speaking teaching experience and doctorate). After the Examination Board chairperson's consultation, the Faculty Council decides on the application for examination authorisation by the State examination office
Chair	• Professors of Freie Universität Berlin are appointed as chairperson and deputies.

	• Other members are appointed as decribed above. These comprise professors or other teachers of subjects, which are subject to examination.
Legal Framework	• Additional examination regulations of the Faculty of Veterinary Medicine at Freie Universität Berlin for the Veterinary Preclinical Examination and the Veterinary Examination (see page 156)
Meeting Frequency	• At least once a year and as the need arises
Quorum	• The Examining Board meets quoracy, if, in addition to the chairperson or one of the deputies, at least five other members are present. • It makes decisions by simple majority. • In the event of a tie, the chairperson has power to break it.
Duties / Functions	• If there is noticeable increase in the number of errors in the electoral procedure, the chairperson of the Examining Board should be informed before the results are published. It reviews examination exercises. In cases of doubt, the Examining Board is brought in. If the review shows that the individual examination exercises were faulty, these are not taken into account when the examination results are determined. • The examinations office compiles an overview of the distribution of marks in individual examinations at least once a year for the respective examining board. • Therefore, for written and practical examinations, item analyses, mark distribution and examination records can be evaluated within the scope of quality management. The aim of this is to improve future examinations.
Minutes	• Decision protocols are confidential

Equality Commission								
Number of Members	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Professors	👤	👤						
Academic Staff Members	👤	👤						
Students	👤	👤						
Miscellaneous Staff Members	👤	👤						
Without voting rights	• Women's Representative • • Managing Director							
Election	• Every two years							
Chair	• Election of chairperson from members							
Meeting Frequency	• At least 1 time each semester and as the occasion arises							
Quorum	• The commission meets quoracy when at least half of the members eligible to vote are present. • In decisions relating to the women's promotions plan, at least 50% of the members present must be women.							
Duties / Functions	• Advising commissions in all questions concerning equality between men and women independently of ethnic and national origin, age, sexual orientation, disability and world view (religion).							
Minutes	• Decision protocols are available internally or via a VPN connection at www.vetmed.fu-berlin.de/protokolle/							

Officials, Coordinators and Advisory Bodies within the Facuty of Veterinary Medicine

Name	Duties / Functions
BAföG (Federal Education and Training Assistance Act) Coordinator	The BAföG coordinators tend to the certification of academic records, which are required for an BAföG application. He / she can determine which documents are missing and / or are needed or which services should still be rendered. The coordinator is elected by the Faculty Council every two years.
Library Coordinator	The Library Coordinator tends to the library stock holdings, as professorial member in consultation with library management. The coordinator is elected by the Faculty Council every two years.
Coordinator for Habilitation Candidates	Professorial member, who advises and supervises candidates writing habilitation projects. The Coordinator for Habilitation Candidates coordinates habilitation procedures at the department and is automatically a member of the extended Faculty Council in all questions pertaining to habilitations. The coordinator is elected by the Faculty Council every two years.
Hygiene Coordinator	The Hygiene Coordinator supports the department in all prevention measures against the introduction and spread of infectious and animal diseases in the department's institutions. He / she is automatically chairperson of the Hygiene Commission. The coordinator is elected by the Faculty Council every two years.
Coordinator for Didactic Continuing and Further Education	Professorial teacher of the *Fundamental Teaching Course* for new teachers at the department, as well as organiser of the *Day of Teaching*. The coordinator is elected by the Faculty Council every two years.
Coordinator for International Relations, Partnerships and Visiting Students at the Department	The Coordinator for International Relations, Partnerships and Visiting Students at the Department maintains university partnerships, coordinates international exchange programs and is the (co-)organiser for information events for incoming visiting students and outgoing students. The coordinator is elected by the Faculty Council every two years.
Student Academic Advising	The student representatives for student academic advising supports students in the meaningful planning and implementation of their university studies taking into account their individual skills and living situations. Student Academic Advising is determined by student representatives at the Faculty Council.
Academic Advising	Academic advising takes place within the departments in accordance with § 28 of the BerlHG. Therein the employees of the Study Office as well as the teaching dean are set out. Staff members from the Study Office and the Dean's Office advise students on all questions pertaining to study processes and support them in difficulties which may arise in the course of university studies.
Liaison Officer for Students	The Liaison Officer for Students supports students in the meaningful planning and implementation of their university studies taking into account their individual skills and living situations. The liaison officer is elected by the Faculty Council every two years.

Departmental Liaison Officers Pursuant to the Statutes for Safeguarding Good Scientific Practice	The Liaison Officer Pursuant to the Statutes for Safeguarding Good Scientific Practice at the department advises departmental members, by which they are informed about suspected scientific misconduct, and takes up pertinent pointers. In cases of reasonable suspicion of culpable misconduct, the departmental liaison officer passes the case to the central commission for formal investigation. The liaison officer is elected by the Faculty Council every two years. cf: http://www.fu-berlin.de/forschung/service/Ehrenkodex-ab292002.pdf
Departmental Representative at the Federal Veterinarian Association	A departmental representative is automatically the observing delegate for the Department of Veterinary Medicine at Freie Universität Berlin at the Federal Veterinarian Association. The representative is elected by the Faculty Council every two years. Currently, 12 professional associations and groups maintain observer status.
Departmental Representative at the Medical Senate	The Medicine Senate is a body at the Charité in keep with § 5 of the Berlin University Medical Law. Members are elected for terms of 2 ½ years. Members comprise one half elected from the Academic Senate at Humboldt-Universität zu Berlin and one half elected from the Academic Senate at Freie Universität Berlin.
Representative of the Department in the Joint Commission of DRS Biomedical Sciences	The joint commission of the departments of *Biology, Chemistry and Pharmacy* and *Veterinary Medicine* manages the concerns of Doctoral Studies in Biomedical Sciences (doctoral studies) at the Dahlem Research School (DRS) at Freie Universität Berlin. The joint commission of the Dahlem Research School comprises 10 members, of which 3 professorial members, one representative of the academic staff members and one DRS BiomedSci student representative from the Department of Veterinary Medicine are elected. The election takes place every two years.
Departmental Representative at the Berlin Veterinarian Association	A departmental representative is automatically a delegate at the Berlin Veterinarian Association. The representative is elected by the Faculty Council every 2 years. By decision of the Berlin Veterinarian Association, the elected representative participates and is entitled to vote in delegate sessions. cf. § 7 Berlin Associations Law

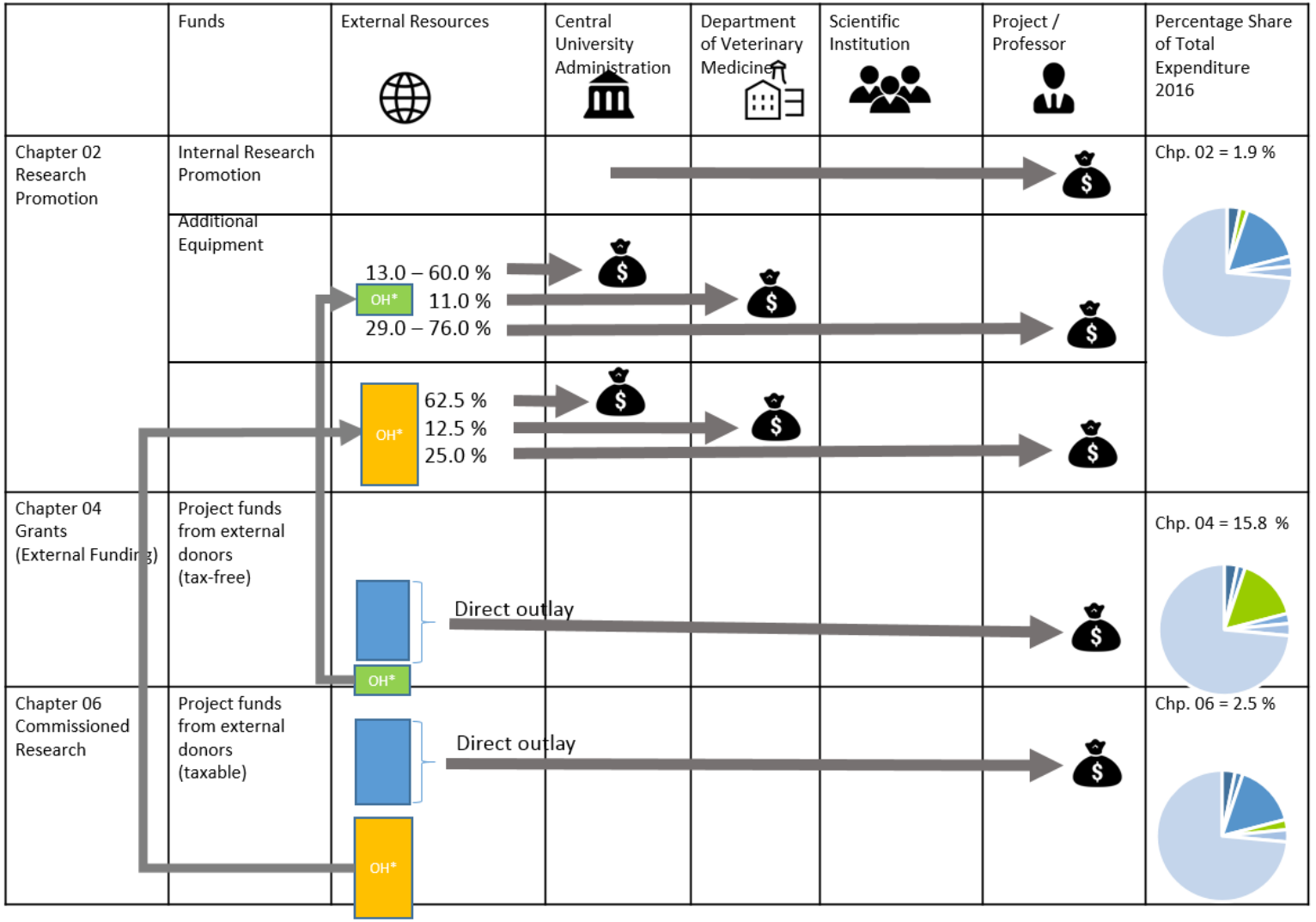
Interest Groups and Representatives at the Department of Veterinary Medicine

Name	Duties / Functions
Local Women's Representative	The local women's representatives represent the interests of women on site. They are involved in all recruitment and appointment procedures, they promote women's and gender research in each discipline and take on advising functions (e.g. in cases of sexual harassment, discrimination, stalking etc.). There is no direct election for the women's representatives. The process is two-fold. In the 1st part, two veterinarians from each status group (professors, academic staff members, miscellaneous employees) are elected from among the women at the department- a 'Women's Election'. In the 2nd part, these women elect the Local Women's Representative and her deputy for a two year term of office. All female members of the department (students who study veterinary medicine as their main subject as well as academic and non-academic employees) who are eligible to vote may stand for election. For more information, see the following regulations: http://www.fu-berlin.de/sites/zwv/vorschriften/erfrauen.pdf
Animal Welfare Official	Animal welfare officials support all members of the department in questions pertaining to animal welfare and in the planning and conducting of animal experiment research procedures. In particular, they advise those responsible for breeding and keeping, researchers, employees, and animals keepers in questions pertaining to animal keeping hygiene, procurement, shelter and the keeping of animals. They are the contacts for all parties when animal experiments are planed, applied for and conducted. They submit a statement to the licensing authorities for each experiment project. They are consulted in planning and construction issues related to the keeping of animals. Animal welfare officials are appointed in writing by the Dean of the department. In these matters, only those who have achieved the necessary qualifications in keeping with animal welfare laws and animal experiment protection laws and who are employed at Freie Universität can be appointed. The Freie Universität's TIERSCHUTZ guidelines regulate further: http://www.vetmed.fu-berlin.de/einrichtungen/institute/we11/tierschutzbeauftragte/geschuetzt/151221-tierschutz-richtlinie-fu-mit-praeambel-final.pdf

Appendix to 2.1.2.: Schematic Representation of Budget Allocations for Budget Chapters 01, 09 and 14

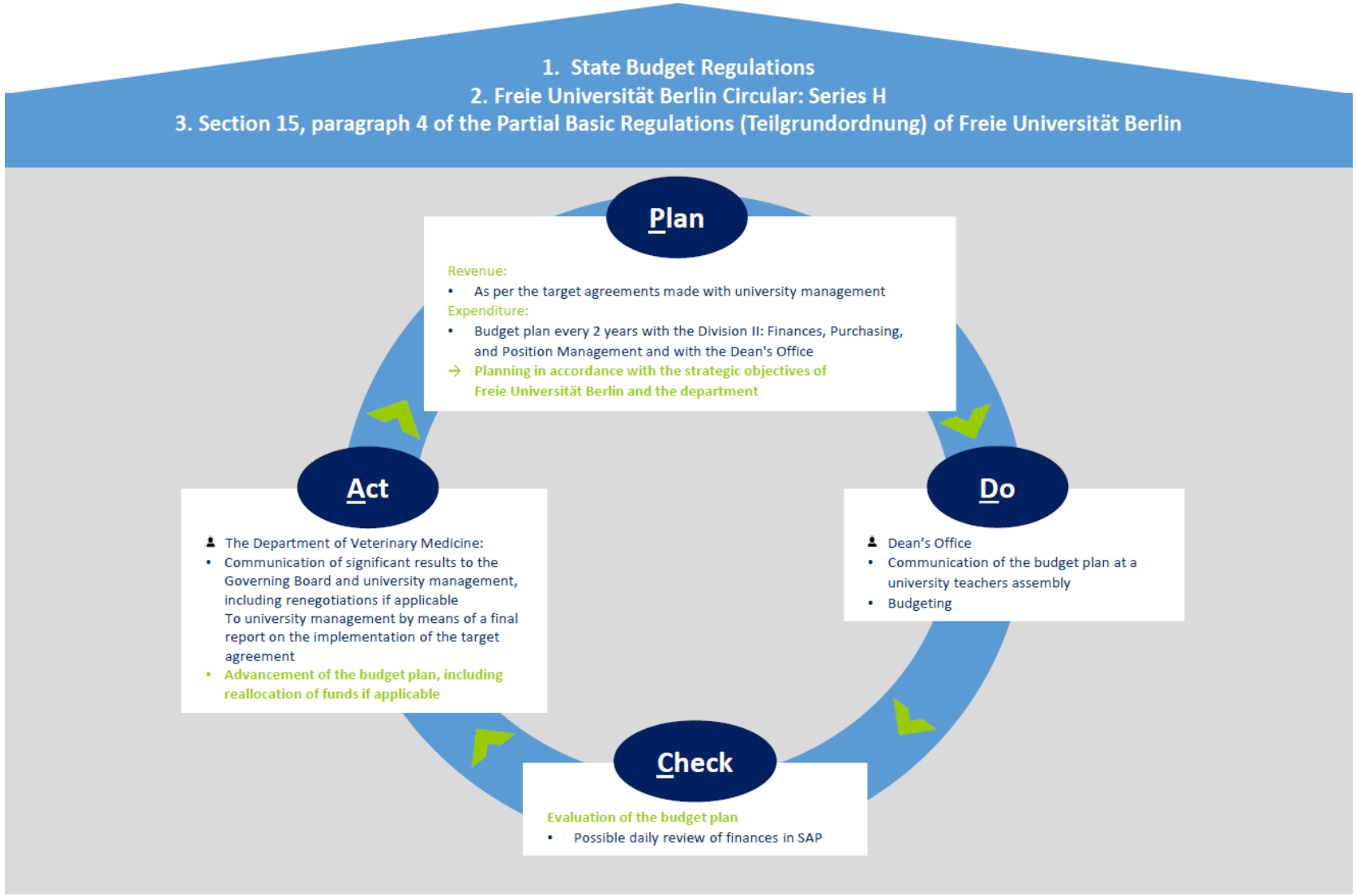
	Funds	External Resources	Central University Administration	The Department of Veterinary Medicine	Scientific Institution	Project / Professor	Percentage Share of Total Expenditure 2016
Chapter 01 University	Appointment resources and Special programs such as • Promotion of women • Transitional employment training • E-learning						Chp. 01 = 3.2%
Chapter 09 Service Divisions	Scientific further education, scientific services Acquisition Fund						C
Chapter 14 Veterinary Medicine	Basic Budget		State of Berlin				Chp. 14 = 73.5 %

Appendix to 2.1.3.: Schematic Representation of Budget Allocations for Budget Chapters 02,04 and 06



*OH= Overhead: The overhead costs of supported research projects are covered in Chapter 02.

Appendix to 2.1.8: PDCA Cycle Budget Planning of the Faculty



Appendix to 3.1.2.a: Description of the legal constrains imposed on the curriculum by national/regional legislations and the degree of autonomy that the Establishment has to change the curriculum

Assembly of the German Veterinary Establishments (Veterinärmedizinischer Fakultätentag)

https://allgemeiner-fakultaetentag.de/
http://www.vmft.de/

The General Faculty Assembly (Allgemeiner Fakultätentag) is an organisation that unites all German university faculties (departments). Its aim is to discuss and take position on higher education topics across all disciplines, with an emphasis on linking research and education.

The Assembly of German Veterinary Establishments (Veterinärmedizinischer Fakultätentag) is a member of the General Faculty Assembly. Members of the Assembly of the German Veterinary Establishments are the five German veterinary schools, the Veterinary University of Vienna (AT) and the Vetsuisse faculties of Bern and Zurich (CH). The assembly meets at least once a year. Each faculty is represented by a delegation of faculty members, academic and technical staff as well as students. Representatives of the veterinary profession, the veterinary chambers as well as the Federal Ministry are invited as guests. In March 2016 Prof. Jürgen Zentek, Dean of the Berlin Veterinary School, became President of the Assembly.

Main topics are the curricular and structural developments within the German speaking veterinary faculties as well as relevant political issues. This includes intended changes of the curriculum.

German Veterinary Chamber (Bundestierärztekammer, BTK) and State Veterinary Chamber of Berlin

http://www.bundestieraerztekammer.de/
http://www.tieraerztekammer-berlin.de/

All licensed veterinarians in Germany are members of the State Veterinary Chamber in which they reside. All State Veterinary Chambers are members of the German Veterinary Chamber (BTK). The Establishment is represented with delegates both in the boards and the assemblies at state and federal level, and representatives of the chambers are invited to attend the meetings of the Assembly of the German Veterinary Establishments as well as the “Fachgespräche” in order to receive feedback on educational issues from the profession.

German Veterinary Association (Deutsche Veterinarmedizinische Gesellschaft DVG)

www.dvg.net

The DVG is the German scientific organization of the veterinary profession. The main objective is to promote veterinary research and to make research results assessable to veterinary practitioners through scientific meetings and publications. The DVG is structured in a wide range of sections that represent the various disciplines within veterinary medicine.
The Establishment is represented both with board and ordinary members in most of those sections, thereby contributing to the advancements in veterinary science in Germany.

Appendix to Table 3.1.2.b: Assignment of TAppV subjects to EU and EAEVE subjects

The 1st column contains the EU Directive's curriculum contents, followed by the 2nd column with the EAEVE indicators. The national adaptation follows with the topics of examination (TAppV, 3rd column) and finally the local Berlin implementation (Conditions of Study, 4th column).

Council Directive (2005/36) Subjects	EAEVE Subjects	TAppV Subjects for examination	Conditions of Study Subjects
A. Basic Subjects			
Anatomy (including Histology and Embryology)	→ Anatomy (incl. histology and embryology)	→ Anatomy → Histology and embryology	→ Anatomy → Histology → Embryology
Biochemistry	→ Biochemistry and molecular biology	→ Biochemistry and molecular biology	→ Biochemistry and molecular biology (molecular biology is also included in immunology)
Animal biology Plant biology	→ Biology (incl. cellular biology)	→ Zoology → Botany of forage crops, pharmaceutical and poisonous plants	→ Zoology → Botany of forage crops, pharmaceutical and poisonous plants
Physics	→ Biophysics	→ Physics, incl. basics of physical radiation protection	→ Physics (incl. experimental physics, radiation protection)
Biomathematics	→ Biostatistics	→ Biometrics	→ Biometrics
Chemistry	→ Chemistry	→ Chemistry	→ Chemistry
Epidemiology	→ Epidemiology	→ Epizootics control and infectious diseases	→ Epidemiology
Genetics	→ Genetics	→ Animal breeding and genetics incl. asessment of animals	→ Animal breeding (incl. genetics)
Immunology	→ Immunology	→ Immunology	→ Immunology and molecular biology
Microbiology	→ Microbiology	→ Virology → Bacteriology & mycology	→ Virology → Microbiology (incl. bacteriology & mycology)
Parasitology	→ Parasitology	→ Parasitology	→ Parasitology
Pathology (including pathological anatomy)	→ Pathological anatomy (macroscopic & microscopic) → Physiopathology	→ Pathology and pathological anatomy & histology	→ General pathology → Pathological anatomy → Physiopathology
Pharmacy	→ Pharmacy	→ Manifacture and distribution of medicines (AVO)	→ Manifacture and distribution of medicines (AVO) → Galenics → Drug law
Pharmacology	→ Pharmacology	→ Pharmacology & toxicology	→ Pharmacology & toxicology

Council Directive (2005/36) Subjects	EAEVE Subjects	TAppV Subjects for examination	Conditions of Study Subjects
Toxicology	→ Toxicology (incl. environmental pollution)	→ Pharmacology & toxicology	→ Pharmacology & toxicology; → environmental pollution is covered by animal husbandry and hygiene
Physiology	→ Physiology	→ Physiology	→ Physiology
	→ Scientific and technical information and documentation methods	→ Biometrics	→ Biometrics (incl. scientific and technical information and documentation methods)
B. Animal Production			
Agronomy	→ Agronomy	→ Agronomy	→ Agronomy
	→ Animal behaviour (incl. behavioural disorders)	→ Animal protection and welfare & ethology	→ Animal behaviour (incl. behavioural disorders)
Animal husbandry and animal production	→ Animal husbandry (incl. livestock production systems)	→ Animal husbandry & hygiene	→ Animal husbandry and hygiene
Animal nutrition	→ Animal nutrition and feeding	→ Animal nutrition	→ Animal nutrition → Feed science → Feeding and dietetics
Animal ethology and Protection	→ Animal protection and welfare	→ Animal protection welfare and ethology	→ Animal protection and welfare
Veterinary hygiene	→ Environmental protection	→ Animal husbandry and hygiene	→ Animal husbandry & animal hygiene incl. environmental protection
Preventive medicine	→ Preventive veterinary medicine (incl. health monitoring programmes)	→ Epizootics control and epidemiology of infections	→ Epidemiology, epizootics control, interdisciplinary subject food science, herd health and ambulatory service (herd health management) as parts of preventive medicine
Reproduction and reproductive disorders	→ Reproduction (incl. artificial breeding methods)	→ Veterinary reproduction	→ Reproductive medicine
Rural economics	→ Rural economics		→ included in agronomy

