

**CURRICULUM DOCUMENT
VETERINARY MEDICINE EDUCATION
PROGRAM**

(Bachelor and Profession Degree in Veterinary Medicine)



**UNIVERSITAS AIRLANGGA
FACULTY OF VETERINARY MEDICINE
SURABAYA 2018**

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PROGRAM SPECIFICATION

1	Awarding body/institution	Universitas Airlangga
2	Name of the program	Veterinary Medicine Program
3	Details of the accreditation by a professional or statutory body	<ul style="list-style-type: none"> • Bachelor's and profession's level has been accredited grade A by Indonesian Accreditation Agency for Higher Education (BAN-PT) stated in the BAN-PT Official Statement No. 023/SK/BAN-PT/Akred/PSPKH/I/2015 from 24 January 2015 until 24 January 2020 • Bachelor's and profession's level has been accredited by Asean University Network (AUN) with certificate number AP101UNAIR15 Dated 9 May 2015. Valid until 8 May 2019.
4	Type (e.g. full/part-time, residential/distance learning, dual, intensive program)	Full-time
5	Final degree (title)	Bachelor = SKH (Sarjana Kedokteran Hewan) Professional = DVM (Doctor of Veterinary Medicine)/ drh (Dokter Hewan)
6	Expected Learning outcomes of the program	<p><u>BACHELOR LEVEL</u> SPECIALIZED COMPETENCES</p> <p>LO 1 Apply basic knowledge and technology of anatomy, histology, physiology, biochemistry and embryology to construct basic clinical improvement</p> <p>LO 2 Analyze diagnosis of animal diseases caused by virus, bacteria, parasite, mold and toxin based on physic and laboratory examination in order to treat correctly</p> <p>LO 3 Assess the system of epidemiology and surveillance in controlling, preventing strategic, bio-products, bio-safety, bio-security and bio-materials from animals causing zoonotic diseases to eliminate them</p> <p>LO 4 Analyze various kinds of medicines based on chemical structures, pharmacokinetics, and pharmacodynamics, and the therapy to define drug of choice in line with caused agent of sick animals</p>

		<p>LO 5 Asses developing biotechnology of animal reproduction (reproduction engineering), improve the quality of animal genetics to handle the problems on animal reproduction</p> <p>LO 6 Implement developing entrepreneurship skills in the field of veterinary and husbandry to be independent</p> <p>LO 7 Generate diagnose of physiological, abnormalities, metabolic and symptomatic diseases on animals to define diseases correctly</p> <p>SOCIAL COMPETENCES</p> <p>LO 8 Implement veterinary and husbandry science and technology creatively based on ethics, morality, religion, Pancasila and civics in public.</p> <p>LO 9 Organize ideas and information in veterinary medicine and animal husbandry field and apply consistent government laws and regulations concerning veterinarian professional code of ethics.</p> <p><u>PROFESSION LEVEL</u></p> <p>LO 10 Generate clinical diagnose of physiological, abnormalities, metabolic and symptomatic diseases on animals based on laboratory and clinical examination to treat them correctly.</p> <p>LO 11 Monitor diseases through epidemiology study, legislation, various zoonotic diseases, HACCP, animal quarantine and one health system to establish regulations based on epidemiological and zoonotic disease knowledge.</p> <p>LO 12 Generate ethics, animal welfare in veterinary, public society and communication skill.</p>
7	Standard period of study and credit points gained (according to ECTS)	Bachelor of Veterinary Medicine (S1) degree requires 4 years (8 semesters) with 148 credits equivalent to 223.63 ECTS

		Professional level requires 1 year (2 semesters) with 37 credits equivalent to 55.91 ECTS
8	Expected intake for the program	<p>There are three types of selection schemes for university entrance,</p> <ol style="list-style-type: none"> 1) National Higher Education Entrance Examination (Non-test track, SNMPTN); 2) National Higher Education Entrance Examination (Written test track, SBMPTN); and 3) Mandiri track (UNAIR-owned Entrance Examination System) <p>GENERAL REQUIREMENTS</p> <p>SNMPTN is a national selection pattern based on academic achievement result by using report card semester 1 (one) up to semester 5 (five) for SMA/SMK/MA or equal with study period 3 (three) years or semester 1 (one) up to semester 7 (seven) for vocational school with 4 (four) years of study, and academic portfolio.</p> <p>The School Database and Student Database (PDSS) is a database that contains track record of school performance and student achievement. Schools whose students follow SNMPTN must have a National School Principal Number (NPSN) and fill in student achievement data in PDSS.</p> <p>Students who are eligible for selection are students who have national Student Identity Number (NISN), have superior achievement and track record of academic achievement in PDSS. Students who will register SNMPTN must read the information on the selected PTN page about the provisions related to the admission of new students.</p> <p>Entry Requirements:</p> <p>Fresh graduates from high school / vocational / MA or equivalent (including SRI abroad) who have superior achievement with provision based on accreditation of school as follows:</p> <ul style="list-style-type: none"> • Accreditation A, 50% best in school; • Accreditation B, 30% best in school; • Accreditation C, 10% best in school; • Not yet accredited, 5% best in school.