Council Directive (2005/36) Subjects	EAEVE Subjects	TAppV Subjects for examination	Conditions of Study Subjects
C. Clinical Subjects			
Clinical lectures on the various domestic animals, poultry and other			→ Reproduction, internal medicine, surgery and anaesthetics of equines, ruminants, pigs, small and pet animals, poultry diseases
Propaedeutics	→ Clinical examination and diagnosis and laboratory diagnostic methods	→ Clinical propaedeutics	→ Clinical propaedeutics → Laboratory diagnostic course
Radiology	→ Diagnostic imaging	→ Radiology	→ Diagnostics (incl. ophthalmology, diagnostic imaging, radiology)
Clinical medicine and surgery (incl. anaesthetics)	→ Clinical medicine → Anaesthetics → Surgery	→ Internal medicine → Poultry diseases → Surgery and anaesthetics	→ Internal medicine → Clinical rotations → Demonstration of clinical cases → General surgery → Surgery & anaesthetics → Interdisciplinary subject clinics (incl. poultry diseases) → Mobile clinic
Obstetrics	→ Obstetrics	→ Reproductive medicine	→ Obstetrics
Reproduction and reproductive disorders	→ Reproductive disorders		→ Reproductive medicine
Veterinary state medicine and public health Veterinary legislation and forensic medicine	→ State veterinary medicine, zoonoses, public health and forensic medicine	→ Epizootics control and epidemiology of infections → Forensic veterinary medicine → Poultry diseases	→ Epizootics control → Forensic veterinary medicine → Interdisciplinary subject food science → Interdisciplinary subject clinic (poultry diseases)
Therapeutics	→ Therapeutics	→ Internal medicine → Anaesthetics and surgery → Pharmacology	→ Internal medicine → Surgery and anaesthesia → Pharmacology

Council Directive (2005/36) Subjects	EAEVE Subjects	TAppV Subjects for examination	Conditions of Study Subjects
D. Food Hygiene			
Food hygiene and technology	→ Certification of food production units → Food certification → Food science and technology	→ Food sciences incl. food hygiene → Meat hygiene → Dairy sciences	→ Food sciences and hygiene → Meat hygiene → Dairy sciences
Inspection and control of animal food-stuffs or foodstuffs of animal origin	→ Food hygiene and food quality (incl. legislation) → Food inspection, particularly food of animal origin		→ Extramural practical work → hygiene control, food examination → abattoir → VPH offices
Practical work (including practical work in places where slaughtering and processing of foodstuff takes place)			
E. Professional Knowledge			
Professional ethics	→ Professional ethics	→ Forensic veterinary medicine, veterinary professional legislation → Medical terminology	→ Animal ethics → Professional knowledge → Forensic veterinary medicine, veterinary professional legislation → Medical terminology
	→ Veterinary certification and report writing → Veterinary legislation → Practice management		

Appendix to 3.1.7.: Elective courses of the tracking system offered in the last full academic year prior to the visitation

Course no.	Track	Subject area	Institution	Title	Max. no part.
08373-S16	Small animals	E	7	Basics of vaccination strategies in companion and farm animals	30
08544-S16	Small animals	D	10	Assessment of environmental and animal-level appropriatness of animaly husbandry systems Part 2	15
08670-S16	Small animals	B	13	Climate change and globalisation - risk of spread of tropical parasitic diseases	25
08672-S16	Small animals	B	13	Diagnosis, therapy and control of helminth-related diseases in animals	25
08674-S16	Small animals	B	13	Vector-transmitted pathogens	25
08675-S16	Small animals	B	13	Molecular diagnostic methods for parasites	25
08720-S16	Small animals	B	14	Basics on current pharmacological and toxicological topics	30
08726-S16	Small animals	B	14	Rehydration therapy in cases with dehydration and renal disfunction	30
08970-S16	Small animals	C	20	Problem-based case demonstrations in small animals II	100
08975-S16	Small animals	C	20	Journal internal medicine, dermatology and oncology	10
08978-S16	Small animals	C	20	Journal internal medicine, dermatology and oncology	10
08233-W16	Small animals	D	4	Clinical consultations in pet dietetics	50
08325-W16	Small animals	B	6	Hot topics in infection immunology (journal club)	8
08386-W16	Small animals	B	7	Multiresistant infectious agents and nosocomial infections	30
08545-W16	Small animals	D	10	Rendering of animal carcasses and offals in the State of Berlin	10
08671-W16	Small animals	B	13	Parasitic infections in pets	30
08739-W16	Small animals	B	14	Selected topics in pharmacotherapy and clinical pharmacology	15
08790-W16	Small animals	F	15	Attenting the DVG VET congress 2016 on "Diseases in aging animals)	170
08791-W16	Small animals	F	15	Attending the 2016 convention of the German Veterinary Practitioner Association	170
08830-W16	Small animals	C	17	Introduction to radiological diagnostics	140
08972-W16	Small animals	C	20	Advanced ophthalmolgy in pets, reptiles and birds	40
08980-W16	Small animals	C	20	Interactive case presentations Part 1	120
08981-W16	Small animals	C	20	Emergency medicine diagnostics and therapy	120

Course no.	Track	Subject area	Institution	Title	Max. no part.
08982-W16	Small animals	C	20	Journal internal medicine, dermatology and oncology	10
08983-W16	Small animals	C	20	Neurology in dogs and cats	24
08222-S16	Horses	D	4	Assuring quality of hay, hay and grass silage für cattle and horses (with excursion)	12
08672-S16	Horses	B	13	Diagnosis, therapy and control of helminth-related diseases in animals	25
08674-S16	Horses	B	13	Vector-transmitted pathogens	25
08720-S16	Horses	B	14	Basics on current pharmacological and toxicological topics	30
08726-S16	Horses	B	14	Rehydration therapy in cases with dehydration and renal disfunction	30
08820-S16	Horses	C	17	Diagnostic and therapeutical exercises in surgery and orthopedics	15
08821-S16	Horses	C	17	Diagnostic and therapeutical exercises in internal medicine	20
08825-S16	Horses	D	17	Clinical reproduction medicine in horses (equine neonatology III)	30
08826-S16	Horses	C	17	Physical therapy in horses	20
08895-S16	Horses	C	18	Basics of surgery and suture techniques in large animals	20
08222-S16	Horses	D	4	Assuring quality of hay, hay and grass silage für cattle and horses (with excursion)	12
08231-W16	Horses	D	4	Specifics of equine nutrition / feeding	35
08386-W16	Horses	B	7	Multiresistant infectious agents and nosocomial infections	30
08739-W16	Horses	B	14	Selected topics in pharmacotherapy and clinical pharmacology	15
08790-W16	Horses	F	15	Attenting the DVG VET congress 2016 on "Diseases in aging animals)	170
08791-W16	Horses	F	15	Attending the 2016 convention of the German Veterinary Practitioner Association	170
08820-W16	Horses	C	17	Diagnostic and therapeutical exercises in surgery and orthopedics	15
08821-W16	Horses	C	17	Diagnostic and therapeutical exercises in internal medicine	15
08822-W16	Horses	D	17	Diagnostic and therapeutical exercises in equine reproduction	15
08823-W16	Horses	D	17	Neonatology in foals Part I	30
08826-W16	Horses	C	17	Physical therapy in horses	15
08830-W16	Horses	C	17	Introduction to radiological diagnostics	140
08973-W16	Horses	C	20	Advanced ophthalmology in horses	24

Course no.	Track	Subject area	Institution	Title	Max. no part.
08221-S16	Farming livestock	D	4	Feeding and animal health	30
08222-S16	Farming livestock	D	4	Assuring quality of hay, hay and grass silage für cattle and horses (with excursion)	12
08373-S16	Farming livestock	E	7	Basics of vaccination strategies in companion and farm animals	30
08522-S16	Farming livestock	D	10	Basics of organic animal production	20
08544-S16	Farming livestock	D	10	Assessment of environmental and animal-level appropriatness of animaly husbandry systems Part 2	15
08670-S16	Farming livestock	B	13	Climate change and globalisation - risk of spread of tropical parasitic diseases	25
08672-S16	Farming livestock	B	13	Diagnosis, therapy and control of helminth-related diseases in animals	25
08673-S16	Farming livestock	E	13	Research, foreign and emergency aid projects in tropical veterinary medicine: objectives, activities and results	25
08674-S16	Farming livestock	B	13	Vector-transmitted pathogens	25
08675-S16	Farming livestock	B	13	Molecular diagnostic methods for parasites	25
08680-S16	Farming livestock	E	13	Control of ectoparasites in farm animals; strategies and treatments	30
08720-S16	Farming livestock	B	14	Basics on current pharmacological and toxicological topics	30
08726-S16	Farming livestock	B	14	Rehydration therapy in cases with dehydration and renal disfunction	30
08875-S16	Farming livestock	D	18	Practical exersises for farm-based medicine in dairy farms	20
08924-S16	Farming livestock	D	19	Repro: farm-based approaches 3	14
08936-S16	Farming livestock	F	19	First day competences in production animals Part 1	15
08169-W16	Farming livestock	A	3	The animal as a system and in a system: research in farm animal biology	8
08230-W16	Farming livestock	D	4	Dietary approaches in pigs and cattle	30
08234-W16	Farming livestock	D	4	Animal feeding in organic farming	30
08372-W16	Farming livestock	B	7	Interactive animal disease (outbreak) control	30
08375-W16	Farming livestock	B	7	Cellular microbiology of veterinary bacterial pathogens	30
08381-W16	Farming livestock	B	7	Epidemiology of infectious diseases	30
08384-W16	Farming livestock	B	7	From botulism to Von Botulismus bis blackleg - anaerobic spore-producing bacteria als animal disease and zoonotic agents	30
08386-W16	Farming livestock	B	7	Multiresistant infectious agents and nosocomial infections	30
08390-W16	Farming livestock	E	7	VetMAB – reduction of use of antimicrobials in the farm	160

Course no.	Track	Subject area	Institution	Title	Max. no part.
08541-W16	Farming livestock	D	10	Excercises and demonstrations in animal hygiene	20
08542-W16	Farming livestock	D	10	Epidemiology, etiology and control of salmonella infections	170
08543-W16	Farming livestock	D	10	Practical exercises in evaluating animal well-being and welfare in production animals	20
08544-W16	Farming livestock	D	10	Assessing animal well-being and welfare in production animals	20
08670-W16	Farming livestock	B	13	Trocial parasitoses	25
08673-W16	Farming livestock	B	13	Diagnosis, therapy and control of ectoparaistic and protozoal diseases in animals	25
08680-W16	Farming livestock	E	13	Control of ectoparasites in farm animals; strategies and treatments	40
08682-W16	Farming livestock	B	13	Farm-level control of parasites in sheep	7
08683-W16	Farming livestock	B	13	Ectoparasites as disease vectors in the tropics and subtropics	20
08739-W16	Farming livestock	B	14	Selected topics in pharmacotherapy and clinical pharmacology	15
08790-W16	Farming livestock	F	15	Attenting the DVG VET congress 2016 on "Diseases in aging animals)	170
08791-W16	Farming livestock	F	15	Attending the 2016 convention of the German Veterinary Practitioner Association	170
08830-W16	Farming livestock	C	17	Introduction to radiological diagnostics	140
08883-W16	Farming livestock	D	18	Medical aspects of reproduction of pigs I	30
08885-W16	Farming livestock	C	18	Specific clinical approaches and views	15
08886-W16	Farming livestock	E	18	Developing diagnostic and therapeutic regimes for patientswhile considering animal welfare, food safety and prudent drug use	20
08889-W16	Farming livestock	D	18	Practical execises in farm-based medicine	15
08893-W16	Farming livestock	C	18	Analysis of herd-based records Part 1	15
08894-W16	Farming livestock	D	18	Analysis of herd-based records Part 2	15
08926-W16	Farming livestock	F	19	Alternative andrology - manual skills lab - be creative!	16
08930-W16	Farming livestock	D	19	Repro 4: practical issues of fertility management	15
08931-W16	Farming livestock	F	19	First day competences Part 2	15
08019-S16	Research	C	IZW	Emerging Infectious Diseases (EID) in wildlife	20
08020-S16	Research	C	IZW	Wildlife diseases caused by retroviruses and retrotransposons	20
08162-S16	Research	A	3	Molecular biology of reproduction	24

Course no.	Track	Subject area	Institution	Title	Max. no part.
08290-S16	Research	B	5	Molecular virology	20
08316-S16	Research	B	6	Antibodies: tools for diagnostic tests	8
08318-S16	Research	B	6	Excersises in flow cytometry: FACS course I	8
08320-S16	Research	B	6	Cloning of and screening for genes	8
08321-S16	Research	B	6	Antiviral vaccines	12
08324-S16	Research	B	6	Molecular disease mechanisms in immunology - auto-immunity, allergy, immunodeficiency etc	16
08327-S16	Research	B	6	Infection biology journal club	10
08369-S16	Research	B	7	Tuberculosis, brucellosis and glanders: host adaptation of infectious agents in chronis diseases	30
08371-S16	Research	B	7	Molecular, genetic engineering and bioinformatic methods in bacteriology & mycology	10
08375-S16	Research	B	7	Cellular microbiology of veterinary bacterial pathogens	30
08384-S16	Research	B	7	Antimicrobial resistance in veterinary science	10
08395-S16	Research	B	7	Ancient weapons: structure and function of bacterial toxins and their relevanece in veterinary medicine	30
08523-S16	Research	D	10	Proteomics - application in research and therapy	6
08670-S16	Research	B	13	Climate change and globalisation - risk of spread of tropical parasitic diseases	25
08673-S16	Research	E	13	Research, foreign and emergency aid projects in tropical veterinary medicine: objectives, activities and results	25
08674-S16	Research	B	13	Vector-transmitted pathogens	25
08782-S16	Research	B	15	Epidemiology journal club	20
08018-W16	Research	C	IZW	Wildlife diseases caused by retroviruses and retrotransposons	25
08019-W16	Research	C	IZW	Emerging Infectious Diseases (EID) in wildlife	25
08031-W16	Research	C	12	Will males become extinct? Toxicological pathology of the male reproductive system	30
08169-W16	Research	A	3	The animal as a system and in a system: research in farm animal biology	8
08230-W16	Research	D	4	Dietary approaches in pigs and cattle	30
08232-W16	Research	D	4	Feed additives	25
08321-W16	Research	B	6	Antiviral vaccines and drugs	12
08323-W16	Research	B	6	Natural defence mechanisms - from fundamental research to therapy	16

Course no.	Track	Subject area	Institution	Title	Max. no part.
08325-W16	Research	B	6	Hot topics in infection immunology (journal club)	8
08326-W16	Research	B	6	Cloning of and screening for genes	8
08328-W16	Research	B	6	Antibodies: tools for diagnostic tests	8
08331-W16	Research	B	6	Cloning of and screening for genes	8
08370-W16	Research	B	7	Molecular pathogenesis of bacterial infections	30
08375-W16	Research	B	7	Cellular microbiology of veterinary bacterial pathogens	30
08376-W16	Research	B	7	Tuberculosis, brucellosis and glanders: host adaptation of infectious agents in chronis diseases	30
08377-W16	Research	B	7	Regulation of inflammation caused by bacterial zoonoses	30
08388-W16	Research	B	7	The digestive system as a habitat (with emphasis on E. coli)	30
08389-W16	Research	B	7	Ancient weapons: structure and function of bacterial toxins and their relevanece in veterinary medicine	30
08390-W16	Research	E	7	VetMAB – reduction of use of antimicrobials in the farm	160
08523-W16	Research	D	10	Proteomics - application in research and therapy	20
08546-W16	Research	C	12	Practical introduction molecular-based diagnostic methods	6
08670-W16	Research	B	13	Trocial parasitoses	25
08671-W16	Research	B	13	Parasitic infections in pets	30
08683-W16	Research	B	13	Ectoparasites as disease vectors in the tropics and subtropics	20
08781-W16	Research	F	15	Risk assessment in veterinary medicine	18
08782-W16	Research	F	15	Statistical analysis data using SPSS	10
08783-W16	Research	F	15	Statistical analysis data using SPSS	10
08784-W16	Research	B	15	Epidemiology journal club	16
08785-W16	Research	F	15	How to get to a scientific publication / thesis	60
08787-W16	Research	F	15	Basics of animal health economics	18
08790-W16	Research	F	15	Attenting the DVG VET congress 2016 on "Diseases in aging animals)	170
08791-W16	Research	F	15	Attending the 2016 convention of the German Veterinary Practitioner Association	170
08165-S16	VPH	D	3	Risk assessment on gene technology used in food and feed production	20

Course no.	Track	Subject area	Institution	Title	Max. no part.
08369-S16	VPH	B	7	Tuberculosis, brucellosis and glanders: host adaptation of infectious agents in chronis diseases	30
08681-S16	VPH	E	13	Parasites in food - epidemiology, diagnosis and monitoring	30
08294-W16	VPH	B	5	Population-based diagnosis of animal diseases - from sample to result	8
08321-W16	VPH	B	6	Antiviral vaccines and drugs	12
08371-W16	VPH	B	7	Development of new exotic zoonoses (with excursion)	30
08372-W16	VPH	B	7	Interactive animal disease (outbreak) control	30
08381-W16	VPH	B	7	Epidemiology of infectious diseases	30
08384-W16	VPH	B	7	From botulism to Von Botulismus bis blackleg - anaerobic spore-producing bacteria als animal disease and zoonotic agents	30
08389-W16	VPH	B	7	Ancient weapons: structure and function of bacterial toxins and their relevanece in veterinary medicine	30
08541-W16	VPH	D	10	Excercises and demonstrations in animal hygiene	20
08542-W16	VPH	D	10	Epidemiology, etiology and control of salmonella infections	170
08545-W16	VPH	D	10	Rendering of animal carcasses and offals in the State of Berlin	10
08681-W16	VPH	E	13	Parasites in food - epidemiology, diagnosis and monitoring	30
08781-W16	VPH	F	15	Risk assessment in veterinary medicine	18
08782-W16	VPH	F	15	Statistical analysis data using SPSS	10
08783-W16	VPH	F	15	Statistical analysis data using SPSS	10
08784-W16	VPH	B	15	Epidemiology journal club	16
08787-W16	VPH	F	15	Basics of animal health economics	18
08790-W16	VPH	F	15	Attenting the DVG VET congress 2016 on "Diseases in aging animals)	170
08791-W16	VPH	F	15	Attending the 2016 convention of the German Veterinary Practitioner Association	170
08015-S16	Others	C	IZW	Clinical aspects of zoo and wildlife biology Part 2	160
08020-S16	Others	C	IZW	Wildlife diseases caused by retroviruses and retrotransposons	20
08622-S16	Others	C	12	Clinical-pathological case presentations III	120
08627-S16	Others	C	12	Diagnostic exercises: macroscopical lesions Part 1	120
08784-S16	Others	F	15	Magic with MS Excel	18

Course no.	Track	Subject area	Institution	Title	Max. no part.
08923-S16	Others	F	19	Introduction to natural medicine (E-Learning)	170
08924-S16	Others	D	19	Repro: farm-based approaches 3	14
08925-S16	Others	F	19	Let´s beat the stress - relexed into the summer!	10
08022-W16	Others	C	IZW	Clinical aspects of zoo and wildlife biology Part 1	160
08023-W16	Others	D	IZW	Reproduction medicine in wildlife	15
08031-W16	Others	C	12	Will males become extinct? Toxicological pathology of the male reproductive system	30
08082-W16	Others	F	2	Business economics for veterinarians Part 1	30
08370-W16	Others	B	7	Molecular pathogenesis of bacterial infections	30
08377-W16	Others	B	7	Regulation of inflammation caused by bacterial zoonoses	30
08623-W16	Others	C	12	Clinical-pathological case presentations IV	80
08627-W16	Others	C	12	Diagnostic exercises: macroscopical lesions Part 1	80
08742-W16	Others	B	14	Basics on current pharmacological and toxicological topics	30
08785-W16	Others	F	15	How to get to a scientific publication / thesis	60
08790-W16	Others	F	15	Attenting the DVG VET congress 2016 on "Diseases in aging animals)	170
08791-W16	Others	F	15	Attending the 2016 convention of the German Veterinary Practitioner Association	170
08889-W16	Others	D	18	Practical execises in farm-based medicine	15
08895-W16	Others	C	18	Basics of surgery and suture techniques in large animals	20
08926-W16	Others	F	19	Alternative andrology - manual skills lab - be creative!	16
08932-W16	Others	F	19	Communication issues in veterinary practice	15

Appendix to 3.1.8.a: Extramural practical training (EPT)

Students looking for EPT training institutions / positions are assisted in the following way:

- The section “Looking for an Internship” on the faculty website
- Lists with contacts details for institutes suitable for hygiene and slaughter internships from the Institute of Food Safety and Food Hygiene.
- List of certified “Veterinary Training Practices” from the Federal Association of Practicing Veterinarians (bpt)
- Overviews with internship places in the fields of curative practice, university institutions, public authorities, research institutions, the Zoological Gardens and industry of the German Veterinary Medical Society (DVG)
- The guide “Arranging the EPT" by the Federal Association of Practicing Veterinarians (bpt).
- Coordination of the agricultural internship is done by the Faculty of Life Sciences at Humboldt-Universität Berlin.

Appendix to 3.1.8.b: Quality assurance of extramural traineeships in the framework of veterinary medicine training in Germany

Veterinary training in Germany is regulated by the German Veterinary Medical Licensure Law (TAppV) from 27. 07. 2006, last amended in 2016, which reflects the requirements of EU Directive 2005/36 / EC and translates these into applicable German law.

Apart from the subjects listed which have to be implemented by immediate teaching through the veterinary establishments (faculties, university), the TAppV provides requirements for content and training places of 1170 hours of mandatory extramural practical training (EPT). This practical training consists of the following four compulsory blocks:

1. Exercise in agriculture, animal breeding and animal husbandry (70 hrs)
2. Practical training in a private veterinary practice or veterinary hospital /clinic (850 hrs)
3. Practical training in hygiene control, control of foodstuffs, inspection of animals for slaughter and meat inspection (175 hrs)
4. Practical training in the public veterinary service (75 hrs)

Students generally complete this practical training in extramural institutions, however, several places are also offered by the clinics and institutions of veterinary establishments (as defined by the EAEVE).

The students independently organize their internships according to the TAppV and receive a certificate from the supervising veterinarian or institution. All certificates are checked by the veterinary establishments resp. the State examination offices for compliance with formal criteria according to TAppV.

For the purpose of securing a high standard in veterinary education and improving the achievement of first-day competences of graduates, veterinary establishments have developed learning target catalogs for the various extramural trainings, which include essential subjects and activities that students are to be taught or shown. These catalogs provide a guideline for the respective extramural training for both, students and teaching/supervising veterinarians. The written evaluation of each extramural training by the students and supervising veterinarians serves as an important feedback tool.

In order to further improve extramural training in a veterinary practice the Federal Association of Practicing Veterinarians (bpt) developed the quality label "Veterinary Training Practice" in collaboration with the veterinary establishments and the veterinary student body. Practices complying with these standards are recognized by the bpt as a training practice for students and may carry this label. Veterinary establishments strongly support this initiative and closely cooporate with the professional organization.

We would like to emphasize the following important point to EAEVE: The concept of external veterinary practices that are contractually bound to veterinary establishments and that often are financially rewarded for the implementation of extramural training currently cannot be implemented in Germany since it does not agree with the legislation concerning the organization of extramural training required by German universities. The budgets allocated to the veterinary establishments are designated for university-bound intramural education. It is within the responsibility of the veterinary profession to provide their service capacity for extramural training of students.