		<p>SBMPTN 2017 is a selection conducted by Public Higher Institutions within the Ministry of Research, Technology, and Higher Education (Kemenristekdikti) and the Ministry of Religious Affairs together under the coordination of the Central Committee with the selection based on the results of paper-based or computer-based test, or combined test of written exam and skill</p> <p>SMA/SMK/MA graduate or equivalent</p> <p>Graduates of SMA/SMK/MA or equivalent. Certificate of Graduation shall contain at least the information of identity and recent photograph and stamped valid.</p>																																
9	Program starting date within the academic year and first time the program has been/will be offered	The academic calendar starts in September/August																																
10	Program structure including courses, credits, learning strategy etc. (curriculum map)	<p>The bachelor program is set for 4 years (8 semesters), with a total credit of 148.</p> <p>The curriculum is classified into general and specific scientific skills</p> <table border="1"> <thead> <tr> <th></th> <th>Credit</th> <th>Credit (%)</th> <th>ECTS</th> </tr> </thead> <tbody> <tr> <td>A. General Scientific Skill</td> <td>59</td> <td>39.9</td> <td>89.15</td> </tr> <tr> <td>B. Specific Scientific Skill</td> <td>89</td> <td>60.1</td> <td>134.48</td> </tr> <tr> <td>Total</td> <td>148</td> <td>100</td> <td>223.63</td> </tr> </tbody> </table> <p>The profession program is set for 1 year (2 semesters), with a total credit of 37 that support core and supplementary competencies.</p> <table border="1"> <thead> <tr> <th></th> <th>Credit</th> <th>Credit (%)</th> <th>ECTS</th> </tr> </thead> <tbody> <tr> <td>A. Core competencies</td> <td>29</td> <td>78.4</td> <td>43.82</td> </tr> <tr> <td>B. Supp. competencies</td> <td>8</td> <td>21.6</td> <td>12.09</td> </tr> <tr> <td>Total</td> <td>37</td> <td>100</td> <td>55.91</td> </tr> </tbody> </table> <p>Courses are delivered in form of lectures, tutorial and practical/laboratory work activities and grouped into modules.</p>		Credit	Credit (%)	ECTS	A. General Scientific Skill	59	39.9	89.15	B. Specific Scientific Skill	89	60.1	134.48	Total	148	100	223.63		Credit	Credit (%)	ECTS	A. Core competencies	29	78.4	43.82	B. Supp. competencies	8	21.6	12.09	Total	37	100	55.91
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11	Amount and type of fees/ charges	<p>Tuition fee for student who passed the National Entrance Examination (SBMPTN or SNMPTN) consist of 5 (five) categories based on the assessment on the financial capability of student's guarantor/parents, as follow:</p> <p>UKT I : IDR 0 – 500,000 UKT II : IDR 750,000 – 1,000,000 UKT III : IDR 5,000,000 – 6,000,000 UKT IV : IDR 7,500,000 – 9,500,000 (UKT = uang kuliah tunggal/single tuition fee)</p> <p>For student who passed the Mandiri admission, Minimum admission fee is IDR 50,000,000,- (one-time payment), and tuition fee is IDR 7,500,000,-per semester.</p> <p>For International student who passed the Mandiri admission, Minimum admission fee is IDR75,000,000,- (one-time payment), and tuition fee is IDR 20,000,000,- per semester.</p>
12	Date on which the program specification was written or revised	2014

Chapter 1

BACKGROUND

Curriculum is one of the elements in the educational process that is very important and stands as the determining factor for the achievement of graduates' competences. The curriculum is designed to ensure the high quality of the program. Veterinary Medicine program creates high-quality and dignified graduates who can integrate, apply and develop the science of veterinary and husbandry in order to compete at national and international level. Curriculum in veterinary medicine is designed and established to regulate education in accordance to the need of veterinarian professionalism.

Veterinary Medicine Program, Faculty of Veterinary Medicine Universitas Airlangga sets the profiles of graduates as veterinarian, leader, communicator, decision maker, manager, lifelong learner, teacher, and researcher. This program combines two levels of education: Bachelor and the Professional Program.

The faculty was officially founded on 1 January 1972 based on the Decree of Education and Culture Minister No. 055/01/1972. The Profession Program is a continuation of the Bachelor Program in accordance with the Decree of the Minister of Education and Culture, No. 0311 of 1994, the Government Regulations No. 60 of 1999 and the results of the National Workshop on Higher Education of Veterinary Indonesia, in Bogor on 26-28 April 1999. It was implemented to fulfill the standard of Indonesian Qualifications Framework (KKNI). The curriculum documents have been prepared by the faculty and has been through several reviews conducted under the coordination and supervision of Institute of Education Research and Development-Universitas Airlangga (LP3-UA).

The curriculum structure of the Veterinary Medicine Education Program refers to the competences of the students after completing their study. The competences refer to some standards, including:

- The standards set by the Higher Education Minister of Education in accordance of the Republic of Indonesia No. 232/U/year 2000 on Guidelines for Higher Education Curriculum Development and Assessment of Student Learning Outcomes.
- Government Regulations / PP No. 60/1999 and Decree of Education and Culture Minister No. 056 / U / 1994 and No. 0311 / U / 1994 on the semester credit system for S1 and Profession programs.
- Redesigning Curriculum of International Standard as the result of the curriculum

evaluation in 2005 by adjusting to the needs of stakeholders stipulated by the Rector's Decree on the Establishment of Study Program Curriculum No. 1496 / H3 / KR / 2010 dated November 15, 2010

Veterinary Medicine Education Program Universitas Airlangga has been certified by the Asian University Network (AUN) in 2015. Therefore, it is highly expected that the graduates will be internationally recognized in order to gain opportunities to compete on a global level.

Chapter 2

VISSION

The **Vision** of Study Program of Veterinary Medicine is to be a leading study program at national and international level, to be the pioneer of educational and research development in the field of veterinary and animal husbandry which are independent and innovative based on religion morality, ethics, living environment preservation and animal welfare by keeping the orientation to community welfare.

Chapter 3

MISSION

The **Missions** of Study Program of Veterinary Medicine are as follows:

1. To conduct academic, professional, specialist studies in the fields of veterinary, and husbandry based on modern learning technology, therefore the study program can create graduates with professional ability and have a strong will to develop their science, have entrepreneurial spirit and respect religion morality and ethics.
2. To conduct basic and applied researches, and policy researches which are innovative and high-quality in the fields of veterinary and husbandry to support the development of science & knowledge, education, and community service based on religion morality, ethics, living environment preservation and animals prosperity.
3. To dedicate skills in the fields of veterinary and husbandry to community.
4. To create mutual partnership with respective institutions in order to create the independence of faculty oriented on quality and competitiveness at national and international level.

Chapter 4

GRADUATE'S PROFILE

The graduates of Veterinary Medicine Study Program are expected to have profiles as following:

- a. Professional** A veterinarian is expected to be able to provide veterinary services and to interact professionally with individuals and communities. The veterinarian must demonstrate the sustainable high quality of animal services, built good collaboration with all parties involved in community, including other veterinarian colleagues. A veterinarian is expected to have the ability of the professional veterinarian in a variety of animal health services both public and private.
- b. Leader** A veterinarian is expected to be able to become leaders in various fields and situations (e.g. in a team), to have a leadership qualities including the ability to empathize, to communicate, to make decisions, to manage effectively, and to be a leader in times of limited for the animal as well as public welfare.
- c. Manager** A veterinarian is expected to be able to manage all veterinary medicine resources (human, physical, and financial resources) and information; to work with the team as a supervisor and as a manager/leader in the veterinary services team. A veterinarian is obliged to have a high responsibility in disseminating information about veterinary medicine services and related products.
- d. Entrepreneur** A veterinarian is expected to be able to create his/her own business. A veterinarian should have capacity and willingness to develop, organize and manage a business in veterinary medicine and animal husbandry.
- e. Researcher** A veterinarian is expected to have the competencies and commitment to do research and to take strategic decisions with full responsibility, in all aspects relevant to veterinary medicine problems.
- f. Life-long-learner** A veterinarian is expected to have willingness, spirit, concepts, principles and commitments as a veterinarian, to constantly learn and up-grade his/her knowledge through his/her professional career

Chapter 5

LEARNING OUTCOMES

The graduates of Veterinary Medicine Education Program are expected to have following competencies:

No.	EXPECTED LEARNING OUTCOME
Bachelor Level	
Specialized Competences	
LO 1	Apply basic knowledge technology of anatomy, histology, physiology, biochemistry and embryology to construct basic clinical improvement
LO 2	Analyze diagnosis of animal diseases caused by virus, bacteria, parasite, mold & toxin based on physic and laboratory examination in order to treat correctly
LO 3	Assess the system of epidemiology and surveillance in controlling, preventing strategic, bio-products, bio-safety, bio-security and bio-materials from animals causing zoonotic diseases to eliminate them
LO 4	Analyze various kinds of medicines based on chemical structures, pharmacokinetics, and pharmacodynamics, and the therapy to define drug of choice in line with caused agent of sick animals
LO 5	Asses developing biotechnology of animal reproduction (reproduction engineering), improve the quality of animal genetics to handle the problems on animal reproduction
LO 6	Implement developing entrepreneurship skills in the field of veterinary and husbandry to be independent
LO 7	Generate diagnose of physiological, abnormalities, metabolic and symptomatic diseases on animals to define diseases correctly
Social Competences	
LO 8	Implement veterinary and husbandry science and technology creatively based on ethics, morality, religion, Pancasila and civics in public
LO 9	Organize ideas and information in veterinary medicine and animal husbandry field and apply consistent government laws and regulations concerning veterinarian professional code of ethics to be implemented effectively.