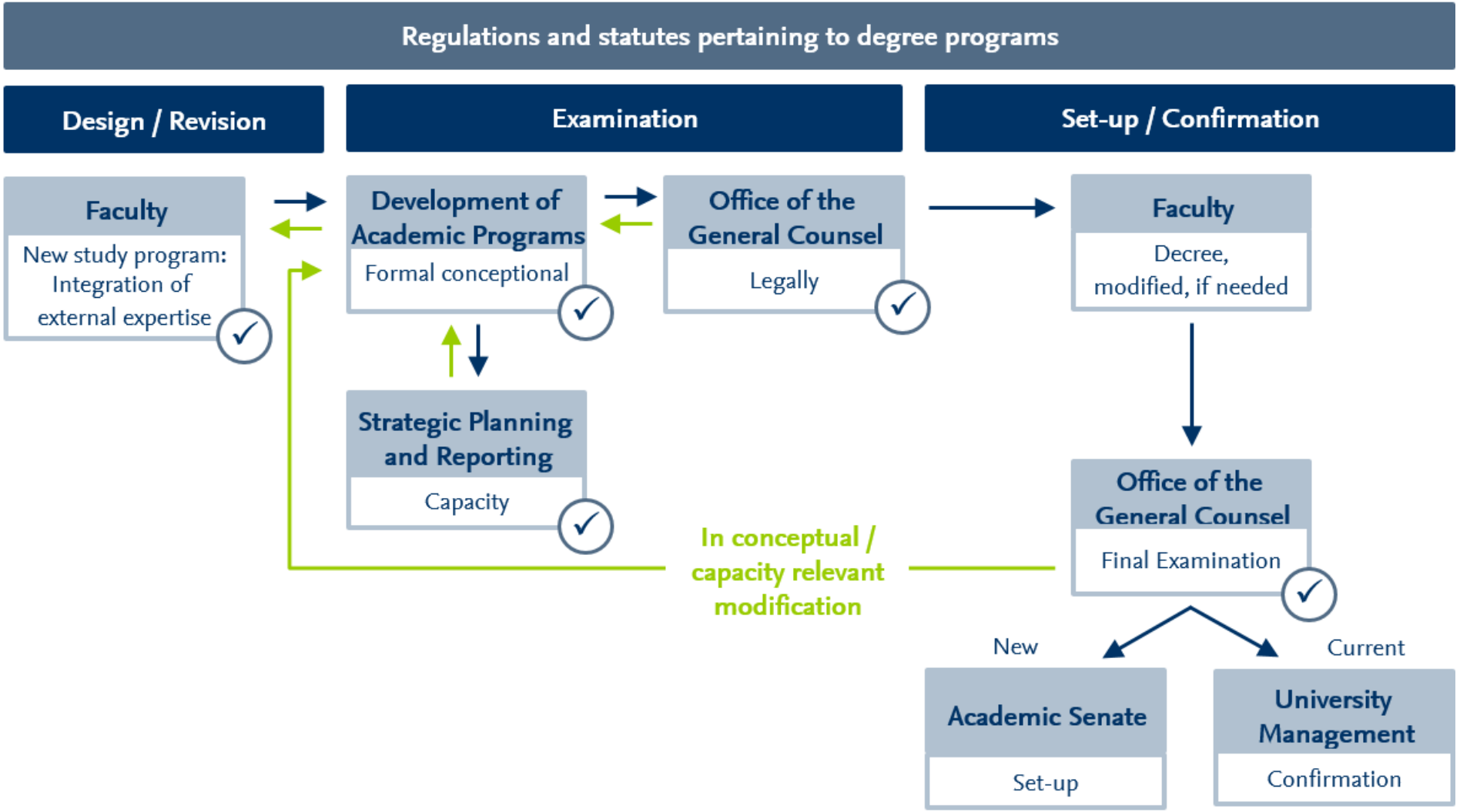
In consequence, any financial remuneration of contractual training practices would have to be borne by the individual veterinary establishment, which would cause a considerable reduction of the available resources for intramural training, given the tight budgets provided by the Federal States in Germany.

A further aspect relates to the annual calculation of the capacity of study places of each individual veterinary establishment on the basis of teaching personnel. This is legally anchored in Germany and governed by the Capacity Directive (KapVO). Any additional person involved in teaching on behalf of a veterinary establishment would be capacity-efficient and has to be included in the calculation of the study places. As a result of officially contracting veterinarians providing extramural training, the number of students to be enrolled in the first semester would substantially increase while the number of faculty-bound teaching personnel would remain constant. Consequently, the ratio of lecturers per student and the quality of the training during the intramural training would be noticeably reduced.

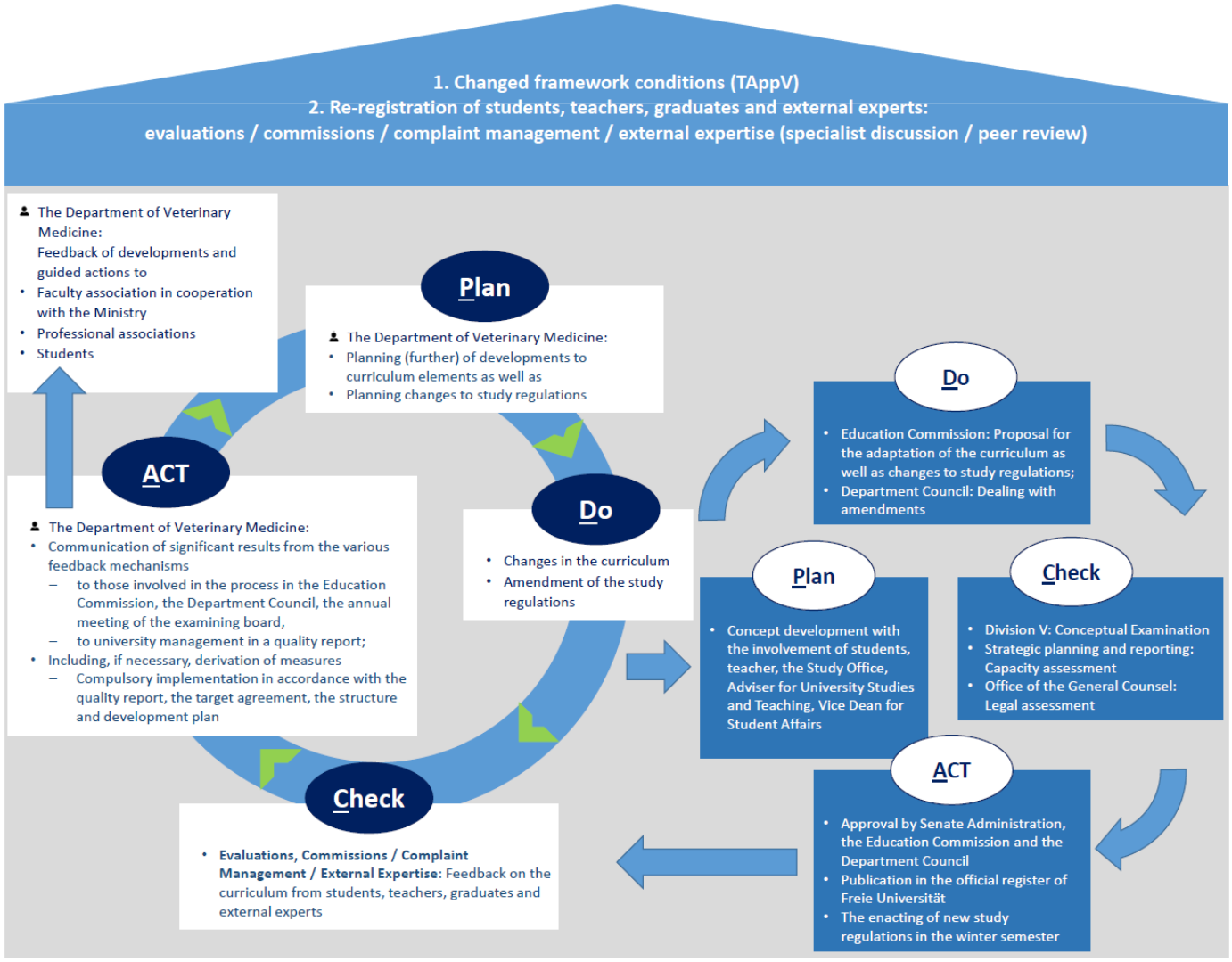
Therefore the German Establisments for Veterinary Education jointly ask EAEVE to acknowledge the limitations imposed by the legal framework on the extramural practical training and accept the current status of quality control as implemented by the establishments.

Authored by all Establishments of Veterinary Education in Germany

Appendix to 3.1.10.a: Quality assurance in the (continued) advancement of degree programs (simplified process section)



Appendix to 3.1.10.b: PDCA cycle (continued) advancement of the curriculum



Appendix to 4.1.2.: Overview of premises for lecturing, group work and practical work

Location	Name of building	Room number	No. of places
Dahlem	Institute of Anatomy (Koserstr. 20)	025, lecture hall	182
Düppel	Institute of Veterinary Pathology (House 31)	0.06, lecture hall	127
	Equine Clinic (Building 3)	2, lecture hall	120*
	Clinic for Ruminants (Building 28)	013, Lecture hall	83
	Small Animal Clinic (Building 1)	110, lecture hall	140

Overview 1 Premises for lecturing

* The building used for the Equine Clinic includes a lecture theatre which is currently undergoing structural restoration. The lecture theatre will be equipped with 170 seats.

Location	No. of seminar rooms	No. of places
Dahlem (Koserstr. 20/Domäne Dahlem)	5	15/25/25/40/45
Düppel	25	10-60
Mitte	1	12
Bad Saarow	1	4

Overview 2 Premises for group work (seminar rooms)

Numbers of rooms listed below includes all rooms used for practical undergraduate training, eg. course rooms, labs, necropsy and dissection halls, demonstration halls, examination halls, surgery rooms.

Location	No. of rooms	No. of places
Dahlem (Koserstr. 20/Domäne Dahlem)	8	15-180
Düppel	44	10-60
Mitte	1	20
Bad Saarow	1	15

Overview 3 Premises for practical work

Appendix to 4.1.3.: Overview of premises and places for animal housing

Institute / clinic	Species	Number of premises (animal places) for housing		
		Healthy animals	Hospitalised animals	Isolated animals
Institute of Physiology	Xenopus laevis	24		
Institute of Biochemistry	Bees	Approximately 30 colonies (> 1.5 million animals)		
Institute of Animal Nutrition	Dogs	16		
	Cats	12		
	Pigs	198		
	Chickens	644		
Robert von Ostertag House (Immunology, Animal Hygiene, Microbiology, Virology and Parasitology)	Pigs	302		
	Mice	3370		
	Rats	135		
	Rabbits	30		
	Gerbils	144		
	Chickens	1920		
Institute of Parasitology and Tropical Veterinary Medicine	Mice	80		
	Gerbils	80		
	Rabbits	26		
	Dogs	24		
	Cats	18		
	Chicks	20		
	Pigs	30		
	Cows	18		
	Sheep or goats	30		
	Horses	9		
Institute of Pharmacology and Toxicology	Dogs ≤ 20 kg > 20 kg	 11 18		
	Rats	2000		
	Mice	2500		
	Rabbits	10		
	Hamsters	300		
	Cows	1		
	Sheep / goats Alternatively pigs up to 30 kg	39 15		
	Horses	2		
Institute of Poultry Diseases	Chickens and turkeys	240	2	2
	Pigeons	70		
	Pigeon chicks	40		

	Chicks	630	1	
Equine Clinic – Düppel	Horses	(12)	46	4
Equine Clinic – Bad Saarow	Horses	(25)	88	0
Ruminant and Swine Clinic	Pigs	80	37	2
	Cows incl. calves	79	51	15
	Small ruminant animals	18	6	0
Animal Reproduction Clinic	Rabbits	(15) 15	8	0
	Pigs	(2) 2	3	0
	Cows	45	Female cows 25 Calves 6 Bulls 3	4
	Small ruminant animals	30	20	0
Small Animal Clinic	Dogs	0	46	5
	Cats	0	25	5
	Pets (guinea pigs, rabbits, caged birds, reptiles)	0	10	
	Wild animals (birds of prey, hedgehogs, water fowl etc.)	0	9	

Appendix to 4.1.5.: Number of rooms and places for study and self-learning, locker rooms and accommodation for on call students

Institute / clinic	Premises for					
	study and self-learning		locker rooms		accommodation for on call students	
	no of rooms	no of workplaces	no of rooms	no of lockers	no of rooms	no of places
Manor house			2	48		
Library	PC Pool B	10 PC workstations				
Basement		4 PC workstations				
		10 (without IT facilities)				
Ground floor		4 PC workstations	Entrance area	48		
		10 (without IT facilities)				
Top floor		70 (without IT facilities)				
	4 group study rooms	60				
IT facility	PC Pool A	40 PC workstations				
Anatomy	4	380	4	388		
Physiology	1	10				
Biochemistry	2	30				
Animal nutrition	1	25	1	3		
Virology	2	20	2	RvO*		
Immunology	2	20	1	RvO*		
Microbiology	1	16	2	RvO*		
Food safety & Hygiene	1	3	1	30		
Animal & Environm. Hygiene			1	RvO*		
Pathology	2	16	2	110		
Parasitology			1	RvO*		
Equine clinic (Düppel)						
Equine center (Bad Saarow)	1	15	1	5	2	4
Ruminant and swine clinic	3	18	3	120	2	3
Animal reproduction clinic	2	9	1	9	1	9
Small animal clinic	1	12	2	90	1	

* Number of lockers in RvO = 150

Appendix to 4.1.6.: Overview of vehicles operated by the Establishment

Einrichtung / Klinik	Number of vehicles	Type	Number of seats	Students transportation	Ambulatory clinics	Live animals transportation	Cadavers transportation	Others
Anatomy	1	VW vans (closed panel)	3				X	
Animal Nutrition	1	Fiat Doblo Cargo Natural Power	2					X
Animal Nutrition	1	Mercedes 208 CDI	9	X				
Animal Nutrition	1	Horse-boxes	0			X		
Food Safety and Hygiene	1	MAN TGL 10.180 4x2 BL	3				X	
	1	Focus Concept hatchback	5	X				
Animal Hygiene and Environmental Health	1	VW T6 estate van	8	X				
Veterinary Pathology	1	VW Caddy Life	5	X				
Parasitology	1	VW Passat estate	8	X				
Parasitology	1	Daimler 113 CDI estate	8	X				
Institute of Poultry Diseases	1	VW T5 estate van	8	X				
Equine Clinic	1	VW Sharan	5	X				
Equine Clinic	1	Weidemann					X	
Equine Clinic – Bad Saarow	1	Motorised horse-boxes	1			X		
	1	Ford Transit Tourneo	8	X				
Ruminant and Swine Clinic	1	Iveco towing vehicle				X		
Ruminant and Swine Clinic	1	MAN cattle truck				X		
Ruminant and Swine Clinic	1	Menke axle trailer				X		
Ruminant and Swine Clinic	1	VW T4 van			X			
Ruminant and Swine Clinic	2	VW Passat	5	X				
Ruminant and Swine Clinic	1	VW Golf Variant	5	X				
Ruminant and Swine Clinic	1	VW Caddy estate	5	X				
Ruminant and Swine Clinic	1	VW T5 van	5	X				
Ruminant and Swine Clinic	1	Trebbiner trailer						X
Ruminant and Swine Clinic	1	WOPA						X
Animal Reproduction Clinic	3	VW Golf	5	X				
Animal Reproduction Clinic	1	Seat Alhambra	7	X				
Dean's Office	1	Mercedes Sprinter	3				X	X

Overview 4 Vehicles of the establishment

Appendix to 5.1.2.: Examples and detailed description of non-clinical animal work

Non-clinical animal work is primarily taught and practiced in the subjects related to Anatomy, Physiology, Pathology, Animal Welfare and Laboratory Animal Science. Examples are:

- **Anatomy:** Small groups with up to 6 students. Each group begins by dissecting a dog or cat. During in-situ demonstration on carcasses and with live animals, the anatomy of the body cavities is demonstrated. In comparative anatomy students are taught the differences between relevant species using carcasses, body parts and live animals. Part of anatomy teaching is integrated into the organs-centered module lectures.
- **Pathological-anatomical demonstrations:** Smalls groups of up to 8 people each. Students observe, describe and discuss pathological findings by means of materials used in the routine operations of the institute and plastinates, and learn how to produce pathological-anatomical diagnoses - including differential diagnoses. During the clinical rotation, students work in regular pathology operations for two weeks. Under the supervision of assistant doctors, small groups of two students each work on and discuss cases that they shall present to pathologists in the afternoon meeting. The practical post-mortem examination takes place on the last day. To this end, every student on rotation shall carry out a post-mortem examination on an animal and write a post-mortem examination report.
- **Animal welfare seminar**: In cooperation with official veterinarians, current case studies shall be dealt with. On each occasion, two students shall prepare a case study, which has already been uploaded to Blackboard, and work out solution approaches. These shall then be discussed and alternative solutions shall be demonstrated. It is important, particularly in regard to animal welfare, to impart ethical and legal Day One Competences so that students are sensitised to issues and are able to act within the law. Knowledge from the entire field of animal welfare (including livestock, companion animals, animal disease control, test animals) shall be imparted on the students.
- **Laboratory animal science:** An elective compulsory course - supplementary to the theoretical foundations from the lecture. Practical knowledge of the following shall be imparted: knowledge pertaining to the most frequently used animal species in laboratory experiments - namely rats and mice, practical exercises in the handling, housing, identification and transport of animals, application and sampling techniques, assessment of behaviour patterns as an indication of animal well-being (and potential suffering) and in humanely destroying laboratory animals according to relevant animal welfare regulations. For every two students, there is one mouse and one rat for use. Together with the theoretical foundations from the lecture and the practical exercises from the elective compulsory course for laboratory animal science, students acquire a proof of expertise so that they are able to collaborate in scientific projects on laboratory animals. In an advanced course, skills pertaining to FELAS B recommendations (Federation of European Laboratory Animal Science - Category B course), including hygiene concepts, laboratory animal handling measures as well as experiment planning and application procedures shall be imparted.
- **Physiology:** students in small groups have to run through topic-relevant practical exercises on animals such as testing reflexes, examining eyes and years, tracking heart frequency and blood pressure measurements etc.

Appendix to 5.1.4.: Opening days and times for all animal clinics

Clinic	Consultations			Emergency service	
	Type	Days	Opening hours	Clinic	Ambulatory clinic
Institute of Poultry Diseases	General consultations	Mon-Fri	9:00 a.m. - 3:00 p.m.	Not applicable	See footnote*
Equine Clinic (Düppel)	General Consultations	Mon-Fri	8:00 a.m. - 4:00 p.m.	24h/day/year	
	Ophthamology	Mon and Thu	8:00 a.m. - 12:00 p.m.		
Equine Clinic (Bad Saarow)	General consultations	Mon-Fri	8:00 a.m. - 4:30 p.m.	on-call: 24h/day/year	
Ruminant and Swine Clinic	General consultations	Mon-Thu	07:30 a.m. - 4:00 p.m.	on-call: 24h/day/year	on-call: 24h/day/year
		Fri	07:30 a.m. - 3:00 p.m.		
Animal Reproduction Clinic	General consultations	Mon-Fri	07:30 a.m. - 4:00 p.m.	on-call: 24h/day/year	on-call: 2 days/week 7:00 a.m. to 2:30 p.m.
Small Animal Clinic	Internal medicine consultations	Mon-Fri	10:00 a.m. - 13:00 p.m.	24h/day/year	
	Surgery & orthopaedic consultations	Mon-Fri	12:00 a.m. - 14:00 p.m.		
	Ophthamology	Mon, Wed	10:00 a.m. - 12:00 a.m. and 1:00 p.m. - 2:30 p.m.		
		Thurs	12:30 p.m. - 3:30 p.m.		
	Dermatology	Wed, Thur	10:00 a.m. - 1:00 p.m.		
	Cardiology	Tue, Thur	09:00 p.m. - 12:00 p.m.		
	Odontology	Tue	09:00 a.m. - 1:00 p.m.		
	Domestic animals	Tue, Thur	10:00 p.m. - 12:30 p.m.		

*Ambulatory excursion to poulty farms in the context of clinical training (every other week, 19 excursions per year)

Appendix to 5.1.8.a: Examples of E-Learning / Blended learning modules

Anatomy: In the Anatomy II course (see Anatomy), all species (with the exception of cats and dogs) are covered systematically and comparatively with regard to the organ systems. In cooperation with CeDis (E-learning competence centre of Freie Universität Berlin), lectures were digitised and made available to students on Blackboard. Lecturers formulated explicit learning objectives and these have also been published on Blackboard. Moreover, examination subjects for tests were clearly defined and made public for both students and the relevant lecturers at the beginning of the semester. Tests are conducted in a structured oral or written 'single-choice' form. Every test subject comprises ten 'items' that are directly derived from the learning objectives and each are graded with 0-3 points.

The number of in-term test has been reduced from four to three, and they are equally divided over both the third and fourth semester. The reduction in and equal distribution of the tests stems from student requests to lessen the workload during the third semester (decided during a meeting with lecturers and student representatives of the third and fifth semesters in February 2016). Also, a stronger focus has been placed on more clinically related subject matters. A strong link to the clinical field is established through demonstrations in this subject area (e.g. blood sampling and injection sites, saddle areas on a horse's back). The In-situ Exercises II have been incorporated into the course.

Histology/Embryology: The lecture series "Experimental Embryology I and II" were digitised and are available to students on Blackboard. During classroom-based sessions, students can clarify open questions.

Interdisciplinary course work: According to the TAppV, a certain number of lecture hours is designated to feature case studies from a clinical setting, Veterinary Public Health (VPH) and to cover Soft Skills. In these teaching modules, subjects are presented in a problem-oriented manner so that the linkage of concepts between the different disciplines is clearly visible. The topics were chosen by the lead institution. In the past, these courses often were poorly evaluated.
The structure and content is currently revised in collaboration with CeDiS as part of a larger project financed by the University (QuerVet) to encompass a "blended learning" model with e-learning modules and classroom-based sessions. Through this, students shall be given the possibility to work through complex cases at their own pace, be able to exchange information over the e-learning platform and discuss further aspects of selected problem areas during classroom-based sessions. Modules already developed include the gynaecological examination of a female dog, outbreak investigation related to raw milk consumption and colic in horses. The spectrum of cases will continue to be expanded with VPH subject matter (including animal welfare) and clinical case studies.

Appendix to 5.1.8.b: E-learning at the Faculty of Veterinary Medicine

Individual resources are password protected.