Profession Level	
LO 10	Generate clinical diagnose of physiological, abnormalities, metabolic and symptomatic diseases on animals based on laboratory and clinical examination to treat them correctly
LO 11	Monitor diseases through epidemiology study, legislation, various zoonotic diseases, HACCP, animal quarantine and one health system to establish regulations based on epidemiological and zoonotic disease knowledge.
LO 12	Generate ethics, animal welfare in veterinary, public society and communication skill.

Chapter 6 ANALYSIS OF COMPETENCE

To do veterinarian practices professionally, ethically, legally and capable integrated in accordance with the development of veterinary science and technology in National and International

II. Profession Degree

10. Generate clinical diagnose of physiological, abnormalities, metabolic and symptomatic diseases on animals based on laboratory and clinical examination to treat them correctly.

11. Monitor diseases through epidemiology study, legislation, various zoonotic diseases, HACCP, animal quarantine and one health system to establish regulations based on epidemiological and zoonotic disease knowledge.

12. To generate ethics, animal welfare in veterinary, public society and communication skill.

8. Implement veterinary and husbandry science and technology creatively based on ethics, morality, religion, Pancasila and civics in public.

9. Organize ideas and information in veterinary medicine and animal husbandry field and apply consistent government laws and regulations concerning veterinarian professional code of ethics to implement effectively.

5. Asses developing biotechnology of animal reproduction (reproduction engineering), improve the quality of animal genetics to handle the problems on animal reproduction.

6. Implement developing entrepreneurship skills in the field of veterinary and husbandry to be independent.

7. Generate diagnose of physiological, abnormalities, metabolic and symptomatic diseases on animals to define diseases

1. Apply basic knowledge technology of anatomy, histology, physiology, biochemistry and embryology to construct basic clinical improvement.

2. Analyze diagnosis of animal diseases caused by virus, bacteria, parasite, mold and toxin based on physic and laboratory examination in order to treat correctly.

3. Assess the system of epidemiology and surveillance in controlling, preventing strategic, bio-products, bio-safety, bio-security and bio-materials from animals causing zoonotic diseases to eliminate them.

4. Analyze various kinds of medicines based on chemical structures, pharmacokinetics and pharmacodynamics, and the therapy to define drug of choice in line with caused agent of sick animals.

I. Bachelor Degree

Chapter 7

LEVEL OF DEGREE PROGRAM ON IQF

(Indonesian Qualification Framework)

INDONESIAN QUALIFICATION FRAMEWORK (IQF)

The Indonesian Qualification Framework (level 6 and 7) based on the Presidential Decree Number 8/2012, is described below.

BACHELOR

LEVEL 6

Capable to apply the field of expertise and use science and technology in its field in problem solving and capable to adapt to the situation faced

Master the theoretical concepts of a particular field of knowledge in general and the theoretical concepts of a special section in the field of knowledge in depth, and capable of formulating procedural problem-solving.

Able to make right decisions based on analysis of information and data, and be able to provide guidance on choosing various alternative solutions independently and in groups; Responsible for own work and can be given responsibility for the achievement of the work result of the organization

PROFESSION

LEVEL 7

Capable to plan and manage resources under his responsibility, and comprehensively evaluate his work by utilizing science and technology to produce strategic organizational development measures.

Capable to solve the problems of science, technology, and/or art in the scientific field of through a mono disciplinary approach.

Capable to research and take strategic decisions with full accountability and responsibility for all aspects that are under the responsibility of his area of expertise.

Chapter 8

CREDIT EQUIVALENCE

To facilitate credit transfer for educational exchange program with overseas universities, European Credit Transfer System (ECTS) is used. The Faculty of Veterinary Medicine of Universitas Airlangga uses Satuan Kredit Semester (SKS, Semester Credit Unit) where one sks is equal to 170 minutes for lectures, practicals and fieldworks.

The curriculum of the bachelor's and profession of veterinary medicine study program was based on the results of the 2016 curriculum redesign, with a total study load of 148 sks (~223.63 ECTS credits) which includes general dan specific scientific skills for bachelor's degree and 37 sks (~55.91 ECTS credits) for profession's degree (Table 8.1 and Table 8.3).

Table 8.1. Curriculum structure and credit equivalence of bachelor's degree of veterinary medicine study program

No	Course code	General Scientific Skills	Year	Semester	Credit	ECTS
1	AGI601	Islam	1	1	2	3.02
	AGP101	Protestantism				
	AGK101	Catholicism				
	AGH101	Hinduism				
	AGB101	Buddhism				
	AGC101	Confucianism				
2	NOP101	Civics Education	1	1	2	3.02
3	SOP101	Pancasila (State of Ideology)	1	1	2	3.02
4	BAE120	Indonesian Language	1	1	2	3.02
5	BIA101	Basic Veterinary Anatomy	1	1	3	4.53
6	BIK101	Lecture of Veterinary Biochemistry	1	1	3	4.53
7	BIK102	Practical of Veterinary Biochemistry	1	1	1	1.51
8	BIP101	Veterinary Embryology	1	1	2	3.02
9	KHR101	Introduction to Veterinary Science	1	1	2	3.02
10	KHU101	Lecture of Veterinary Physiology	1	2	3	4.53
11	KHU102	Practical of Veterinary Physiology	1	2	1	1.51
12	BIA201	Veterinary Topography Anatomy	1	2	3	4.53
13	BIA 102	Lecture of Histology	1	2	2	3.02
14	BIA 104	Practical of Histology	1	2	2	3.02
15	PHH101	Philosophy of Science	1	2	2	3.02
16	BIA301	Applied Anatomy and Capita Selecta	2	3	2	3.02
17	FAT401	Veterinary Pharmacology	2	3	3	4.53
18	BIM105	Bacteriology and Mycology	2	3	3	4.53
19	BIM201	Virology	2	3	2	3.02
20	BIM204	Veterinary Parasitology	2	3	2	3.02
21	PNH496	Basic Research Methodology	2	4	2	3.02
22	PNH497	Advanced Research Methodology	3	5	2	3.02

23	KKV420	KKN-BBM (fieldwork)	3	5	3	4.53
24	AGI401	Applied Islam	3	6	2	3.02
	AGP401	Applied Protestantism				
	AGK401	Applied Catholicism				
	AGH401	Applied Hinduism				
	AGB401	Applied Buddhism				
	AGC401	Applied Confucianism				
25	MNW101	Entrepreneurship	3	6	2	3.02
26	KLV301	Veterinary Counseling	3	6	2	3.02
27	HKD102	Veterinary Legislation	3	6	2	3.02
		Subtotal			59	89.15
No	Course code	Specific Scientific Skills	Year	Semester	Credit	ECTS
1	NUV101	Animal Feed and Nutrition Science	1	2	2	3.02
2	KHR102	Ruminant Science	1	2	2	3.02
3	KHR 103	Poultry and Non-ruminant sciences	2	3	2	3.02
4	KHT301	Animal Feed Technology	2	3	3	4.53
5	BIG102	Animal Genetics	2	3	2	3.02
6	FAT402	Veterinary Pharmacotherapy and Toxicology	2	4	3	4.53
7	KHD201	Bacterial and fungal diseases	2	4	3	4.53
8	KHD202	Viral disease	2	4	3	4.53
9	KHU103	General Veterinary Pathology	2	4	3	4.53
10	BIR 201	Lecture of Physiology and Technology of Reproduction	2	4	3	4.53
11	BIR102	Practical of Physiology and Technology of Reproduction	2	4	1	1.51
12	KHD205	Parasitic Disease	2	4	3	4.53
13	KHD401	Veterinary Clinical Diagnosis	3	5	3	4.53
14	KHD303	Poultry Health Management	3	5	2	3.02
15	FAF300	Veterinary Pharmacy Science	3	5	3	4.53
16	KHU104	Veterinary Systemic Pathology	3	5	3	4.53
17	KMV301	Veterinary Public Health	3	5	2	3.02
18	MNG401	Hazard Analysis and Critical Control Points	3	5	2	3.02
19	KHD304	Aquatic Animal Health Science/Diseases	3	5	2	3.02
20	KMV302	Health of Foods of Animal Origin	3	6	2	3.02
21	KHB401	Veterinary General Surgery (Pre- peri- and post surgery)	3	6	2	3.02
22	KHD301	Large Animal Internal Medicine	3	6	2	3.02
23	KHD302	Zoonosis	3	6	2	3.02
24	FIN401	Radiology	3	6	2	3.02
25	BII101	Immunology	3	6	2	3.02
26	MNH401	Management of Experimental Animals	3	6	2	3.02
	MNS401	Health Management of Dairy Cattle				
	MNS402	Management of Horses, Dogs and Cats				
27	KHD402	Small Animal Internal Medicine	4	7	3	4.53
28	LKM405	Environmental Health	4	7	2	3.02
29	KHB402	Veterinary Special Surgery (Applied surgery)	4	7	3	4.53
30	KHU401	Veterinary Clinical Pathology	4	7	3	4.53
31	KHO401	Lecture of Obstetrics and Infertility	4	7	3	4.53

32	KHO402	Practical of Obstetrics and Infertility	4	7	2	3.02
33	KME417	Veterinary Epidemiology and Economics	4	7	2	3.02
34	LKM106	Wild Animal	4	7	2	3.02
	PKA401	Veterinary Acupuncture				
	KUH401	Veterinary Forensic				
	KHL421	Bioproduct, Biosafety and Biosecurity				
35	PNH498	Seminar	4	8	3	4.53
36	PNH499	Thesis	4	8	5	7.56
Subtotal					89	134.48
TOTAL					148	223.63

The total study load of 148 sks (~223.63 ECTS credits) comprises of 74.3% lectures, 23.7% practical and 2.0% fieldwork (Table 8.2). There are 28 courses which contain integrated lecture and practical within the same course code. Two elective courses are available in semester 6 and 7 wherein student are able to choose elective courses (lecture) of 2 sks (each) out of 3 and 4 options respectively (Table 8.1).