Name	**Second Room**
Subject	Institute of Veterinary Anatomy (WE01)
Target groups:	Students in the 1st - 4th subject-specific semesters
Short description:	E-learning platform for all digital resources and events for veterinary anatomy and histology (FU Learning Prize 2010: Prize winner in the category commitment to teaching)
Learning environment:	Blackboard Course ID: VETMED_Anatom_SR

Name	**Virtual Microscope for Histological Preparations**
Subject	Institute of Veterinary Anatomy (WE01)
Target groups:	Students in the 1st - 4th subject-specific semesters
Short description:	Virtual Microscope using “Zoomify” technology. The collection of over 100 histological preparations is used by students for deeper study as well as for preparing for examinations.
Learning environment:	Blackboard Course ID: VETMED_Pool_HistPraep

Name	**Canis Praep**
Subject	Institute of Veterinary Anatomy (WE01)
Target groups:	Students in the 1st - 4th subject-specific semesters
Short description:	Comprehensive films for canine preparations The collection of over 100 hands-on videos on canine preparation is used by students for deeper study as well as for preparing for examinations.
Learning environment:	Blackboard Course ID: VETMED_CanisP

Name	**Cyber-Prep: Canine Anatomy in Pictures and with Sound**
Subject	Institute of Veterinary Anatomy (WE01)
Target groups:	Students in the 1st - 4th subject-specific semesters
Short description:	Photographic images and film sequences are shown based on practical exercises in canine preparation.
Learning environment:	Blackboard Course ID: VETMED_Pool_CyberHund

Name	**Cat Anatomy: a Berlin-Cincinnati cooperation**
Subject	Institute of Veterinary Anatomy (WE01)
Target groups:	Students in the 1st - 4th subject-specific semesters
Short description:	Photographic images are shown based on practical exercises in feline preparation.
Learning environment:	Blackboard Course ID: VETMED_

Name	Interactive Physiological Exercises
Subject	Veterinary Physiology (WE02)
Target groups:	Students in the 3rd - 4th subject-specific semesters and those preparing for preliminary examinations
Short description:	Course materials have been worked up into an interactive and integrated problem-based online script which highlights various topics with self-initiated tests and learning units*). This was achieved using the HTML5 author system "tet.folio", technically conceived at FU Berlin by physics teachers and developed for users in cooperation with the Institute of Veterinary Physiology. The E-script is divided into 10 exercises and didactically integrated into a blended learning scenario that can be exported as a PDF for study purposes.
Learning environment bzw. link:	Blackboard Course ID: VETMEDUe_08103_17S *) e.g.: https://tetfolio.fu-berlin.de/web/we02_blutgruppen

Name	Sim Nerv (Virtual Physiology)
Subject	Veterinary Physiology (WE02)
Target Groups:	Students in the 3rd - 4th subject-specific semesters
Short Description:	The program introduces a fully equipped laboratory on the computer screen. Through this, students can realistically conduct classic experiments on an isolated nerve in a frog's muscle.
Learning Environment or Link:	Windows-based PC in the PC Pool at the faculty, at home PC (with limited term license) http://www.virtual-physiology.com/#SimNerv

Name	SimHeart (Virtual Physiology)
Subject	Veterinary Physiology (WE02)
Target Groups:	Students in the 3rd - 4th subject-specific semesters
Short Description:	Provides a virtual laboratory for assessing cardiac contractions in the Langendorff set-up. It is possible to administer various transmitters and medications and to assess responses from them.
Learning Environment or Link:	Windows-based PC in the PC Pool at the faculty and on home PCs (with limited term license) http://www.virtual-physiology.com/#SimHeart

Name	SimMuscle (Virtual Physiology)
Subject	Veterinary Physiology (WE02)
Target Groups:	Students in the 3rd - 4th subject-specific semesters as part of physiological exercises and those preparing for preliminary examinations
Short Description:	The program introduces a fully equipped laboratory on the computer screen. Through this, students can realistically conduct classic experiments on an isolated frog's heart.
Learning Environment or Link:	Windows-based PC in the PC Pool at the faculty and on home PCs (with limited term license) http://www.virtual-physiology.com/#SimMuscle

Name	SimVessel (Virtual Physiology)
Subject	Veterinary Physiology (WE02)
Target Groups:	Students in the 3rd - 4th subject-specific semesters as part of physiological exercises and those preparing for preliminary examinations
Short Description:	The program provides a virtual laboratory for examining the contraction ability of smooth muscle cells as they occur in blood vessels or the intestine.
Learning Environment or Link:	Windows-based PC in the PC Pool at the faculty and on home PCs (with limited term license) http://www.virtual-physiology.com/#SimVessel

Name	Business Management for Students of Veterinary Medicine
Subject	Veterinary Physiology (WE02)
Target Groups:	Students in the 5th - 8th subject-specific semesters
Short Description:	Comprehensive course on business management principles for veterinarians. This interactive tool is found online interactive in various social media.
Link:	Facebook, no website or LMS

Name	Virtual Beekeeping 1.0
Subject	Institute of Biochemistry (WE03)
Target Groups:	Students in the 3rd - 11th subject-specific semesters
Short Description:	E-learning course "Theory and Practice in Bee-keeping for Veterinarians"
Link:	https://ssl2.cms.fu-berlin.de/vetmed/e-learning/PM/bienenhaltung/index.html?mktk=lyt5Ba2vQte8GJO%2BhnjeeLBIGSGNn5IFRZ3%2B8d%2FD7lnRdlPuCKDWhHTjbv9KveS%2B

Name	eMibi
Subject	Institute of Microbiology and Epizootics (WE07)
Target Groups:	Students in the 5th - 11th subject-specific semesters FS
Short Description:	Computer-based, self-directed learning for preparation and post-processing of internship and for examination preparation
Link:	http://emibi.imt-education.de/mibikurs/index.php

Name	miLCH
Subject	Institute of Food Safety and Food Hygiene (WE 08)
Target Groups:	Students in the 5th - 11th subject-specific semesters
Short Description:	Information about milk. It covers more than general information about hygienic aspects, but goes further in covering chemical-physical examination methods of product through to legal fundamentals.
Link:	https://ssl2.cms.fu-berlin.de/vetmed/e-learning/PM/euter_milch/milch/index.html

Name	Poultry Diseases online
Subject	Institute of Poultry Diseases (WE 15)
Target Groups:	Students in the 5th - 11th subject-specific semesters
Short Description:	Information about different diseases in commercial poultry as well as in exotic and wild birds
Link:	Blackboard http://www.vetmed.fu-berlin.de/e-learning/gefluegel/index.html

Name	QuerVet
Subject	Institute of Veterinary Epidemiology and Biostatistics (WE 16)
Target Groups:	Students in the 1st - 8th subject-specific semesters
Short Description:	Case-based, practice-oriented and interdisciplinary blended learning concept for cross-section teaching in veterinary medicine
Learning Environment:	Blackboard Course ID: quervet

Name	Vetipedia
Subject	Animal Reproduction Clinic (WE19)
Target Groups:	Students and veterinarians
Short Description:	Vetipedia is an editable article collection covering all topics of veterinary medicine. It is used mainly in teaching (students create their own text and image materials) and is used in various learning scenarios. It also serves as a reference work for students of veterinary medicine, practising veterinarians as well as veterinarians in public service or at universities and promotes interdisciplinary learning and understanding through linking.
Link:	www.vetipedia.org

Name	Critically Appraised Topics (CATs)
Subject	Animal Reproduction Clinic (WE19)
Target Groups:	Students and veterinarians
Short Description:	Database for independent and collaborative preparation of Critically Appraised Topics (CATs) or knowledge summaries - by students or veterinarians - within the context of evidence-based veterinary medicine. The database enables guided online preparation of CATs as well as a searchable collection of already created CATs. (Awarded the KELDAT Teaching Award 2013)
Link:	http://wikis.fu-berlin.de/display/cats

Name	Interactive Learning System: Fundamentals of Natural Healing Methods
Subject	Animal Reproduction Clinic (WE19)
Target Groups:	Students and veterinarians
Short Description:	In this online course, the fundamentals of complementary and alternative medicine are taught contextually within evidence-based veterinary medicine. The theories and application of therapy methods (especially homoeopathy, acupuncture and herbal medicine) are objectively conveyed and illustrated through case examples, videos and animations. A chapter on the currently unsatisfactory scientific situation rounds out the course.
Link:	https://ssl2.cms.fu-berlin.de/vetmed/e-learning/PM/nhv/111nhvallgemein/index.html

Name	eUTER
Subject	Animal Reproduction Clinic (WE19)
Target Groups:	Students and veterinarians
Short Description:	Overview of udder physiology, environmental influences on the udder health as well as diagnosis and therapy of udder diseases
Link:	https://ssl2.cms.fu-berlin.de/vetmed/e-learning/PM/euter_milch/euter/index.html

Name	Case-orientated Ophthalmology
Subject	Small Animal Clinic (WE20)
Target Groups:	Students in the 5th - 11th subject-specific semesters
Short Description:	Opthalmological cases for students doing private study for their clinical section, have been prepared on the Casus platform. This is a case-based multimedia learning and author system.
Link:	http://fu-berlin.casus.net/

Appendix to 5.1.8.c: Clinical Rotation Timetables

Week 01: Small Animal Clinic (WE20)						
Time	**Monday**	**Tuesday**	**Wednesday**	**Thursday**	**Friday**	**Saturday/ Sunday**
07:00			ECVIM journal club			1 Weekend shift per student
08:00	Polyclinic	Anaesthesia rounds	Ophthalmology rounds	Surgery rounds	Neurology rounds	
09:00		Polyclinic	Skin and 13:00 eye consultation hours (every 2 hours)	Polyclinic	Polyclinic	
10:00						
11:00						
12:00						
13:00		Operation course		Problem-oriented case presentation		
14:00						
15:00				Polyclinic		
16:00						

Week 02: Small Animal Clinic (WE20)						
Time	**Monday**	**Tuesday**	**Wednesday**	**Thursday**	**Friday**	**Saturday/ Sunday**
07:00					ECVS journal club	1 Weekend shift per student
08:00	Introduction to literature research	Internal medicine rounds	Pets rounds	Radiology rounds	Surgery rounds	
09:00	Operations	Pets	Operations	Pets	Operations	
10:00						
11:00						
12:00						
13:00		Operations		Problem-oriented case presentation		
14:00				Operations		
15:00						
16:00						

Week 03: Equine Clinic - Surgery and Radiology (WE17)						
Time	**Monday**	**Tuesday**	**Wednesday**	**Thursday**	**Friday**	**Saturday/ Sunday**
07:30 - 08:00		Patient examination	Patient examination	Patient examination	Patient examination	
08:00 - 08:45		Case discussion imaging	Case discussion imaging	Case discussion imaging	Case discussion imaging	Patient examination during early weekend shift (1 student)
08:45 - 09:00		Morning rounds	Morning rounds	Morning rounds	Morning rounds	Patient examination
09:00 - 12:00	Introduction, entry inspection Stable tour, organisation	Assisting outpatients and inpatients	Assisting outpatients and inpatients	Assisting outpatients and inpatients	Assisting outpatients and inpatients	Assisting in care of inpatients and emergency cases
12:00 - 13:00	Lunch break	Lunch break	Lunch break	Lunch break	Lunch break	Lunch break
13:00 - 14:00	Private study time	Private study time	Private study time	Private study time	Private study time	
14:00 - 15:30	Private study time	Rotation course: Case discussion X-rays	Rotation course: Internal Medicine 1	Rotation course: Blacksmith's	Rotation course: Block anaesthesia	
15:30 - 16:00	Patient examination	Patient examination	Patient examination	Patient examination	Patient examination	
16:00 - 16:30	Evening rounds	Evening rounds	Evening rounds	Evening rounds	Evening rounds	Assisting in care of inpatients and emergency cases (1 student)
16:30 - 17:30	Break and private study time	Break and private study time	Break and private study time	Break and private study time	Break and private study time	Assisting in care of inpatients and emergency cases (1 student)
17:30 - 20:00	Evening shift and assisting in care of inpatients and emergency cases (2 students)	Evening shift and assisting in care of inpatients and emergency cases (2 students)	Evening shift and assisting in care of inpatients and emergency cases (2 students)	Evening shift and assisting in care of inpatients and emergency cases (2 students)	Evening shift and assisting in care of inpatients and emergency cases (2 students)	Assisting in care of inpatients and emergency cases (1 student)

Week 04: Equine Clinic - Surgery and Radiology (WE17)						
Time	**Monday**	**Tuesday**	**Wednesday**	**Thursday**	**Friday**	**Saturday/ Sunday**
07:30 - 08:00	Patient examination	Patient examination	Patient examination	Patient examination	Patient examination	
08:00 - 08:45	Case discussion imaging	Case discussion imaging	Case discussion imaging	Case discussion imaging	Case discussion imaging	Patient examination during early weekend shift (1 student)
08:45 - 09:00	Morning rounds	Morning rounds	Morning rounds	Morning rounds	Morning rounds	Patient examination
09:00 - 12:00	Introduction, stable tour, organisation	Assisting outpatients and inpatients	Assisting outpatients and inpatients	Assisting outpatients and inpatients	Assisting outpatients and inpatients	Assisting in care of inpatients and emergency cases
12:00 - 13:00	Lunch break	Lunch break	Lunch break	Lunch break	Lunch break	
13:00 - 14:00	Private study time	Private study time	Private study time	Private study time	Private study time	
14:00 - 15:30	Rotation course: Applied anatomy	Rotation course: Sonography	Rotation course: Internal Medicine 2	Rotation course: Bandage teaching	Closing discussion and closing examination	
15:30 - 16:00	Patient examination	Patient examination	Patient examination	Patient examination	Patient examination	
16:00 - 16:30	Evening rounds	Evening rounds	Evening rounds	Evening rounds	Evening rounds	Assisting in care of inpatients and emergency cases (1 student)
16:30 - 17:30	Break and private study time	Break and private study time	Break and private study time	Break and private study time	Break and private study time	Assisting in care of inpatients and emergency cases (1 student)
17:30 - 20:00	Evening shift and assisting in care of inpatients and emergency cases (2 students)	Evening shift and assisting in care of inpatients and emergency cases (2 students)	Evening shift and assisting in care of inpatients and emergency cases (2 students)	Evening shift and assisting in care of inpatients and emergency cases (2 students)	Evening shift and assisting in care of inpatients and emergency cases (2 students)	Assisting in care of inpatients and emergency cases (1 student)

Week 05: Ruminant and Swine Clinic (WE18)

	Monday	Tuesday		Wednesday			Thursday		Friday		Saturday Sunday
Group	A & B	A	B	A	B		B	A	B	A	
Location	Bovine Clinic	Swine Clinic	Bovine Clinic	Swine Clinic	Bovine Clinic		Swine Clinic	Bovine Clinic	Swine Clinic	Bovine Clinic	
07:30		Patient examination	Patient examination	Patient examination	Patient examination	Trebbin trip	Patient examination	Patient examination	Patient examination	Patient examination	Weekend shift
08:00	Introduction	Rounds	Rounds	Rounds	Rounds		Rounds	Rounds	Rounds	Rounds	
08:30		Exercises: Therapy, diagnoses, anaesthesia, operations		Reproduction exercises			Exercises: Therapy, diagnoses, anaesthesia, operations		Reproduction exercises		
09:00	Clinic tour		Treatments, admission of new patients, operations					Treatments, admission of new patients, operations			
09:30											
10:00	Propaedeutics revision			Treatments, admission of new patients, operations					Treatments, admission of new patients, operations		
10:30											
11:00											
11:30											
12:00											
12:30											

13:00		Reproduction case preparation, exercise preparation	Topic block I: Crash course in hoofed animals: operations (abomasum displacement, anaesthesia, naval operations, stitching course)	Topic block		Reproduction case preparation, exercise preparation	Topic block I: Operations (abomasum displacement, anaesthesia, naval operations, stitching course)	Introduction to Stock Diagnosis I (PC A pool, Pathology)	
13:30	Filling in a health card (Media Lounge)								
14:00	Injection techniques, case distribution and patient examination								
14:30									
15:00									
15:30									
16:00									
	From 16:00 On-call								

Week 06: Ruminant and Swine Clinic (WE18)

	Monday	Tuesday		Wednesday		Thursday	Friday	Saturday Sunday
Group		B	A	A	B			
Location	Bovine and Swine clinic	Swine Clinic	Bovine Clinic	Swine Clinic	Bovine Clinic	Poultry Clinic	Poultry Clinic	
07:30	Stock Trip (Swine Clinic or stock care)	Patient examination	Patient examination	Patient examination	Patient examination	Institute of Poultry Diseases	Institute of Poultry Diseases	Weekend shift
08:00		Rounds	Rounds	Rounds	Rounds			
08:30		Treatments, admission of new patients, operations	Stable climate and care exercises	Stable climate and care exercises				
09:00								
09:30								
10:00			Treatments, admission of new patients, operations	New world camels: Propaedeutics, anatomical characteristics, typical diseases				
10:30								
11:00				Treatments, admission of new patients, operations				
11:30								
12:00			Trebbin trip					
12:30								
13:00		Introduction to Stock Diagnosis II		Topic block				

13:30								
14:00								
14:30	**Topic block**			**Case discussion, closing discussion, evaluation**				
15:00								
15:30								
16:00								
	From 16:00 On-call							

Week 06: Institute of Poultry Diseases (WE15)

Time	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday Sunday
09:00-11:15				Lab Course	Stock Trip	
11:30-13:00				Practical exercises for lab course		
14:00-16:00				Section course	Propaedeutics	

Week 07: Animal Reproduction Clinic (WE19)						
Time	**Monday**	**Tuesday**	**Wednesday**	**Thursday**	**Friday**	**Saturday Sunday**
08:15-09:00	**Rounds**	**Rounds**	**Rounds**	**Rounds**	**Rounds**	On-call
09:00 - 10:00	Patients	Patients	Patients	Patients	Patients	
10:00 - 11:00	Sexual cycle of diff. species	Half of the group on farm visit (puerperal disorders) / other half equine reproduction in Bad Saarow	Andrology and semen collection	Udder exam	Handling frozen semen, artificial insemination	
11:00 - 12:00			semen exam	Milk samples and CMT		
12:00 - 13:00	Lunch break		Lunch break	Lunch break	Lunch break	
13:00 - 14:00	Milking		CAT project	Canine gyn	Pregnancy diagn	
14:00 - 15:00	Vaginal exam		Literature search	Canine gyn	Pregnancy diagn	
15:00-16:00	Rectal exam		Literature search	Felin gyn	Normal parturition	

Week 08: Animal Reproduction Clinic (WE19)						
Time	**Monday**	**Tuesday**	**Wednesday**	**Thursday**	**Friday**	**Saturday/ Sunday**
08:15 - 09:00	**Rounds**	**Rounds**	**Rounds**	**Rounds**	**Rounds**	On-call
09:00- 10:00	Patients	Patients	Patients	Patients	Patients	
10:00- 11:00	Pregnancy small anim	Half of the group on farm visit (puerperal disorders)/ other half equine reproduction in Bad Saarow	Communication	Obstetrics large anim	Neonates large anim	
11:00- 12:00	Parturition small anim		Rabbit repro	Obstetrics large anim	Neonates large anim	
12:00- 13:00	Lunch break		Lunch break	Lunch break	Lunch break	
13:00- 14:00	Obstetrics small anim		Literature evaluation	C-section	Fetotomy	
14:00- 15:00	Obstetrics small anim		Literature evaluation	C-section	Fetotomy	
15:00- 16:00	Neonates small anim		Literature evaluation	C-section		

Week 09: Institute of Veterinary Pathology (WE12)						
Time	**Monday**	**Tuesday**	**Wednesday**	**Thursday**	**Friday**	**Saturday/ Sunday**
08:00 - 09:00	Introduction: Explanation of rotation content and organisation; distribution of paper / seminar topics	Section shift				
09:00 - 12:30	Examination of plastinated preparations; section group discussion					
12:30 - 13:00	Midday discussion					
14:00 - 16:30	Organ report writing	Private study or journal club for assistants	Organ reports discussion	Private study	Private study	

Week 10: Institute of Veterinary Pathology (WE12)						
Time	**Monday**	**Tuesday**	**Wednesday**	**Thursday**	**Friday**	**Saturday/ Sunday**
08:00 - 12:30	Private study; seminar preparation / journal club	Section shift; students present cases in the midday discussion			Independent section shift without assistent, incl examination	
12:30 - 13:00	Midday discussion					
14:00 - 16:30	Private study; section reports discussion	Seminar	Selected cases microscope work	Private study		

Week 11: Institute of Food Safety and Food Hygiene (WE08)						
Time	**Monday**	**Tuesday**	**Wednesday**	**Thursday**	**Friday**	**Saturday/ Sunday**
08:30	Introduction & safety instruction	Summary of main points from previous day	Summary of main points from previous day	8:30 -10:00 Seminar on trichina examinations & carcase and meat inspection and game meat inspection	08:30 Summary of main points from previous day	
09:00	9:00 - 9:40 Slaughter line seminar Cattle	8:50 - 9:30 Slaughter line seminar Swine	8:50 - 10:00 Private study Bacteriological & further examinations		8:50 - 9:50 Bacteriological examination evaluation	
10:00	9:40 - 11:00 Private study Carcase and meat inspection (cattle)	9:30 - 11:00 Private study Carcase and meat inspection (swine)	10:00 - 11:30 Practice work bacteriological examination, pH value and ether-alcohol test	10:00- 11:00 Private Study trichinae, clear trichinae & additional examinations	10:00 - 11:30 Seminar Animal Welfare (incl. videos)	
11:00	Carcase and meat inspection video (30 min)	Carcase and meat inspection video (30 min)		11:00-11:30 Practice work Further examinations (food samples)		
	11:30 - 12:30 Lunch break	11:30 - 12:30 Lunch break	11:30 - 12:30 Lunch break	11:30 - 12:30 Lunch break	11:30 - 12:30 Lunch break	
12:30	12:30 - 16:00 Practice work Carcase and meat inspection (cattle)	12:30 - 15:30 Practice work Carcase and meat inspection (swine)	12:30 - 15:00 Seminar on pathological case examples 1	13:00 - 15:00 Seminar on pathological case examples	12:30 - 14:00 Seminar on case examples Cattle, swine, horses.	
					14:00 Evaluation 14:45 Closing discussion	

Appendix to Table 5.1.1.: Number of specimens used in practical anatomical training

Species	Academic year 2015/16										
	cadavers	material of animal origin	specimens (fixed)	specimens (bones)	others						
					anatomical wax models	plastinates	slice plastinates	corrosion specimens	anatomical models	X-ray-/ CT-images	e-Learning
Cattle	24	0 (37)	700	550	47	57	36	7	15	0	Ungu-Praep
Small ruminants		24 (42)									
Companion animals	92	92	1400	800	83	107	192	19	1	87	Cyber- & Canis-Praep & Cat dissection
Equine	6	6 (45)	750	500	39	60	86	13	10	25	Ungu-Praep
Pigs	11	11 (20)	250	304	67	35	29	0	1	0	Ungu-Praep/ Blackboard Situs II
Poultry & rabbits (incl. rodents)	221	221				24	18	4	0	0	Ungu-Praep/ Blackboard Situs II
Exotic pets	0	0	0	0	0	42	3	0	0	0	
Others (seals, fish, humans)	0	0	0	0	0	0	0	4	32	0	

In () parts of the animal (for example: heads, distal limbs, organs) from slaughterhouses, butchers, etc.