Table 8.2. Curriculum components of the Bachelor's degree study program

	credit unit	(%)	ECTS cr-eq
Lectures	110	74.3	166.21
Practicals	35	23.7	52.89
Fieldwork	3	2.0	4.53
Total	148	100.0	223.63

For the profession program, the total study load of 37 sks (~55.91 ECTS credits) consisted of 29 sks (78.4%) core competencies and 8 sks (21.6%) supplementary competencies which are conducted within 47 weeks (Table 8.3).

Table 8.3. Curriculum structure and credit equivalence of profession's degree of veterinary medicine study program

No	Course Code	PPDH	Lecture	Practical	ECTS
1	MNH501	Veterinary and Aquatic Business Management	2	-	3.2
2	FAT501	Veterinary Therapeutics	2	-	3.2
3	ETH501	Veterinary Ethics and Animal Welfare	2	-	3.2
4	KHK570	Health System (One Health) and Animal Nursing	2	-	3.2
5	KHU501	Internship in Pathology	-	3	4.8
6	BIM501	Internship in Microbiology	-	3	4.8

7	BIM502	Internship in Parasitology	-	3	4.8
8	KMV501	Internship in Internship in Veterinary Public Health	-	4	6.4
9	BIR501	Internship in Reproduction		4	6.4
10	KKH501	Internship in Clinics		6	9.6
11	KLH502	Fieldwork practical of Large Animals, Poultry, and Teaching Farm		6	9.6
			8	29	55.91

Chapter 9

MODULE DESCRIPTION

Faculty of Veterinary Medicine offers 66 courses consisting of 59 compulsory and 7 elective courses for bachelor's program, and 11 compulsory courses/modules for profession's program. Some practical courses are incorporated with lectures into course modules, other than that, each module is related to one course. Sample modules are presented in Table 9.1. and Table 9.2 respectively for bachelor's and profession's study program.

Table 9.1 Module for Handbook of Veterinary Internal Medicine II

Modul Name	Veterinary Internal Medicine II (Small animals)
Modul Level	6 (Bachelor)
Abbreviation, if applicable	KHD402
Sub-heading, if applicable	
Courses included in the module, if applicable	
Semester/term	7/4
Module coordinator(s)	Dr. Wiwik Misaco Yuniarti, drh., M.Kes.
Lecturer(s)	1. Dr. Wiwik Misaco Yuniarti, drh., M.Kes. 2. Dr. Nusdianto Triakoso, M P., drh. 3. Prof. Dr. Bambang Sektiari L., drh., DEA
Language	Bahasa Indonesia and English
Classification within the curriculum	Compulsory/ elective course
Teaching format/class hours per week during the semester	2 class hour lecture (100 minutes lecture) and 1 class hour practical (100 minutes practical) x 14 weeks
Workload per semester	100 minutes lecture is divided into 50 minutes face to face interaction and 50 minutes independent study; 200 minutes practical is divided into 100 minutes hands on lab work and 100 minutes tutorial.
Credit points	3 (lecture 2/practical 1) (~4.53 ECTS)
Requirements	1. Veterinary Clinical Diagnosis 2. Veterinary Clinical Pathology
Learning goals/competencies	After completing Veterinary Internal Medicine II, students will be able to establish a diagnosis and handling of diseases of internal organs of dogs and cats properly and correctly.
Content	Veterinary Internal Medicine II teaches ways of obtaining history of disease, physical and laboratoric examinations, differentiate from other diseases that have same clinical

	features, establishing diagnosis and handling cases of diseases of internal organs in dogs and cats properly and correctly.
Softskills attribute	Team work, interpersonal communication, discipline, achievement motivation, analytical thinking.
Study/exam achievements	Quizzes, structured assignment, midterm exam, final exam, soft skill and practical reports. The mastery of the material is evaluated by a single or multiple choice, and causal test at the end of the lecture on each of the diseases of the respective system and after all the course materials have been completed.
Forms of media	Computer projector, white board, AULA (Airlangga University e-Learning Application)
Literatures	<ol style="list-style-type: none"> 1. Module of Veterinary Clinical Diagnosis. 1987. 2nd Edition. Volume I-V. 2. Module of Small Animal Internal Disease. Digestive, circulatory, respiratory, urinary, nervous and locomotor system, and skin, eyes and ears. 3. Leib MS, Monroe WE. 1997. Practical Small Animal Medicine. 1st Edition. W.B. Saunders Co. Philadelphia. pp. 351-354. 4. Ettinger J and Feldman EC. 1995. Textbook of Veterinary Internal Medicine. WB Saunders Company. 5. Tilley LP, Smith Jr FWK, MacMurray AC. 1997. The five minute Veterinary Consult: Canine and Feline. Williams & Wilkins. Baltimore. Maryland. USA. 6. Lorenz MD, Cornellus LM, Ferguson DC. 1991. Small Animal Medical Therapeutics. JB. Lippincott Company, Philadelphia.
Notes	Besides mandatory references, it will also be required for students to read a lot of literature or supporting articles in both Indonesian and English for the purposes of discussion and clinical case simulation.

Table 9.2 Module for Handbook of Internship in Veterinary Parasitology

Modul Name	Internship in Veterinary Parasitology
Modul Level	7 (Profession)
Abbreviation, if applicable	BIM502
Sub-heading, if applicable	
Courses included in the module, if applicable	
Semester	1
Module coordinator(s)	Dr. Poedji Hastutiek, drh., M.Si.
Lecturer(s)	<ol style="list-style-type: none"> 1. Dr. Mufasirin, drh., M.Si. (PJMK) 2. Dr. Poedji Hastutiek, drh., M.Si. 3. Prof. Dr. Setiawan Koesdarto, drh., MSc. 4. Prof. Dr. Nunuk Dyah Retno Lastuti, drh., MS. 5. Dr. Endang Suprihati, drh., MS. 6. Prof. Dr. Lucia Tri Suwanti, MP., drh. 7. M. Yunus, drh., M. Kes., PhD, 8. Dr. Kusnoto, drh., M.Si.
Language	Bahasa Indonesia and English
Classification within the curriculum	Compulsory
Teaching format/class hours per week during the semester	3 class hour internship (2400 minutes x 3 weeks)
Workload per semester	2400 minutes internship is divided into 2100 minutes of hands on laboratory work and 300 minutes discussion and evaluation.
Credit points	3 (~4.53 ECTS)
Requirements	-
Learning goals/competencies	After internship in Veterinary Parasitology, profession degree students will be able to diagnose diseases caused by parasites (protozoa, arthropod and worms) and able to explain the way of transmission, pathogenesis and clinical symptoms and control.
Content	Internship in parasitology is carried out for 3 weeks covering protozoology, helminthology and entomology. Diagnosis of protozoan diseases include 1. protozoa of the gastrointestinal tract with faecal examination, gastrointestinal tract dissection, throat and colon swab; special for coccidiosis in chickens necropsy and biological tests are performed; 2. blood protozoa including blood smear examination and special for leucocytozoonosis necropsy and and crushing visceral organs are performed and 3. Toxoplasmosis includes faecal

	<p>examination, brain compression test and biological test. The diagnosis of helminth infections, include gastrointestinal tract dissection for the identification of worms (native or camin stained), and faecal examinations (native, concentrated sedimentation, floatation). Collection of worms in wet media and permanent preparations. Examination of larvae and worm eggs from pasture. Calculation of worm eggs per gram of feces to determine the degree of infection. For diagnosis of arthropod disease caused by mites skin scrapping and identification under microscope are performed. Identification of disease-causing arthropods in livestock such as flea, ticks and lice is done by making permanent preparations with and or without staining, followed by microscopic examination. While the arthropod that acts as a vector of the disease such as fly and mosquito are identified macroscopically and pinned wet and dry preserved arthropod collection. Evaluation is done by observing at the ability of students in diagnosing parasitic diseases.</p>
Softskills attribute	Critical, analytical
Study/exam achievements	Comprehensive exam (practical 60% and theory 40%) including softskill
Forms of media	
Literatures	<ol style="list-style-type: none"> 1. Soulsby E.J.L. 1986. Helminth, Arthropods, and Protozoa of Domesticated Animals. 7thEd. Bailliere Tindall. London 2. Kusnoto, Koesdarto S, Subekti SB, Sosiawati SM. 2010. Textbook of Veterinary Helminthology. AUP Publisher. 3. Suwanti LT, Lastuti NDR, Suprihati E, Mufasirin. 2012. Module of Veterinary Protozoology. AUP Publisher. 4. Sasmita R, Hastutiek P., Sunarso A, Yunus M. 2013. Module of Veterinary Arthropods. AUP Publisher. 5. Hastutiek P, Sasmita R, Sunarso A, Yunus M. 2014. Module of Arthropod Disease. AUP Publisher. 6. Mufasirin, Suwanti LT, Lastuti NDR, Suprihati E. 2016. Module of Veterinary Protozoon Diseases. AUP Publisher. 7. Kusnoto, Koesdarto S, Subekti SB, Sosiawati, SM. 2017. Textbook of Veterinary Helminth Diseases Science. AUP Publisher.
Notes	

Chapter 10

INTERRELATION BETWEEN MODULE AND LEARNING OUTCOMES

For the achievement of the expected learning outcomes (specialized and social competences), of the bachelor's and profession's degree of veterinary medicine study program, support by the courses is needed (Table 10.1).