Species	Academic year 2014/15										
	cadavers	material of animal origin	specimens (fixed)	specimens (bones)	others						
					anatomical wax models	plastinates	slice plastinates	corrosion specimens	anatomical models	X-ray-/ CT-images	e-Learning
Cattle	18	1 (16)	700	550	47	57	36	7	15	0	Ungu-Praep
Small ruminants		17 (29)									
Companion animals	104	104	1400	800	83	107	192	19	1	87	Cyber- & Canis-Praep & Cat dissection
Equine	8	8 (34)	750	500	39	60	86	13	10	25	Ungu-Praep
Pigs	16	16 (25)	250	304	67	35	29	0	1	0	Ungu-Praep
Poultry & rabbits (incl. rodents)	223	223				24	18	4	0	0	Ungu-Praep
Exotic pets	0		0	0	0	42	3	0	0	0	
Others (seals, fish, humans)	0		0	0	0	0	0	4	32	0	

In () parts of the animal (for example: heads, distal limbs, organs) from slaughterhouses, butchers, etc.

Species	Academic year 2013/14										
	cadavers	material of animal origin	specimens (fixed)	specimens (bones)	others						
					collection	anatomical wax models	slice plastinates	corrosion specimens	anatomical models	X-ray-/ CT-images	e-Learning
Cattle	20	2 (24)	700	550	47	57	36	7	15	0	Ungu-Praep
Small ruminants		18 (32)									
Companion animals	98	98	1400	800	83	107	192	19	1	87	Cyber- & Canis-Praep & Cat dissection
Equine	6	6(30)	750	500	39	60	86	13	10	25	Ungu-Praep
Pigs	16	16(25)	250	304	67	35	29	0	1	0	Ungu-Praep
Poultry & rabbits (incl. rodents)	220	220				24	18	4	0	0	Ungu-Praep
Exotic pets			0	0	0	42	3	0	0	0	
Others (seals, fish, humans)			0	0	0	0	0	4	32	0	

In () parts of the animal (for example: heads, distal limbs, organs) from slaughterhouses, butchers, etc.

Appendix to 6.1.1.: Details on library structure, funding and resources

Staff (FTE) and qualifications		
Position	**Qualifications**	**FTE**
Director of the Library	Doctorate in Veterinary Medicine; specialist veterinarian for meat hygiene; Master of Arts in Library and Information Science (MA LIS)	1
Lending desk / stacks	Specialist in media and information services	2
	Assistant	0.5
Journals division	Specialist in media and information services	1
Monographs division	Specialist in media and information services; Bachelor in Library and Information Science, specialising in library management	1
Loose-leaf, old stock	Librarian (Diploma)	0.5
Library IT division	Computer scientist with Bachelor degree	1
Student assistants	3	0.85
Total (FTE)		**7.85**

Opening hours and days	
Mo-Fr	8 am to 6 pm
Sat-Sun	Closed

Annual budget /Area of expenditure	Euro
Media	200,000
Budget	10,000

Facility	
Location on the campus	Centre of the Düppel Campus (Building 6)
Total area	Approx. 3000 m^2
Number of rooms	4 separate teaching rooms, 1 seminar room, 1 student common room, 1 parent-child room
Number of seats	90 individual workings spaces
Number of computers	18, 10 of which in the PC pool
Number of connection points for portable PCs	Laptops and mobile devices have access to Eduroam. There is no shortage of power supply points
Available bibliographical software	Endnote (free download via Zedatportal) Citavi (free download via Zedatportal)
Available bibliographical databases	CAB (free via Eduroam and vpn) FSTA (free via Eduroam and vpn) Web of Science (free via Eduroam and vpn) Scopus (free via Eduroam and vpn) Volltextzugriff

Number of veterinary books and periodicals (Veterinary Library)	
Monographs, journals / periodicals, University publications	165,000
– Of which are university publications	44,146
– Of which are journals / periodicals	3,076

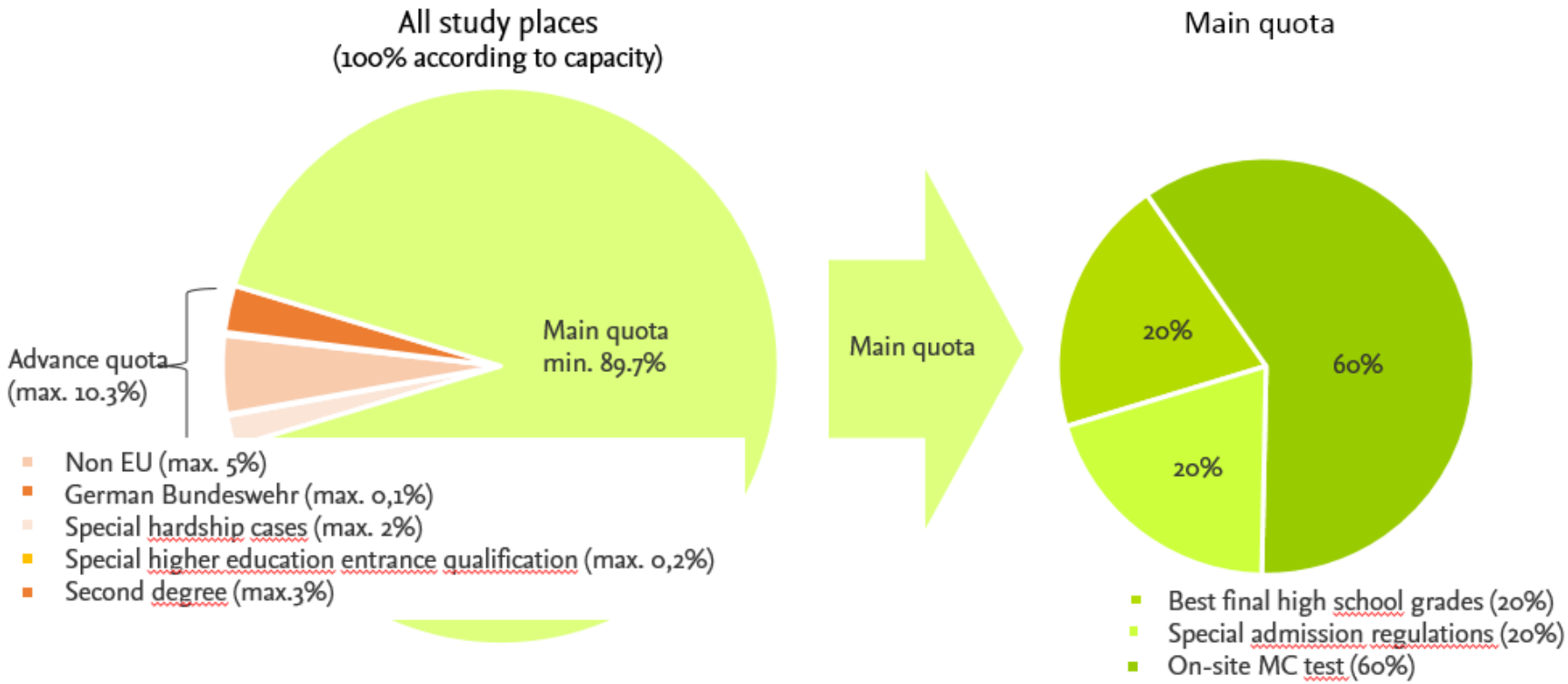
Number of veterinary e-books and e-periodicals (Veterinary Library)[1]	
The Faculty of Veterinary Medicine	171

Number of other (e)books and (e)periodicals[2]	
Media type	**Title**
Monographs (print)	Approx. 4,000,000
E-book collections	74
E-books (single titles)	Approx. 620,000
Journals (print, current reference)	Approx. 10,000
Journals (online, current reference)	Approx. 60,000 (approx. 14,000 in life sciences)
Databases	1,600

[1] Only managed by the Veterinary Library and / or funded licenses

[2] The figures refer to the total stock of all libraries of Freie Universität Berlin. All libraries in the library system are available for members of university to use.

Appendix to 7.1.2.: Breakdown of Student Admissions in Veterinary Medicine



Appendix to 7.1.6.: Services available to students at the Establishment

List of services available at the Faculty and University

- First semester week (orientation)
- Academic advising (from the Study Office / Vice Dean for Study Affairs)
- Student subject advice (from students for students)
- Subject, Module and EPT Coordinators (contacts for individual subjects, courses, and internships)
- Gender equality officer / Equal opportunities advocate
- Animal welfare official
- Liaison teacher for students
- Official responsible for good scientific practice
- Chairperson of the Examining Board
- Veterinary medical student organisation Berlin (VetMed-FSI)
- Career planning & development
- Federal Education and Training Assistance Act officer for advice concerning financial support
- Progress Test for veterinary medicine (interdisciplinary knowledge test for students)
- Peer mentoring program as part of the SUPPORT project of Freie Universität

Details on the described services:

Services available at the Faculty of Veterinary Medicine

Orientation week
At the start of each academic year, the Establisment in close collaboration with the Veterinary Medical Student Organisation (VetMed-FSI) offers a several-day orientation and information event for incoming first year students. In presentations, seminars, guided tours and through handouts the new students receive relevant information regarding the Faculty and course of study. As part of the SUPPORT mentoring program, students in higher semesters act as mentors for small groups of incoming students during the first year of study.

Academic advising
As mandated by the Berlin Law on Higher Education (BerlHG) students receive academic advising through the study office and the Vice Dean for Study Affairs.

Student subject advising
The VetMed-FSI provides peer academic and subject advising to students that need guidance. For this, an contact person is nominated each year.

Subject, module and EPT coordinators
For questions related to specific subjects, courses, modules or EPT, elected coordinators are available to the students.

Gender equality officer / Equal opportunities advocate
All gender-related issues are reported to the Gender equality officer who is also in charge of all students´ concerns, both among students and between students and faculty / staff. There are separate Gender equality officers at the Establishment and at Freie Universität Berlin, and either one may be contacted by our students.

Animal welfare officer
All animal welfare questions and concerns such as potential welfare issues experienced during the EPT can be discussed with the Animal welfare officer of the Establishment.

Liaison teacher for students
Students with personal problems or conflicts with other lecturers can contact the liaison teacher and discuss their issues with them in confidence. The liaison teacher provides advice and periodically reports to the Dean's Office without disclosing the students identities.

Official responsible for good scientific practice
There are two professorial representatives to be contacted by undergraduate students, graduate students and staff for any concern related to good scientific practice. Both are named on our homepage (http://www.vetmed.fu-berlin.de/forschung/sicherung_guter_wiss_praxis/index.html). They confer with the University Representative for Good Scientific Practice and the University legal office when needed. All representatives are trained regularly, keep minutes on each reported issue and have to comply with complex national and university guidelines.

Chairs of the examination boards
The chairs of the preclinical and clinical examination boards serve as contact points for all issues related to accepting courses and EPT taken abroad, the State examination process and also special study plans for students that have to interrupt their course of study for personal reasons including pregnancy and maternity leave.

Veterinary medical student organisation (VetMed-FSI)
The organisation currently has approx. 60 active student members from all semesters. The FSI represent the whole student body within the Establishment and has the following responsibilities:

- representing student issues and interests at the Establishment and the University.
- Nomination of student representatives for the Faculty Council, the education and the continued eduction commission and ad-hoc committees with student participation.
- Networking among students.
- Organise or support Faculty events such as the Open Campus day, the Orientation week for incoming students, a summer and a Christmas party etc.
- Nomination of representatives in the Federal Veterinary Medical Student Association (bvvd) and the International Veterinary Students' Association (IVSA).

Career planning & development
- On several occasions active veterinarians are invited to participate in the lectures and to present their individual fields. Examples are Veterinary Profession & Legislation, Ethology and Animal Welfare.
- Together with external partners (research institutions, industry and professional organisations) several events are organised annually such as „Vet's up" (presentation of different working areas in veterinary medicine), „Rin.Da!" (large animal practice is becoming female), „The career path into veterinary practice" (economic and legal issues).
- Students have a choice of several electives related to scientific work and can attend journal clubs and other activities that introduce them to a career in research.
- Within the FU SUPPORT mentoring programme, an annual career day is implemented.

Federal education and training assistance act officer
Students are supported in applying for Federal study loans (BAföG) by two official representatives at the Faculty.

Progress test for veterinary medicine (PPT)[3]
The PTT is an interdisciplinary learning outcome assay with 136 MC questions. The PPT was developed within the Compentence Center for E-Learning, Didactics and Educational Research in Veterinary Medicine (KELDAT) for the German, Austrian and Swiss veterinary schools and in 2013 run for the first time. Test content is referring to day one competencies as defined by the European Association of Establishments for Veterinary Education (EAEVE). The test questions are contributed by teaching staff of all participating veterinary institutions and subject to a multistage review process. The same set of questions is being presented to all students. Besides a choice of 4 answers there is an option "I do not know" to encourage students to honestly appreciate their knowledge. The objective is to provide students with individual feedback to their level of acquired knowledge and understanding (a) within the course of study and (b) related to other students in the same semester (see Figure 1).

The Dean's Office receives a summary of the results over all students of the Establishment that participated in the test.

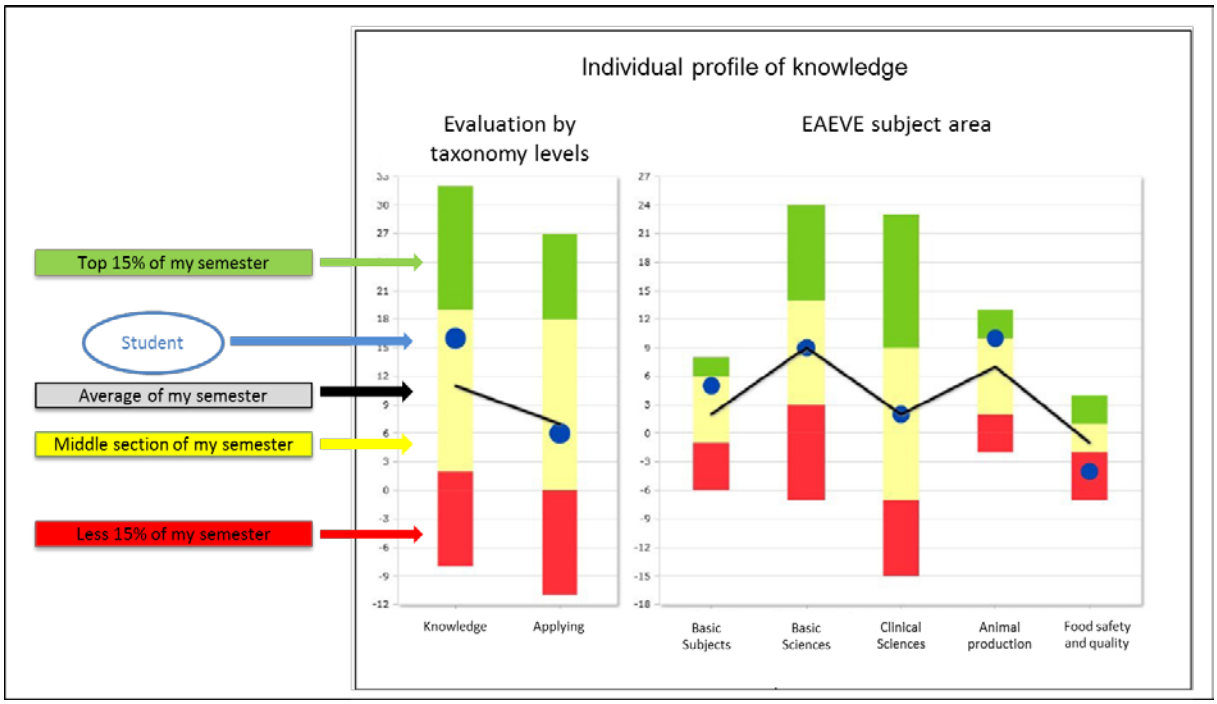
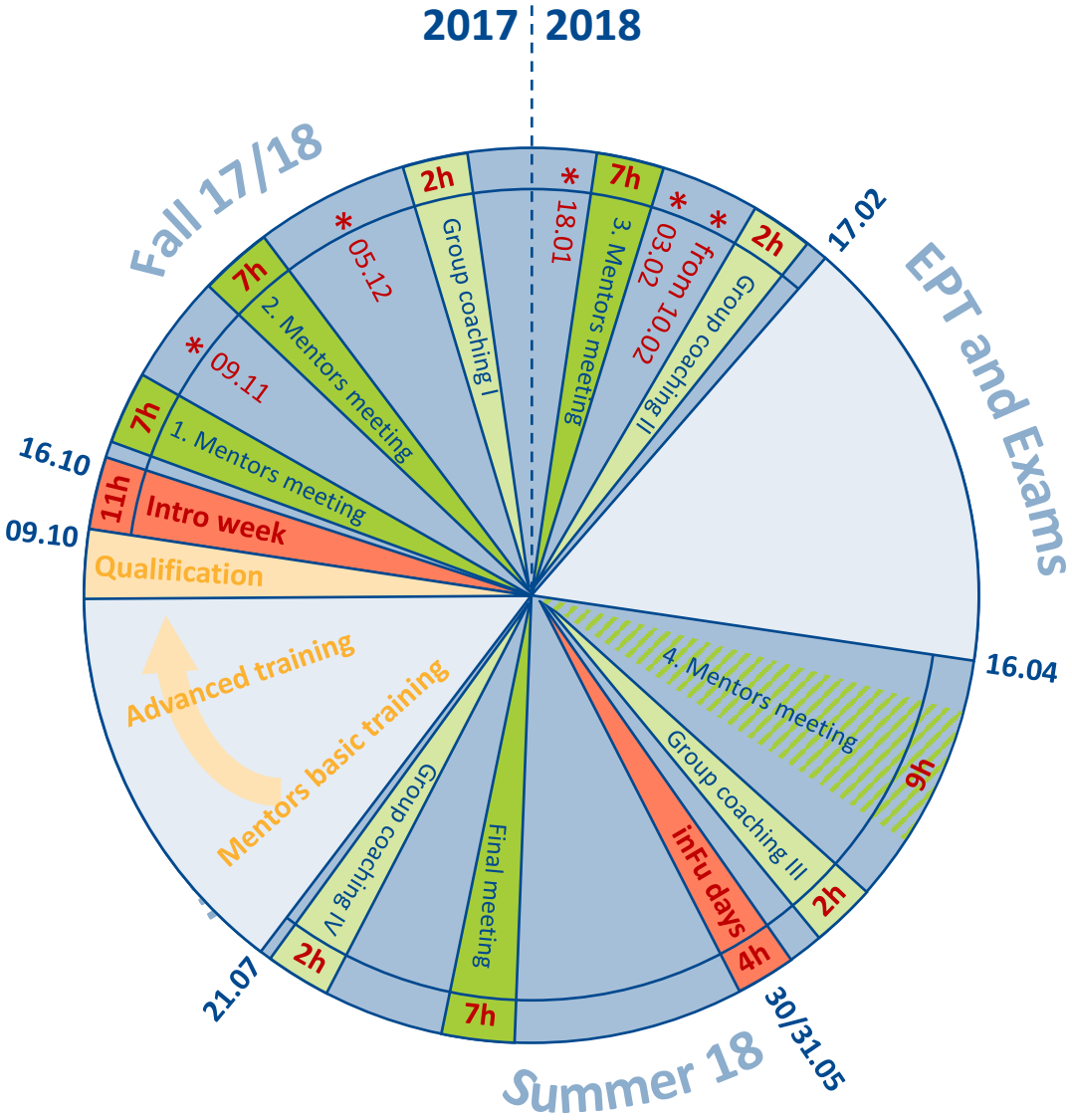


Figure 1 Graphical feedback of PPT results to individual students

[3] http://www.vetmed.fu-berlin.de/einrichtungen/zentrale/dekanat/keldat/ptt/index.html
http://www.bundestieraerztekammer.de/downloads/dtbl/2014/artikel/DTBl_08_2014_PTT.pdf

Peer mentoring programme (SUPPORT) of Freie Universität Berlin

The Establishment is part of the second phase of a mentoring project (SUPPORT) coordinated by the Freie Universität. Within this project, a coordinator (0.5 FTE, centrally funded) and 12-14 student peers (recruited from 2nd and 3rd year and specifically trained – see figure 2) organize a mentoring programme for incoming students that consists of small group activities related to study expectations, working and learning strategies, study organization and time management and related subjects. In addition to the small group peer-to-peer mentoring in first year, specific one-day workshops with internal and external lecturers are organized by the mentoring coordinator for 5th semester student (transition into the clinical phase, with focus on communication skills) and 7th year students (exit phase, focus on working in the veterinary profession).



*Official exams / tests for first year students

Figure 2 Schedule for the Student Mentees in the SUPPORT Mentoring Programme for the academic year 2017/18

Skills Net
In 2016, the Skills Net project was formally established. A working group consisting of interested teachers from various institutions since then meets regularly in Skills Café rounds to coordinate the progress. The group first developed a strategy based on offering hands on training in clinical, scientific and communication skills and compiled a list of already existing animal and other models used for skill development and self-training. In a second phase, gaps in skill-based learning were identified, and a list of models / learning stations to be established was drafted. This list was discussed in the educational committee and forwarded to the Deans office with a recommendation of funding. The Establishment agreed to fund the project with an amount of 100,000 EUR for a starting period of two years. Since then, several learning stations have been developed and integrated in the learning processes of students, mainly those in 2nd to 5th year. More stations are currently under development. The project coordinator reports regularly to the associate dean for education / educational committee, and acceptance is assessed through student evaluations.

Services for students provided by Freie Universität Berlin

Student Body Council (Allgemeiner Studentenausschuß - AStA) of Freie Universität Berlin
The AStA - in addition to counselling on social/financial difficulties – offers special advice for disabled students and support for foreign students, and answers questions concerning BAföG (Federal Education Promoting Act; study loans granted to students depending on the family income).

Info-Service "Studium" of Freie Universität Berlin
The Registration Office and the Admissions Office function as welcome and central information service. Students and prospective students with questions may contact the information service "Studium" at Freie Universität Berlin by phone, email, or in person.

The **International Student Mobility-Welcome Service** counsels students concerning opportunities for study abroad (including scholarships), informs them about partner universities, and also advises foreign students enrolled at Freie Universität Berlin. The partner institution database provides information regarding Erasmus exchange student opportunities[4].
The mobility services available at the Faculty have been extended substantially in recent years:

- Establishment of an ECTS Brochure with details regarding the course of study and credits in both German and English.
- Website with information on student mobility and Erasmus[5].
- Annual information event „Going abroad - just do it" for outgoing students and information days for incoming (Erasmus) students.
- Contact point (coordinator) for international collaborations and student exchange programmes at the Faculty.
- Brochure and process documentation related to issue and the organisation of international study (exchange) programs is provided on the Faculty website.

[4] https://fu-berlin.moveonnet.eu/moveonline/exchanges/search.php?_error=NoCookie
[5] http://www.vetmed.fu-berlin.de/studium/studierendenmobilitaet/index.html

Student Union of the University

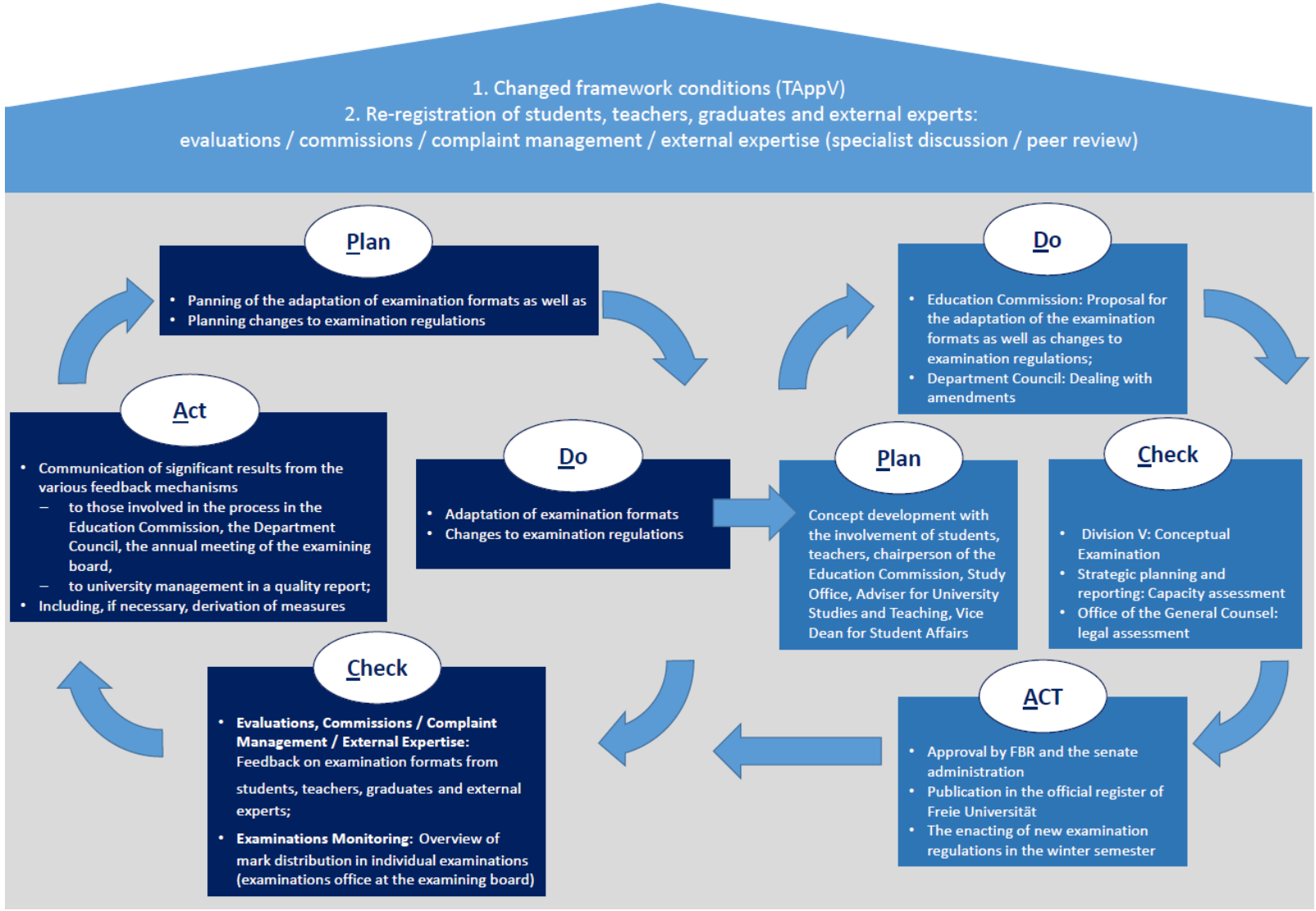
Counselling and advisory services offered by the Studentenwerk Berlin (Student Union)

- Advice and help with regard to BaFöG (Federal Education Promoting Act).
- Advice and support for disabled and chronically ill students.
- General counsel on all financial/social questions regarding study, e.g., finances; help regarding accommodation, public transport within and outside of the university as well as personal problems and crisis situations.
- Psychotherapeutical counselling for students: The Student Union Berlin offers such counselling to all students in such a need. Counselling and therapy are provided free of charge.
- Support and counsel of pregnant women.

Dual Career & Family Service

Freie Universität has been certified by audit familiengerechte hochschule since June 2007. In addition, the university signed the "Familie in der Hochschule" charter in June 2015. By embracing family-friendly personnel policies and a family-friendly university structure, Freie Universität helps its members to better balance working life, studies, and academic qualification processes with family responsibilities. The Dual Career & Family Service also offers all members of the Freie Universität community information and confidential advising services on all questions relating to better balancing work, studies, and family life.

Appendix to 8.1.5.: PDCA cycle adaptation of examination formats / (further) development of examination regulations



Appendix to Chapter 9: Overview of the cooperative members of the Faculty of Veterinary Medicine and at Freie Universität Berlin

Scientific Institutions	Name	Postion	Title	Veterinarian	Teaching responsibility in hrs / week
2	REINHOLD, PETRA	Extraordinary professorship	Prof. Dr. Dr.	1	1
3	SCHÖN JENNIFER	Private lecturer	PD Dr. med. vet.	1	1
4	LOH, GUNNAR	Private lecturer	PD Dr. med. vet.	1	1
5	BLOME, SANDRA	Private lecturer	PD Dr. med. vet.	1	1
5	PAULI, GEORG	Private lecturer	PD Dr. rer. nat.		1
6	HELLWEG, CHRISTINE	Private lecturer	PD Dr. med. vet.	1	1
6	HOFFMANN, ANDREAS	Private lecturer	PD Dr.		1
7	BEUTIN, LOTHAR	Private lecturer	PD Dr. rer. nat.		1
7	GENERSCH, ELKE	Extraordinary professorship	PD Dr. rer. nat.		1
7	LEENDERTZ, FABIAN	Private lecturer	PD Dr. med. vet.	1	1
8	STENZEL, WOLF RUDIGER	Extraordinary professorship	PD Dr. med. vet.	1	1
10	ZUCKER, BERT ANDREE	Private lecturer	PD Dr. med. vet.	1	1
11	GROSSE SIESTRUP, CHRISTIAN	Private lecturer	PD Dr. med. vet.	1	1
12	WALTER, JAKOB	Private lecturer	PD Dr. med. vet.	1	1
13	AHMED, JABBAR SABIR	Extraordinary professorship	Prof. Dr.	1	1
13	NOCKLER, KARSTEN	Extraordinary professorship	Prof. Dr.	1	1
13	WERNER, GERD	Private lecturer	PD Dr.		1
14	HAUFF, PETER	Private lecturer	PD Dr. med. vet.	1	1
14	REX, ANDRE	Private lecturer	PD Dr. med. vet.	1	1
14	SCHERKL, RUDOLF	Private lecturer	PD Dr. med. vet.	1	1
14	BERT, BETTINA	Private lecturer	PD Dr. med. vet.	1	1

15	HAUCK, RUDIGER	Private lecturer	PD Dr. med. vet.	1	1
15	METHNER, ULRICH	Private lecturer	PD Dr. med. vet.	1	1
17	CARSTANJEN, BIANCA	Private lecturer	PD Dr. med. vet.	1	1
19	TENHAGEN, BERND ALOIS	Private lecturer	PD Dr. med. vet.	1	1
20	GERLACH, KLAUS	Private lecturer	PD Dr. med. vet.	1	1
20	GÖBEL, THOMAS	Private lecturer	PD Dr. med. vet.	1	1
20	NICKEL, RAFAEL	Adjunct professor	PD Dr. med. vet.	1	1
20	SKRODZKI, MARIANNE	Private lecturer	PD Dr. med. vet.	1	1
20	STOHR, KLAUS	Adjunct professor	PD Dr. med. vet.	1	1
F*	BRUMME, MARTIN FRITZ	Private lecturer	PD Dr. med. vet.	1	1
F*	CONRATHS, FRANZ JOSEF	Extraordinary professorship	PD Dr. med. vet.	1	1
F*	HENSEL, ANDREAS	Adjunct professor	Prof. Dr.	1	1
F*	WIELER, LOTHAR HEINZ	Adjunct professor	Prof. Dr.	1	1

* F = Faculty

Appendix to 9.1.1.: Teaching qualification courses at the Faculty of Veterinary Medicine

Basic Course in Teaching at the Faculty of Veterinary Medicine

The following overview shows the contents of the Basic Course in Teaching. This course takes place twice a year at the Faculty. Participation is mandatory for all teachers (except for those writing habilitations and those who already have a teaching qualification certificate).

Teaching Block	E-learning Block	Examinations Block
Lecture • Material reduction • Presentation • Activating methods for lectures **Seminar** • Methods for group work **Pract. Exercise** • "Triggering learning" • Simulations (SkillsNet) • Feedback methods	• What is E-learning? • Blended learning • Legal fundamentals • Inverted classroom • E-lectures with additional material • Videos • Case-based learning (digital) • Quiz	• Legal fundamentals • Monitoring of examination results • What skills are examined in which examination format? • Oral examinations • Practical examinations • OSCEs • MC examinations • Feedback

Overview 5 Contents of the Basic Course in Teaching at the Faculty of Veterinary Medicine

SUPPORT for Teaching

Teaching professionally at Freie Universität Berlin

Teaching professionally is more than just technical competence. Increasing demands on teaching, as well as a new concept of knowledge acquisition and knowledge transfer necessitate a sound university teaching qualification and better helpful networking for teaching topics.

As part of the SUPPORT project, a university teaching qualification program has been developed, which is directed towards teachers at Freie Universität Berlin.

The range of services is based on the latest findings in teaching-learning research as well as in university research and offers targeted transfer of quality characteristics in academic teaching. It exists in a modular format for teaching qualifications. In addition the program is based on the guidelines of the The German Association for Educational and Academic Staff Development in Higher Education and contributes to international shifts in teaching-learning culture, the "Shift from Teaching to Learning".

Certificate Program

At the core of SUPPORT's range of services for teaching is the modular certificate program, which is especially aimed at young academics with little or no teaching experience. The Certificate program is modular and allows for flexible and individual completion of the separate components.

The successful completion of all modules leads to the acquisition of the Higher Education Teaching Certificate of Freie Universität Berlin. The full certificate program consists of a 5 day fundamental module and a total of 8 days of an advanced module, which are chosen from a range of 1-2-day workshops. At the end of the certificate course there is a semester-long teaching project. In addition, the participants also prepare a teaching portfolio. The certificate course is completed within about 3-5 semesters. The acquisition of competences, which concern teaching, is a long process which takes time. We therefore recommend that the modules are completed in at least three consecutive semesters, so that the acquired knowledge can be strengthened and habitual behaviour developed.

Module	Time Scale
Fundamentals Module	5 days
Advanced Module	8 days
Teaching Project	Individual, running alongside semester
Teaching Portfolio	Individual, across the entire program

Overview 6 Structure of certificate program

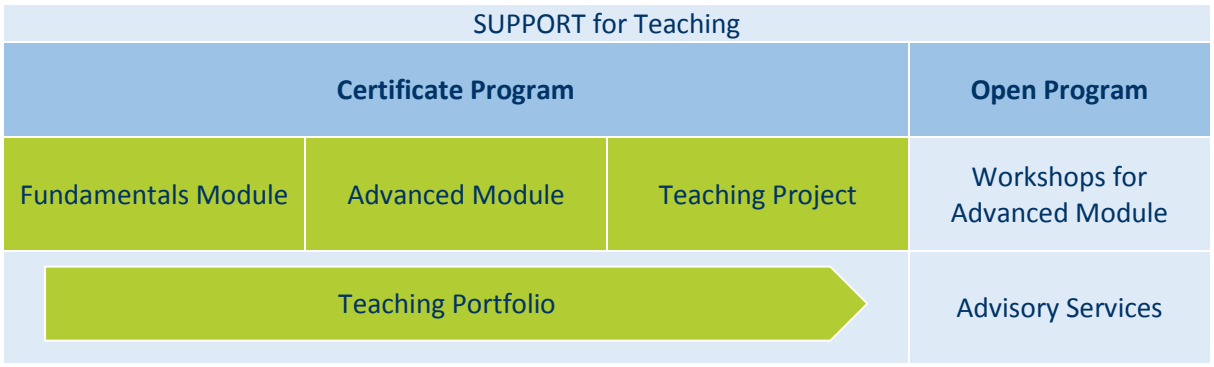
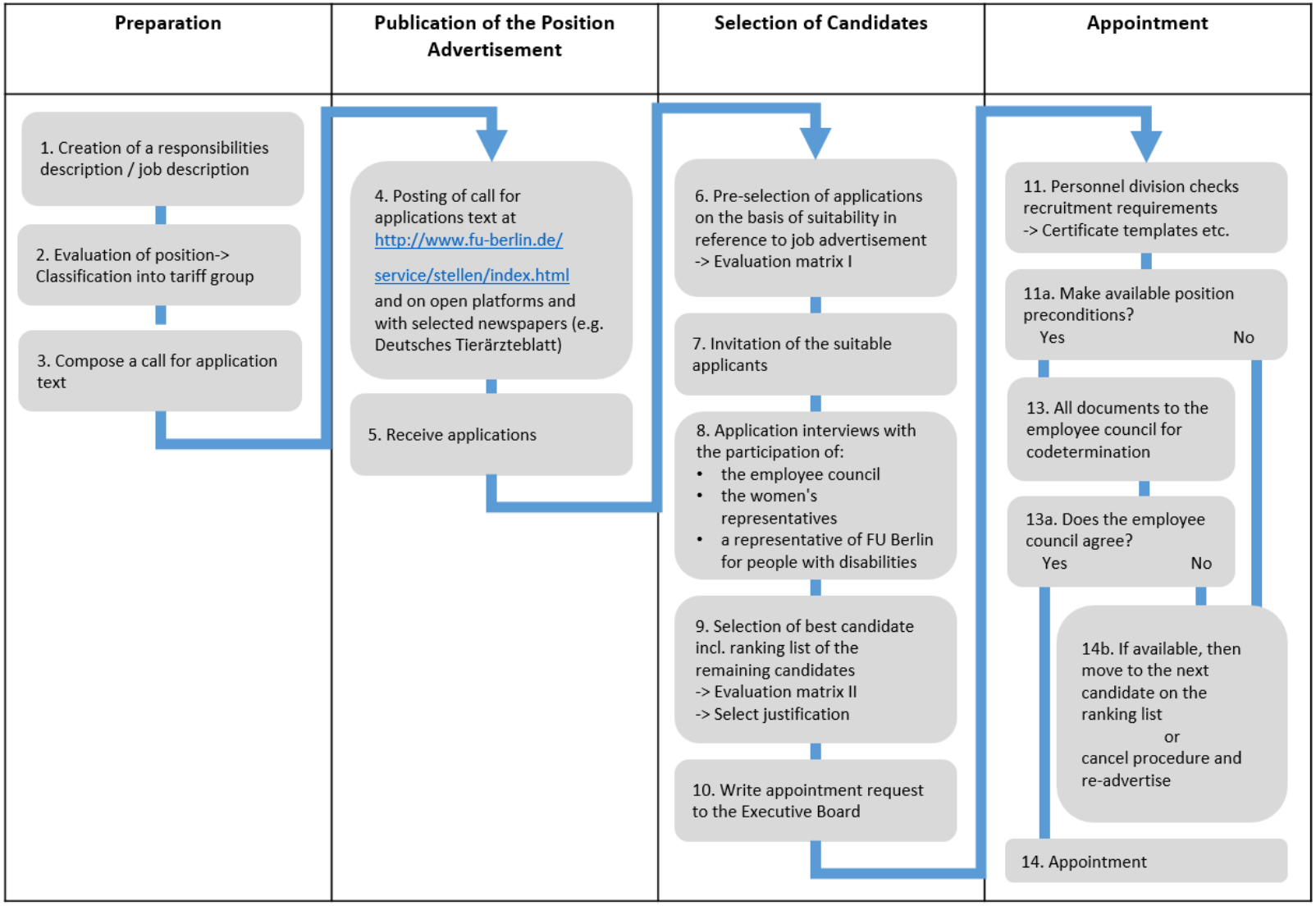


Figure 3 Schematic representation of the modular structure of the certificate program

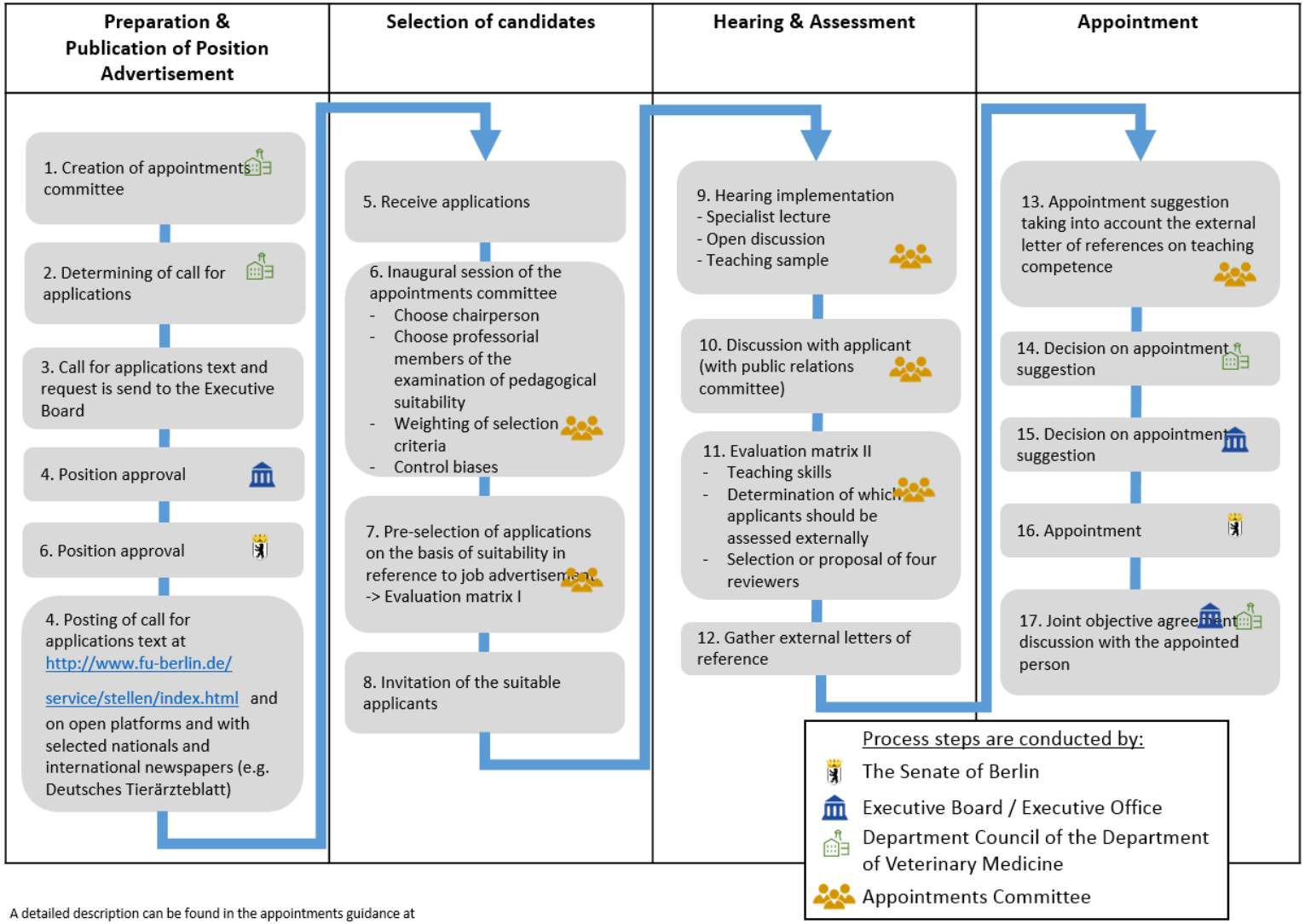
Module	Contents
Fundamentals Module	• Quality characteristics of academic teaching • Role and self-conception • Selection and preparation of learning materials • Planning and organisation of courses • Communicative skills and presentation • Procedures and methods for learner-oriented design of teaching-learning arrangements • Helpful advising and helpful shadowing
Advanced Module	• Presenting and moderating courses • Usefully integrating reviewing and presentations in seminars • Activating methods for large events • Advising and supporting students • Performance assessment and performance feedback • E-learning and blended learning • Research-based teaching and learning • Gender in teaching
Teaching Project	• Individual development, implementation and reflection on innovative teaching intentions • Accompanied by: Helpful advising and helpful shadowing
Teaching Portfolio	• Written reflection of professional activity within higher education teaching

Overview 7 Contents of the Modules within the Certificate Program

Appendix to 9.1.2.a: Schematic Representation of the Recruitment Procedure



Appendix to 9.1.2.b: Schematic Representation of the Appointment Procedure



A detailed description can be found in the appointments guidance at
http://www.fu-berlin.de/service/zuvdocs/weitere-fu/berufungsleitfaden.pdf - on the composition of the appointments committee see Appendix to 1.1.5.: Profiles of the Commissions and Representatives.

Appendix to 9.1.2.c: Specialist Personnel Development Programs for Academic Staff Members of Freie Universität (selection)

See also the teaching certificate program SUPPORT for Teaching.
Detailed information on the SUPPORT program can be found on page 256.

Name	Dahlem Leadership Academy (DLA)
Target Group	Academic managers from at least the W2 level
Responsible Party or Parties	Division of Social, Organizational and Economic Psychology
Length of Program	Course program Individual courses can be taken
Short Description	A workshop program for professors of Freie Universität Berlin, which specifically encourages their leadership skills and makes psychological guidance useful in a university environment.
Further Information	http://www.fu-berlin.de/sites/dla/about-dla/index.html

Name	Dahlem Research Mentoring (DREAM)
Target Group	Female junior researchers (members of the Dahlem Research School)
Responsible Party or Parties	Dahlem Research School
Length of Program	1 year
Short Description	DREAM is a mentoring program specifically for female junior researchers. It aims to support the academic potential of talented women. Regular personal meetings of mentees and mentors form the central component of the program. They are embedded in a comprehensive framework program: • Kick-off event • Mentoring workshop for mentees • Mentoring workshop for mentors • Accompanying seminars for mentees • Half way point reflection • Networks • Closing
Further Information	http://www.fu-berlin.de/sites/promovieren/drs/qualification/mentoring/index.html

Name	DRS Pro Transfer
Target Group	Academic staff members of Freie Universität
Responsible Party or Parties	Dahlem Research School in cooperation with *Profund Innovation*
Length of Program	1 semester
Short Description	The founding principle: from research to market DRS Pro Transfer operates purposefully on the ingenious idea that research can be successfully transferred to the market.
Further Information	http://www.fu-berlin.de/sites/promovieren/drs/qualification/pro-transfer/index.html

Name	DRS Pro Business
Target Group	Advanced doctoral students, who are looking for occupation in the free economy or desire to become self-employed.
Responsible Party or Parties	Dahlem Research School in cooperation with Profund Innovation
Length of Program	1 semester
Short Description	DRS Pro Business prepares specifically for entry into professional fields outside research and science. The program provides basic business skills and supports the development of key competences for responsible for responsible occupation in the free economy and for those wanting to start businesses.
Further Information	http://www.fu-berlin.de/sites/promovieren/drs/qualification/pro-business/index.html

Name	Researcher Development Program
Target Group	Range of qualifications on offer for junior scholars with doctorates who wish to become full professors
Responsible Party or Parties	Dahlem Research School in cooperation with Profund Innovation
Length of Program	Extensive range of courses
Short Description	Freie Universität Berlin systematically supports junior scholars with a career path model in different phases of their professional development. The Dahlem Research School (DRS) uses the Researcher Development Program for giving qualifications to post-doctoral junior academics, so as to support as best as possible junior academics in their challenging life and career phases on the path to professorship. The objectives of the qualification program are: 1. Strategic career development 2. Professionalisation 3. Networking
Further Information	http://www.fu-berlin.de/sites/promovieren/drs/rdp/index.htmll

Appendix to 9.1.4.: Advising Services for Staff Members at Freie Universität Berlin

Central Advising Services, Service Facilities for Employees of Freie Universität

Occupational Health Advice Service	The Occupation Health Advice Service is tasked with the following: • Advising on all questions pertaining to medical work protection • Inspecting working areas • Occupational medical examinations • Preventing and analysing work-related illnesses, • Organising and implementing occupational medical vaccination programs • Organising first aid • Work-related medical training and information http://www.fu-berlin.de/sites/fundament-gesundheit/anlaufstellen/betriebsarzt/index.html
Work Safety Service	The Work Safety Service (DAS) acts in an advisory capacity as the university office for occupational health and safety for employees of Freie Universität Berlin. The DAS and the Occupational Health Advice Service work with interested parties, welfare services, officials responsible for safety, first-aiders and miscellaneous employees. Their tasks include the following: • Advising responsible supervisors and employers on occupational health and safety • Advising on the planning, designing and maintaining of operating systems • Advising on the acquisition of technical resources and the introduction of work procedures and working materials, the selection and testing of body protection, the design of workplaces, work processes, working environments and especially on questions pertaining to ergonomics, assessment of working conditions • Inspection of workplaces, notification of observed defects to the persons responsible and proposing means to eliminate shortcomings and working towards their implementation http://www.fu-berlin.de/sites/baas/index.html
Dual Career & Family Service (Familienbüro)	The Dual Career & Family Service is available as a central contact and coordination centre for questions relating to families. The Family Service unit provides a large range of services, such as emergency childcare, holiday childcare, continuing education etc. Advising services include: • Working with child • Studying with child • Care • Dual career http://www.fu-berlin.de/sites/dcfam-service/index.html
Operational Management Integration (BAM)	Freie Universität offers operational management integration (BEM) to all employees with repeated or lasting illnesses which persist for more than six weeks in a year. This is intended to overcome incapacity to work, prevent further bouts of illness and to safeguard jobs. As part of the control circuit, FUndament Gesundheit, a procedure suitable for employees of Freie Universität Berlin has been developed. As part of a voluntary discussion, the reasons for being unfit for work or unfit for service

	should be discussed. These can occur in the professional as well in the private environment. The aim is to find solutions and to agree upon measures, which should help employees so that they can be guided out of their illnesses situations. http://www.fu-berlin.de/sites/fundament-gesundheit/angebote/bem/index.html
Occupational Health Management / FUndament Gesundheit	On objective of occupational health promotion is to make working conditions as beneficial to health as possible as well as to establish measures for improving the work environment and the motivation of employees at Freie Universität Berlin. Fields of activity: • Age-appropriate working and learning • Depression • Heath reports • Health day • Peer advising • Annual talks http://www.fu-berlin.de/sites/fundament-gesundheit/Was_ist_BGM/index.html
Peer Addiction Advice Service	Support is provided by two peer advisers to concerned and affected employees of Freie Universität. Trained colleagues attempt to find solutions for affected persons in personal discussions. On request, they can arrange contact with support facilities. The range of services is available for all employees of Freie Universität, who themselves have a problem with addiction, or are confronted with addiction problems in their family or peer group. http://www.fu-berlin.de/sites/fundament-gesundheit/anlaufstellen/sucht/index.html

Interest Groups at Freie Universität

Employee Council: Dahlem	Employee representation of all employees at the department, with the exception of student employees. The Employee Council ensure compliance with important legislation relevant to employees. This includes, in particular, collective wage bargaining agreements, but also service agreements and laws. It should also ensure that integration and support in offices - particularly of persons with disabilities, women and foreigners - occur and that they are not put at a disadvantage. In addition, the Employee Council has a right of codetermination in personnel matters such as appointments, terminations, upgrading and downgrading. The Employee Council is elected every four years. http://www.fu-berlin.de/sites/prdahlem/index.html
Employee Council for Student Employees	The function and role of the Employee Council for Student Employees is to protect and enforce the rights of all student employees and to expand them within their remit. The Council is involved in calls for applications and recruitment, based on collaboration and codetermination rights. The Employee Council for Student Employees of Freie Universität Berlin is elected for a one year term of office. http://www.fu-berlin.de/sites/prstudb/index.html
Staff Council for the Entire of Freie Universität Berlin	The Staff Council for the Entire of Freie Universität Berlin represents, in coordination with local staff councils, all employees of Freie Universität Berlin, including student employees. The Staff Council is responsible for all matters which pertain to all employees or more than one office. This is done in accordance with the Berlin employee representative laws (PersVG Berlin § 54). Interdepartmental affairs include e.g. IT procedures, which relate to at least two offices, occupational health and safety and continuing education for employees. The Staff Council is elected for a four year term of office, as are the local staff councils. http://www.fu-berlin.de/sites/gpr/index.html
Representation Agency for Persons with Disabilities	The Representation Agency for Persons with Disabilities promotes the integration of persons with disabilities into offices, it represents their interests in the workplace and provides them with advice and assistance. It ensures, for example, that legislation for the assistance of persons with disabilities is implemented. It proposes measures which serve those with disabilities, in particular those of a preventive nature, at the appropriate points. It receives suggestions and complaints from those with disabilities and works towards negotiation with the employer, if it appears justified. Elections for the Representation Service for Persons with Disabilities takes place every 4 years. http://www.fu-berlin.de/sites/sbv/index.html
Youth and Trainee Council	The Youth and Trainee Council (JAV) of Freie Universität Berlin is tasked with applying existing laws and agreements relating to managing training. They contribute to changes which concern training

	and have a right of codetermination in recruiting processes, ongoing employment and termination. The election takes place every two years. http://www.fu-berlin.de/sites/jav/index.html

Service Institutions at Freie Universität

Center for Continuing Education	The Center for Continuing Education is a central facilities unit of Freie Universität Berlin. The education mission of the center - in the sence of lifelong learning - is directed at people in all phases of life that would like to continue their academic or professional training. The range of services covers a broad spectrum of formats for professional and cultural training. The Center offers over 250 different courses each year including job-related continued education, IT courses, language courses, health and courses for personnel development. http://www.fu-berlin.de/sites/weiterbildung/index.html
University Sports Center	The University Sports Center of Freie Universität Berlin offers, in addition to a very wide range of sports, workshops and sports trips, a differentiated program as part of FUndament Gesundheit, as well as service and advising facilities for university members. Each semester the University Sports Center organises a comprehensive and high quality range of courses in more than 120 sports and with up to 800 individual events each semester. http://www.hochschulsport.fu-berlin.de/

Appendix to 10.1.: Details of the Faculty postgraduate programmes

Ph.D.-Programme "Biomedical Sciences"
Since 2008, approximately 15 to 20 % of all veterinary graduates with interest in an academic career join a formal Ph.D.-Programme "Biomedical Sciences" which is one 27 graduate schools withing the Dahlem Research School (DRS) of Freie Universität Berlin. The DRS and all of its subprogrammes are governed by the accreditation and quality control mechanisms of Freie Universität Berlin. The DRS Biomedical Sciences Programme is structured and organized similar to most higher US Ph.D.-programmes, including a 3-year curriculum, a mentoring group of 3 professors per student that meets the graduate student in 6 months periods, a curriculum of 180 ECTS credit points and the requirement of two first-authorship original research publications in international, peer reviewed scientific journals. Focused training occurs for each participant in more general aspects (research propedeutics, good scientific practice, statistics, how to write and publish scientific papers etc.) during a two weeks spring schools which takes place annually in March.
Virtually all graduate students are officially enrolled in one of the externally funded research networks (GRK 1673, GRK 2046) at the Faculty and receive an appropriate salary through that funding line. In general, the tutor is responsible for an adequate salary of each graduate student enrolled in the DRS. Quality measures such as frequent assessments whether all requirements of the curriculum are met, student statistics, exchange with other programmes, analysis of drop outs etc. are organized by the coordinating office of the programme under the guidance of the DRS. Currently, there are 137 graduate students (58% female) from 28 countries enroled.

In addition to the "Biomedical Sciences" DRS programme, several other graduate schools and structured graduate education programmes exist in the Berlin and Potsdam region, e.g., the ZIBI Graduate School for Infection Biology and Immunity of the Humboldt University of Berlin and the International Graduate Program Medical Neurosciences of the Charité University Medicine, the Berlin Medical School. Student exchanges, transfers between programmes and mutual recognition of training are governed by the DRS regulations on our side and respective documents of the other graduate schools.

Dr. med. vet. Doctoral programme
Approximately 60% of all State certified veterinarians primarily aiming at a career as future practitioners enroll in our "Dr. med. vet." programme which is the traditional German graduate student academic training structure, paralleling similar structures in human medicine, civil engineering and virtually all other academic fields for over 100 years. This programme is less structured in terms of duration (2 to 5 years), scientific output (no / less requirements in terms of peer-reviewed publications but with a mandatory inaugural thesis), mentoring (only a single tutor) and curriculum. It offers much more flexibility for all involved such as the option of a combination with part time work in the clinics or a private veterinary practice. Despite less formal requirements in terms of ETCS credits, several requirements implemented by the DRS also apply for students within the Dr. med. vet. programme, including training in good scientific practice, statistics and literature retrieval.
Students of both the PhD and the Dr. med. vet. programmes and their tutors and mentors sign a mentoring contract that lays down the cornerstones of the obligations of all parties involved, e.g., periodic project discussions, the allocation of lab and office space, measures in case of conflicts or disagreements and good scientific / laboratory practices.
According to the rules for obtaining a doctorate degree in veterinary medicine, it is possible in exceptional cases start working on a dissertation topic during undergraduate studies. However, this

scenario is criticized as in such cases students might concentrate on this particular discipline already during the undergraduate training which in the end might hinder their broader professional education. On the other hand, such an early focusing on scientific work may motivate exceptionally talented students for a research career and gives students the privilege of having insight into the work and structure of a research institution, which may also be regarded as part of valuable academic training. At present, approx. 5% of the students take advantage of this option which may actually represent a reasonable number of exceptionally motivated and talented students.

Postgraduate education programmes: Master of Sciences (M.S.) degree programmes
As clinically oriented graduate education programmes, the Faculty offers a Master Degree Programme in Small Animal Sciences and an MSc in Equine Medicine. The programmes are designed as consecutive master programmes, with a veterinary state certificate as prerequisite for admission. Both programmes cover a 3-year period of structured modular training, usually in parallel to clinical work, finishining with a master´s thesis which may but not has to involve publications in scientific journals. Successful candidates, currently approx. 25 per year in each programme, are conferred the degree of Master of Sciences in the respective field. Both programmes are subject to supervision and quality control by the self accreditation system of Freie Universität Berlin.

European College Diplomate Training
A large number of specialization subjects under the administrative and regulatory roof of the European Board of Veterinary Specialization (EBVS) are established in the Faculty and offered through College-certified training centers, headed by Diplomates of the respective Colleges. Programmes include residency training in small animal and equine surgery, small animal and equine medicine, animal nutrition, pathology, microbiology, veterinary publish health and other topics (see table 10.1.1. in the core SER document). The Diplomate status, whenever possible and appropriate, is a prerequisite in the advertisement and appointment of leading faculty positions.

National Certificates of Veterinary Specialization (Fachtierarztprogramm)
Similar to the EBVS-guided European Diplomate programmes, the certified and quality controlled specialization into a large number of veterinary disciplines has been implemented for many decades in Germany. These specialization programmes are implemented, governed and controlled by the State Veterinary Chambers by law. The chambers revise their programmes periodically and make all details of programmes and requirements public[6]. The duration of programmes comprises of 4 or 5 years and disciplines include a wide range from small animal surgery to experimental animals, bee medicine and fish medicine. Certification is granted upon successful passing of a final examination and continuing education is mandatory with 20 hrs per year and field of specialization. Failure to comply with continued education rules may lead to the deprivation of the specialist status. At present, approx. 30% of veterinarians throughout Germany hold such a certificate of specialization with a strong trend towards increasing numbers. The Faculty is not legally involved in this programme, however, virtually all clinics and institutes are recognized training centers for these programmes. In addition, faculty members are heavily involved in the training and examination procedures, with the veterinary establishments being the largest and most important training centers of this programme throughout the country.

[6] http://www.tieraerztekammer-berlin.de/kammerrecht/10-weiterbildungsordnung.html

Appendix to Table 10.1.1.: Numbers of graduate students and junior staff registered in German veterinary specialisation programmes

Qualification as National Veterinary Specialist ("Fachtierarzt")	2015/16*	2014/15	2013/14	Mean
Anatomy	4	3	3	**3.3**
Nutrition	2	3	3	**2.7**
Microbiology	9	8	5	**7.3**
Food safety	3	3	3	**3.0**
Meat hygiene	1	1	1	**1.0**
Animal and environmental hygiene	3	2	2	**2.3**
Experimental animals	8	8	3	**6.3**
Animal welfare	2	2	0	**1.3**
Pathology	7	7	7	**7.0**
Parasitology	1	1	1	**1.0**
Pharmacology and toxicology	1	2	3	**2.0**
Small Animal Medicine	19	7	8	**11.3**
Reproduction medicine	4	3	3	**3.3**
Total	**64**	**50**	**42**	**52**

* The last full academic year prior to the Visitation

Appendix to 10.1.1.: Number of mandatory and voluntary practicals by undergraduate students at the Faculty

Institutes	2014		2015		2016	
	§57,1 (4 weeks)	§57,2 (16 weeks)	§57,1 (4 weeks)	§57,2 (16 weeks)	§57,1 (4 weeks)	§57,2 (16 weeks)
Institute of Veterinary Anatomy (WE01)	2	0	0	0	0	0
Institute of Veterinary Physiology (WE02)	0	0	0	4	0	4
Institute of Veterinary Biochemistry (WE03)	0	0	0	0	0	0
Institute of Animal Nutrition (WE04)	0	0	0	0	0	0
Institute of Virology (WE05)	0	0	0	0	0	0
Institute of Immunology (WE06)	6	0	0	11	0	8
Institute of Microbiology and Epizootics (WE07)	12	0	20	8	4	10
Institute of Food Safety and Food Hygiene (WE08)	50	3	53	2	49	1
Institute for Animal and Environmental Hygiene (WE10)	12	0	0	30	0	0
Institute of Animal Welfare, Animal Behavior and Laboratory Animal Science (WE11)	0	0	0	0	0	0
Institute of Veterinary Pathology (WE12)	73	8	83	0	103	0
Institute of Parasitology and Tropical Veterinary Medicine (WE13)	10	16	0	0	0	0
Institute of Pharmacology and Toxicology (WE14)	8	6	0	11	0	0
Institute of Poultry Diseases (WE15)	0	5	0	10	0	13
Institute for Veterinary Epidemiology and Biostatistics (WE 16)	0	0	0	0	0	0
Equine Clinic: Surgery and Radiology (WE17)	4	46	41	32	3	34
Ruminant and Swine Clinic (WE18)	14	68	20	75	16	56
Animal Reproduction Clinic (WE19)	2	0	0	0	0	8
Small Animal Clinic (WE20)	16	38	29	70	19	49
Total	**209**	**190**	**146**	**253**	**194**	**183**
Total §57,1 + §57,2	**399**		**399**		**377**	

Appendix to 10.1.4.: Number of attendees to continuing education courses provided by the Establishment

Scientific institutions	Courses	AY* (2015/16)	AY-1 (2014/15)	AY-2 (2013/14)	Mean
BTG	Veterinary training, 10 each year	1000	1100	1000	1033
1	"Anatomy and topography of canine abdominal and pelvic organs." In collaboration with DIPO (German Institute for Equine Osteopathy)	10			10
1	"Cytology 1 (blood smears and effusion analysis)" in collaboration with med vet symposia GbR	20			20
1	"Cytology 2 (skin size increases and lymph nodes" in collaboration with med symposia GbR	19			19
2, 3	Conference for DVG specialist groups in physiology and biochemistry	120			120
3	Veterinary medicine diagnosis forum	80			80
3	Bee rounds for official veterinarians at Düppel		80	80	80
4	ESVCN annual conference	250			250
4	Animal nutrition in practice - exotic bird nutrition	30			30
4	Animal nutrition in practice - influence of nutrition on skin and coat problems in dogs and cats	30			30
4	Animal nutrition in practice - nutrition for old dogs and cats	30			30
4	Vegetarian and vegan nutrition in dogs and cats	30			30
4	Colic in horses and the influence of feeding	30			30
4	Animal nutrition in practice - dietary measures in the treatment of intestinal diseases in dogs and cats	30			30
4	Animal nutrition in practice - obesity in dogs and cats		30		30
4	Animal nutrition in practice - dietetics in liver and kidney disorders in dogs and cats - what alternative are there to commercial diet food?		30		30
4	Animal nutrition in practice - dietetics for old dogs and cats		30		30
4	Animal nutrition in practice - nutrition for whelps: Possibilities for rationing and frequent feeding errors			30	30
4	Animal nutrition in practice - urinary stones in dogs and cats - influence of feeding as therapy and prophylaxis			30	30

Scientific institutions	Courses	AY* (2015/16)	AY-1 (2014/15)	AY-2 (2013/14)	Mean
4	Animal nutrition in practice exocrine pancreas insufficiency, pancreatitis, diabetes mellitus - how can feeding help?			30	30
7	Macrophages as bacteria shuttles; how bacterial pathogens abuse phagocytosis	3	2		2.5
7	Emergence of new exotic zoonoses	10			10
7	Research topics in veterinary medicine	27	9	27	21
7	Veterinary medical diagnoses	21	6	26	18
7	VetMAB E-learning (fundamentals module)	1,200	500		850
7	VetMAB E-learning (mastitis module)	1,200	500		850
7	VetMAB E-learning (swine module / gastro-intestinal tract)	1,200			1200
7	VetMAB E-learning (swine modul / respiration tract)	1,200			1200
7	VetMAB E-learning (cattle / respiration tract)	1,200			1200
7	Training in hygiene management incl. hand hygiene		40		40
7	Hospital-acquired infections in veterinary medical clinics		1		1
7	Emergence of new exotic zoonoses		9		9
7	Infection epidemiology		1	4	3
7	Bridge colloquium		1	54	28
7	Interactive animal disease control			1	1
7	Generation of bacterial mutants			4	4
8	FTA food hygiene, module course (Saxon Veterinarian Association; joint event with Universität Leipzig)	40	40		40
8	Hygiene and quality management in food	20			20
8	Campylobacter, Arcobacter & Related Organisms (CARO2014)	120			120
9, 10	Specialist conference for meat and poultry meat hygiene	290	240	190	240
10	DVG specialist group conference “Animal Hygiene and Environmental Health”		100		100
11	Training on new regulations in animal welfare laws and laboratory animal welfare regulations		138		138

Scientific Institutions	Courses	AY* (2015/16)	AY-1 (2014/15)	AY-2 (2013/14)	Mean
11	Training for veterinarians qualifying to become officer for animal welfare. Training catalogue in keeping with animal protection laws appendices 1 and 2. Course 1		50		50
11	Training for veterinarians qualifying to become officer for animal welfare. Training catalogue in keeping with animal protection laws appendices 1 and 2. Course 2		50		50
11	45. Seminar on laboratory animal science and animal experiments		300		300
11	Laboratory animal science course for doctoral students. Module A, fundamentals course, for right to participate in animal experiments, in keeping with animal protection laws appendices 1 and 2		13		13
11	Laboratory animal science course for doctoral students. Module B, advanced course, which, along with module A, fulfils the requirements set out by FRELASA		11		11
13	16th Drug Design and Development Seminar,	120			120
13	Workshop on ticks and tick-borne diseases	60			60
13	Conference for DVG specialist group "Parasitology and Parasitic Diseases"	180			180
13	First Joint AITVM-STVM Conference “Tropical Animal Diseases and Veterinary Public Health: Joining Forces to Meet Future Global Challenges”	285			285
13	Workshop “In vitro Cultivation of Blood Parasites”	20			20
13	Workshop “Artificial Feeding of Ticks”	30			30
13	Parasitology Colloquium	20	20	20	20
14	The Veterinary Pharmacy - Update for Bovine Practitioners	140			140
14	Approval and registration of medicinal products		20		20
14	Use of antibiotics in pet practices: Pharmacological fundamentals and recommendations on the use of antibiotics		80		80
14	The 16th AMG amendment: What will change for veterinarians? Vetlife: virtual classroom			60	60
14	Self-medication in domestic animals: possibilities and limits;			60	60
15	Broiler chickens part II (World Veterinary Education in Production Animal Health)	20			20
15	Chicken I course (World Veterinary Education in Production Animal Health)		20		20
15	“Hafez” international symposium on turkey diseases	155		170	163

Scientific institutions	Courses	AY* (2015/16)	AY-1 (2014/15)	AY-2 (2013/14)	Mean
15	“Hafez” international symposium on turkey production		143		143
16	Statistics refresher	67	100	55	74
16	Data management with Excel	40	22		31
16	Creating E-learning modules in EXE Learning		10		10
16	Biostatistics Colloquium (lecture series)	50	50		50
16	ECVPH Workshop Animal Health Economics	30			30
16	DRS Epidemiology Spring School	35	35		35
17	Master's degree program in equine medicine module	36			36
17	Training for transferring veterinarians		60		60
17	Clinic training program for residents: internal medicine, surgery and internal and specialist veterinarian training in equine medicine		22		22
17	DGRM biotechnologies workshop	45			45
17	Merial veterinarian training		28		28
18	DVG Vet Conference (German Buiatrics Society)	220		220	220
18	Berlin-Brandenburg Cattle Day	305	385		345
20	Master of Small Animal Science, Bone Muscle and Tendon Diseases	112			112
20	Master of Small Animal Science, Joint Disorders	114			114
20	Master of Small Animal Science, Imaging		93		93
20	Master of Small Animal Science, Bird Diseases		78		78
20	Master of Small Animal Science, Endocrinology		85		85
20	Master of Small Animal Science, Reptile Diseases		76		76
20	Master of Small Animal Science, Respiration Tract		85		85
20	Master of Small Animal Science, Infection Diseases		87		87

Appendix to 10.1.5.: Larger research projects currently running at the Faculy

Major research programmes with major impact on undergraduate or graduate teaching (selection of programmes with > 500.000 € funding per project)
Topic "Infection Medicine including Zoonotic Diseases and Resistance"
1. **IMPRESS InfectContol 2020 „Innovative Reduction of Multi-Resistent Pathogens (MRE) and Next Generation Sequencing (NGS)-Based Molecular Surveillance" funded by the German Federal Ministry of Education and Research (FMER)**
2. **Parasite Infections: From Experimental Models to Natural Systems, a GRC funded, "RTG 2046"**
3. **Food-Borne Zoonotic Infections (FBI Zoo), funded by German Federal Ministry of Education and Research (FMER)**
4. **ESBL and Fluoroquinolone resistant *Enterobacteriaceae* (RESET), funded by FMER**
5. ***Staphylococcus aureus*/MRSA as zoonotic pathogen (MetVet-Staph), funded by FMER**
6. ***Arcobacter*-pathogenic potential and role as zoonotic agent (Arcopath), funded by FMER**
7. **Improving the management of trypanosomosis in smallholder livestock productuion systems in tsetse-infested sub-Saharan Africa (TRYRAC); funded by the EU (EurpopeAid)**
8. **Molecular epidemiology network for promotion and support of delivery of live vaccines against Theileria parva and Theileria annulata infection in Eastern and Northern Africa, GRC funded, SE862/2-1**
9. **Anti-tick vaccines to prevent tick-borne diseases in Europe (ANTIDotE) funded by the EU (FP7)**
10. **Molecular patterns of influenza virus envelope adaptation to interspecies transmission, funded by the Human Frontiers Science Program (USA, Great Britain, Singapore, Germany)**
11. **Specific recruitment of viral components and assembly of enveloped viruses, Project C3 of the CRC "From Molecules to Modules: Organisation and Dynamics of Functional Units in Cells" GRC funded, "SFB 740"**

Topic "Veterinary Public Health including Food Safety and Product Quality"
1. **Climate Warming and the Emergence of Seafood and Waterborne Vibrioses (VibrioNet), funded by FMER**
2. **Development of reduction measures for antimicrobial resistant microorganisms in the entire poultry production chain (EsRAM), funded by Federal Ministry of Food and Agriculture (FMFA)**
3. **Impact of glyphosate on the microbiota of food producing animals (GlyphoBak), funded by FMFA**
4. **Development of a Quick Detection Assay for Pathogens in Milk: RemuNa, funded by the Federal Ministry of Food and Agriculture (FMFA)**
5. **Assessment of the parasitic burden in the smallholder pig value chain in Uganda and implications for public health, funded by the German Ministry of International Cooperation**
6. **Poultry Production Restructured: Integration of Broiler and Egg Production by using a Dual-Use Chicken Line for Improved Animal Protection (Integhof)" funded by the German Federal Ministry of Education and Research (FMER)**

Additional research programmes with major relevance linked to regional networks and/or individual expertises (selection of programmes with > 500.000 € funding per project)
1. PraeRi Bovine Health Prevalence Study Project, funded by the National Institute for Agriculture and Nutrition
2. ClawFit Innovations for the Improved Husbandry of Farm Animals, funded by the National Institute for Agriculture and Nutrition
3. Innate Immunity of the Lung, GRC funded “SFB-TR84”
4. Nanocarriers for Improved Skin Therapies, GRC funded “SFB-1112”
5. Berlin-Brandenburg Research Platform B23R with Integrated Graduate College: 3R-Research, Genetic Engineering, Tissue Engineering; funded by the German Federal Ministry of Education and Research (FMER)
6. ZellDiX: A novel cell differentiation index for the evaluation of udder health in milk productivity monitoring programmes; funded by the BLE/Rentenbank

Appendix to 10.1.6.: Certificates of the German Accreditation Council for the Master Degree Programs in Small Animal Sciences and Equine Medicine

Akkreditierungsurkunde

Aufgrund der am 29. August 2016 erfolgten Systemakkreditierung und des damit von der Stiftung zur Akkreditierung von Studiengängen in Deutschland verliehenen Selbstakkreditierungsrechts erteilt die

Freie Universität Berlin

das Siegel des Akkreditierungsrates für den

Weiterbildenden Masterstudiengang
Small Animal Science (M.Sc.)

Fachbereich Veterinärmedizin

PROGRAMM AKKREDITIERT
Akkreditierungsrat

Die Akkreditierung erfolgt gemäß Beschluss des Präsidiums der Freien Universität Berlin und gilt bis zum 30. September 2023.

Berlin, 14. November 2016

Universitätsprofessor Dr. Peter-André Alt
Präsident

Figure 4 Quality seal of the German Accreditation Council for the Master Degree Programme "Small Animal Science"

Akkreditierungsurkunde

Aufgrund der am 29. August 2016 erfolgten Systemakkreditierung und des damit von der Stiftung zur Akkreditierung von Studiengängen in Deutschland verliehenen Selbstakkreditierungsrechts erteilt die

Freie Universität Berlin

das Siegel des Akkreditierungsrates für den

Weiterbildenden Masterstudiengang
Pferdemedizin (M.Sc.)

Fachbereich Veterinärmedizin

PROGRAMM AKKREDITIERT
Akkreditierungsrat

Die Akkreditierung erfolgt gemäß Beschluss des Präsidiums der Freien Universität Berlin und gilt bis zum 30. September 2023.

Berlin, 14. November 2016

Universitätsprofessor Dr. Peter-André Alt
Präsident

Figure 5 Quality seal of the German Accreditation Council for the Master Degree Programme "Equine Medicine"

Appendix to 11.1.1.a: Freie Universität Berlin Understanding of Quality Management

Preamble
Freie Universität Berlin was founded in 1948 by students and teachers. The freedom of research and teaching, social responsibility and international knowledge exchange characterizes its self-conception. Freie Universität Berlin is bound in its teaching and research to its motto, Veritas, Iustitia, Libertas. The following overarching objectives in university studies and teaching are orientated towards this self-conception.

Quality objectives
University studies at Freie Universität Berlin impart specialist and methodological competence in each discipline and in academia as a whole. They are based on the highest academic standards and the state of international research. Graduates of Freie Universität Berlin can extract, apply, reflect upon and convey, academic knowledge.

University studies at Freie Universität Berlin promote intellectual independence, reflective abilities and critical thinking. They impart ethical competencies for the responsible handling of research results.

University studies at Freie Universität motivate and enable engagement with and for society. On the basis of their academic qualifications, graduates of Freie Universität Berlin have at their command social competences, gender competences and the ability to handle inequality and social diversity. University studies at Freie Universität Berlin prepare students for academic work in research and teaching as well as for science and academic based professions. The graduates of Freie Universität Berlin have the necessary qualifications to take up employment in Germany and abroad. Above all master's degree programs and doctoral programs prepare students for scientific and academic research.

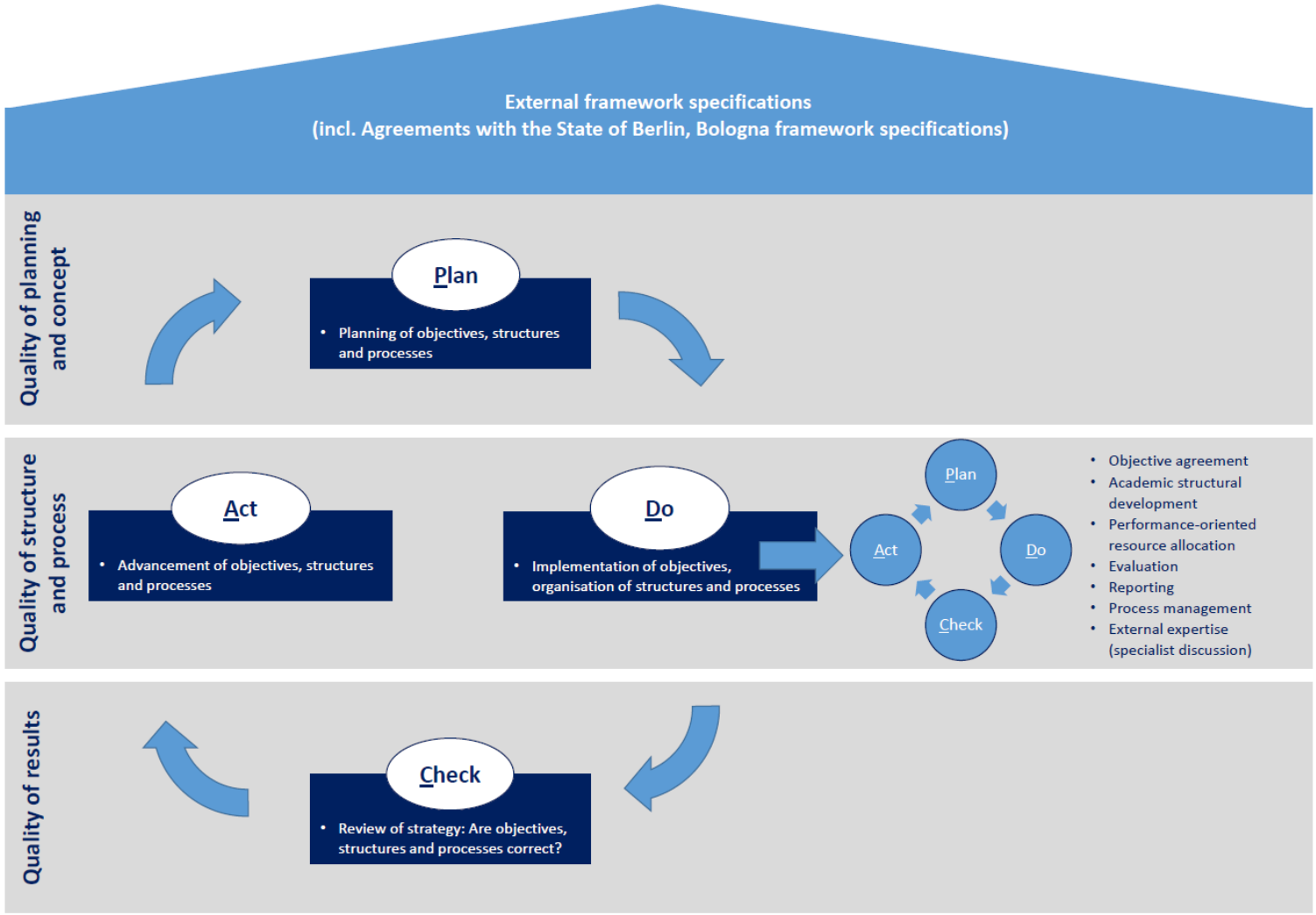
To ensure the success of its students, Freie Universität Berlin creates – also by its international orientation – the best possible framework conditions. It takes into account different circumstances in which students may find themselves, and supports its students in dealing with the different challenges which may face them.

Appendix to 11.1.1.b: Overview of the University-wide description of processes related to studying and teaching

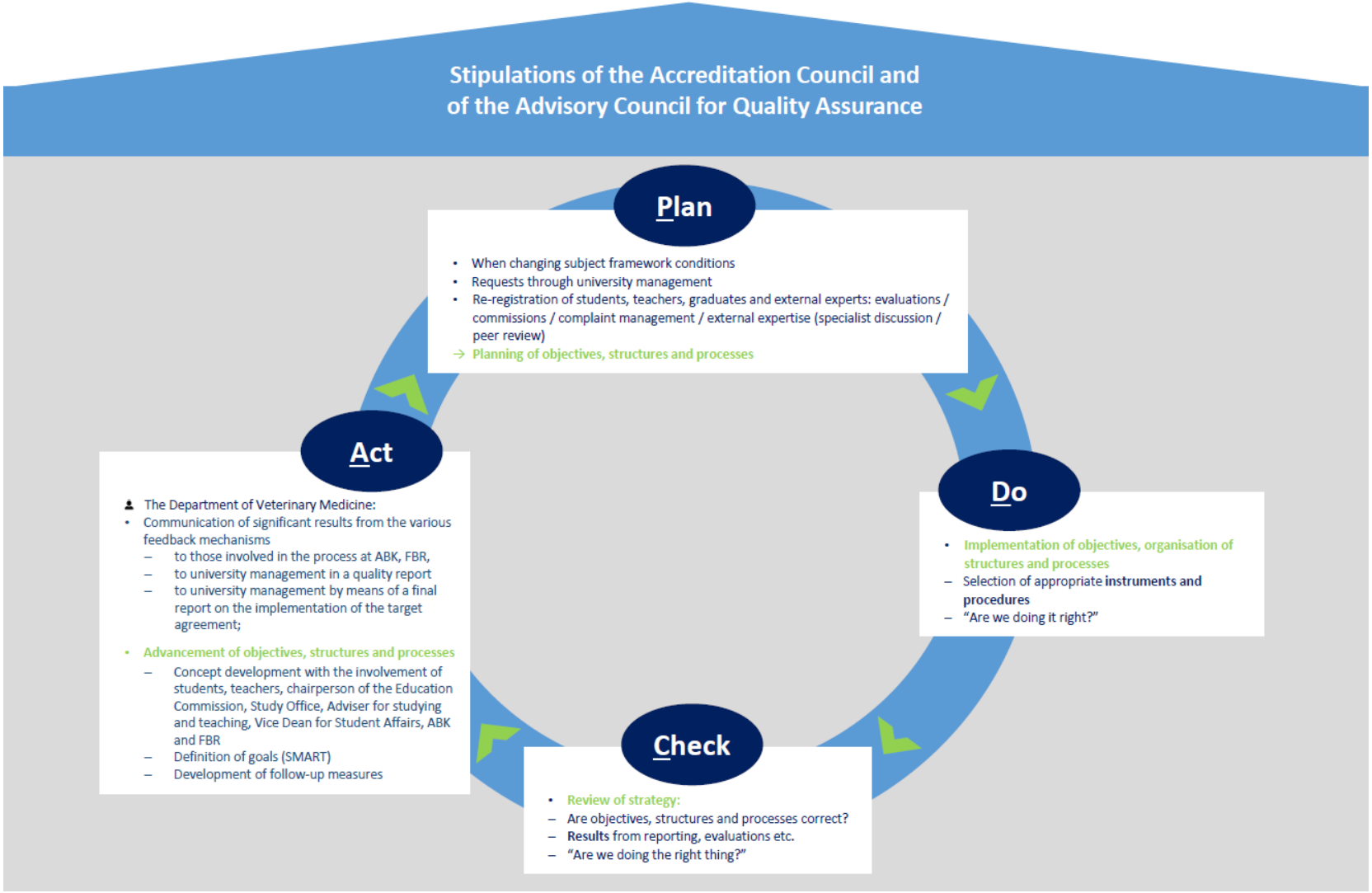
Process type	Process description
Control processes	• Process Description S.01.01.FU: Implementing Objective Agreements (Extract) • Carry out appeal proceedings • Deliver funds on a performance-orientated basis
Key processes of studying and teaching	**Establish, develop and close degree programmes** • Establish new degree programmes • Process Description K.01.02.FU: Advancement of Degree Programs (Extract) • Close degree programmes • Internally accredit and re-accredit degree programmes **Inform, advise and take care of prospective and current students** • Inform, advise and take care of prospective students and current students **Advertise, approve and enrol into degree programmes** • Enrol onto a degree programme • Application and approval for first-semester admission to restricted undergraduate studies • Application and approval for first-semester admission for master's programmes **Study offer** • Process Description K.04.01.FU: Providing and Offering Courses (Extract) **Carry out examination matters** • Carry out module examinations • Allow for and certify study and examination services • Completion of studies **Help students with administration** • Students' confirmation • Carry out student administration services • Administer fees • Unenrolment of students • Report student and examination data **Conduct a doctorate** • Conduct individual doctorates
Support processes	**Reporting system** • To report on quality in studies and teaching **Carry out evaluations** • Carry out central evaluations • Carry out central graduate survey

	Further training • Provide the further training programme of the Continued Education Center

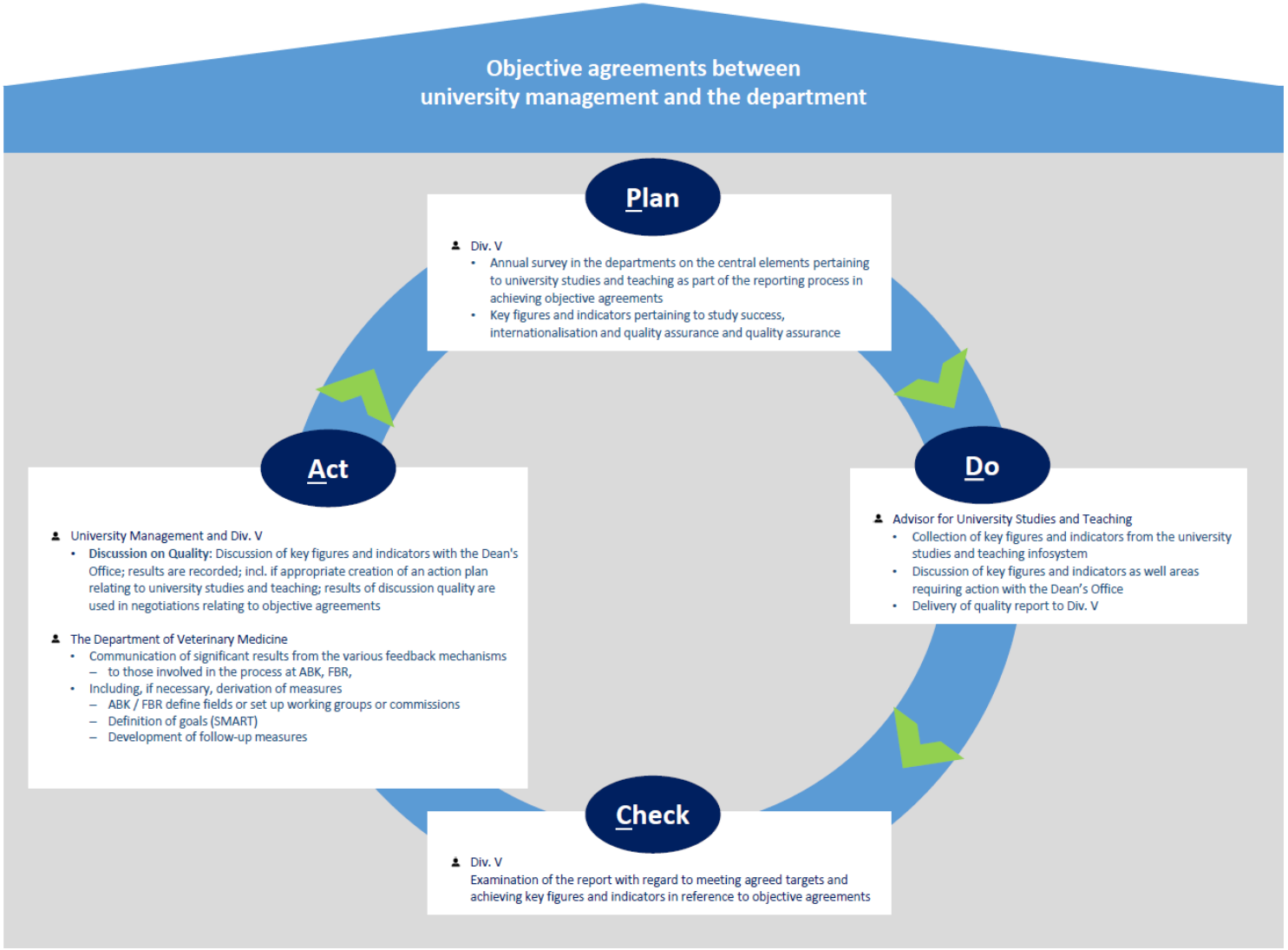
Appendix to 11.1.1.c: Quality Management for University Studies and Teaching Loop Control System



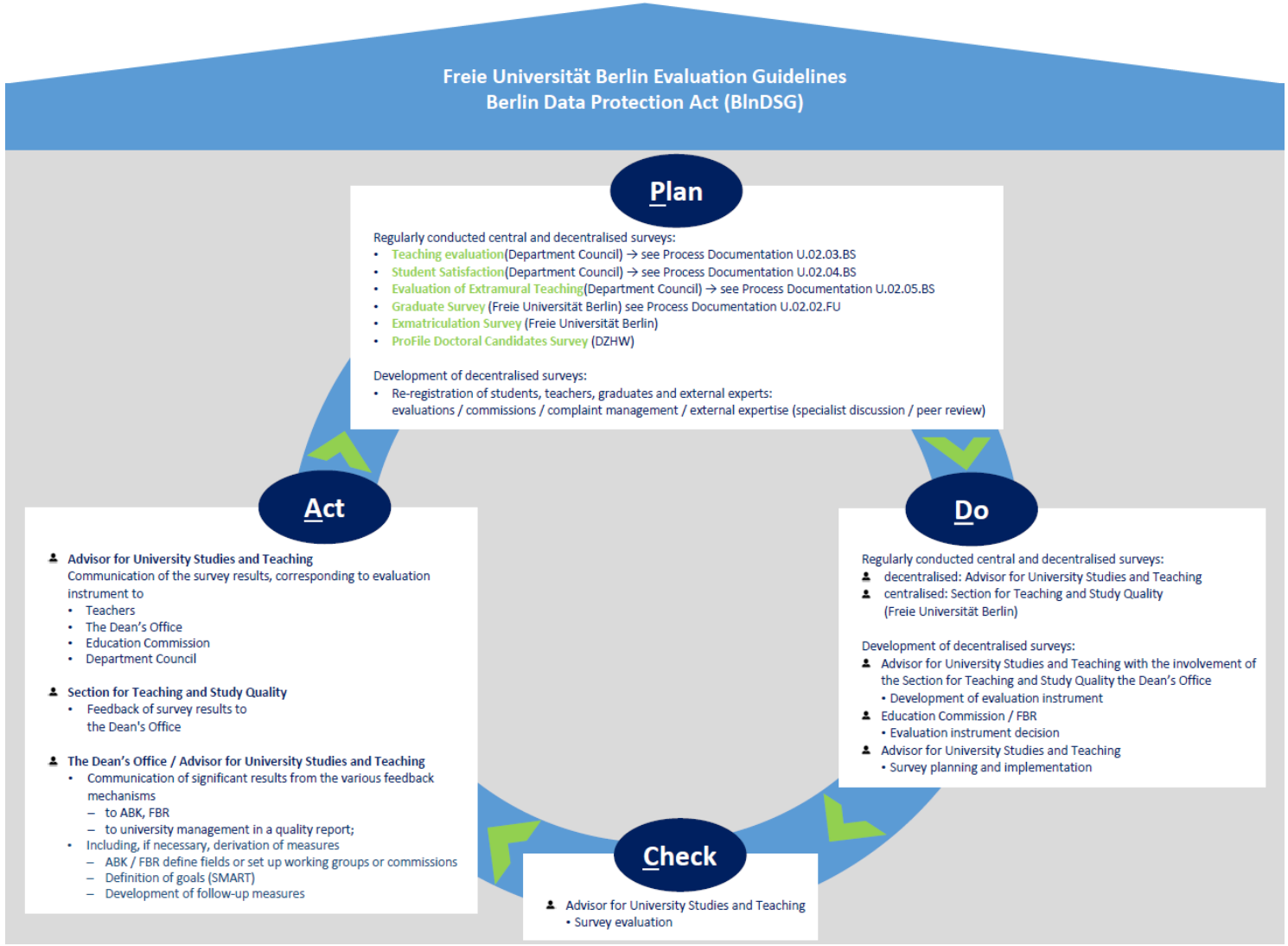
Appendix to 11.1.5.a: PDCA Cycle Quality Assurance System of Freie Universität Berlin and of the Faculty



Appendix to 11.1.5.b: PDCA Cycle Quality Report: University Studies and Teaching



Appendix to 11.1.5.c: Conducting PDCA Cycle Evaluations



Appendix to 11.1.5.d: PDCA Cycle Obtaining External Expertise (Conducting Specialist Discussions)