Table 10.1 Interrelation between module and learning outcomes indicating support for the achievement of learning outcomes of Veterinary Medicine study program

No	Course Code	Course Name	Learning Outcomes of the Bachelor's Degree of Veterinary Medicine										
			Specialized Competences							Social Competences			
			LO1	LO2	LO3	LO4	LO5	LO6	LO7	LO8	LO9		
General Scientific Skills													
1	AGI601	Islam									V		Professional Leader Manager Entrepreneur Researcher Life-long Learner
	AGP101	Protestantism											
	AGK101	Catholicism											
	AGH101	Hinduism											
	AGB101	Buddhism											
	AGC101	Confucianism											
2	AGI401	Applied Islam									V		Professional Leader Manager Entrepreneur Researcher Life-long Learner
	AGP401	Applied Protestantism											
	AGK401	Applied Catholicism											
	AGH401	Applied Hinduism											
	AGB401	Applied Buddhism											
	AGC401	Applied Confucianism											
3	NOP101	Civics Education									V		Professional Leader

												Manager Entrepreneur Researcher Life-long Learner
4	SOP101	Pancasila (State of Ideology)								V		Professional Leader Manager Entrepreneur Researcher Life-long Learner
5	BAE120	Indonesian Language								V		Professional Leader Manager Entrepreneur Researcher Life-long Learner
6	BIA101	Basic Veterinary Anatomy	V									Researcher
7	BIA201	Veterinary Topography Anatomy	V									Researcher
8	BIA301	Applied Anatomy and capita selecta	V									Researcher
9	BIK101	Lecture of Veterinary Biochemistry				V						Professional Manager
10	BIK102	Practical of Veterinary Biochemistry				V						Professional Manager
11	BIP101	Veterinary Embryology	V									Researcher Life-long learner
12	KHR101	Introduction to Veterinary Science	V									Researcher Life-long learner
13	KHU101	Lecture of Veterinary Physiology	V									Researcher Life-long

												learner
14	KHU102	Practical of Veterinary Physiology	V									Researcher Life-long learner
15	BIA 102	Lecture of Veterinary Histology	V									Researcher Life-long learner
16	BIA 104	Practical of Veterinary Histology	V									Researcher Life-long learner
17	PHH101	Philosophy of Science						V				Researcher Entrepreneur
18	FAT401	Veterinary Pharmacology				V						Researcher Manager Entrepreneur
19	BIM105	Bacteriology and Mycology		V								Professional Researcher Entrepreneur
20	BIM201	Virology		V								Professional Researcher Entrepreneur
21	BIM204	Veterinary Parasitology		V								Professional Researcher Entrepreneur
22	PNH496	Basic Research Methodology						V				Professional Entrepreneur Manager
23	PNH497	Advanced Research Methodology						V				Professional Entrepreneur Manager
24	KKV420	KKN-BBM (fieldwork)									V	Professional Leader Manager

												Entrepreneur Researcher Life-long Learner
25	MNW101	Entrepreneurship						V				Professional Entrepreneur Manager
26	KLV301	Veterinary Counseling									V	Professional Leader Manager Entrepreneur Researcher Life-long Learner
27	HKD102	Veterinary Legislation			V							Professional Leader Manager Entrepreneur Life-long Learner
Specific Scientific Skills												
1	NUV101	Animal Feed and Nutrition Science						V				Professional Leader Manager Entrepreneur
2	KHR102	Ruminant Science			V				V			Professional Manager
3	KHR 103	Poultry and Non-ruminant sciences			V				V			Professional Manager
4	KHT301	Animal Feed Technology						V				Professional Manager
5	BIG102	Animal Genetics						V				Professional

													Researcher Professional Manager Life-long Learner
6	FAT402	Veterinary Pharmacotherapy and Toxicology				V							Researcher Professional Manager Life-long Learner
7	KHD201	Bacterial and fungal diseases		V									Professional Researcher Life-long Learner
8	KHD202	Viral disease		V									Professional Researcher Life-long Learner
9	KHU103	General Veterinary Pathology		V									Professional Researcher Life-long Learner
10	BIR 201	Lecture of Physiology and Technology of Reproduction					V						Professional Researcher Manager Life-long Learner
11	BIR102	Practical of Physiology and Technology of Reproduction					V						Professional Researcher Manager Life-long Learner
12	KHD205	Parasitic Disease	V										Professional Researcher Life-long Learner
13	KHD401	Veterinary Clinical Diagnosis							V				Professional Researcher Life-long Learner

												Learner
14	KHD303	Poultry Health Management			V							Professional Manager
15	FAF300	Veterinary Pharmacy Science				V						Professional Researcher Manager Life-long Learner
16	KHU104	Veterinary Systemic Pathology		V								Professional Researcher Life-long Learner
17	KMV301	Veterinary Public Health			V							Professional Researcher Manager Life-long Learner
18	KMV302	Health of Foods of Animal Origin			V							Professional Researcher Manager Life-long Learner
19	MNG401	Hazard Analysis and Critical Control Points			V							Professional Researcher Manager Life-long Learner
20	KHD304	Aquatic Animal Health Science/Diseases			V							Professional Researcher Manager Life-long Learner
21	KHB401	Veterinary General Surgery							V			Professional Researcher

												Life-long Learner
22	KHD301	Large Animals Internal Medicine		V		V			V			Professional Researcher Manager Life-long Learner
23	KHD402	Small Animals Internal Medicine		V		V			V			Professional Researcher Manager Life-long Learner
24	KHD302	Zoonosis			V							Professional Researcher Life-long Learner
25	FIN401	Radiology							V			Researcher
26	BII101	Immunology		V								Professional Researcher Life-long Learner
27	MNH401	Management of Experimental Animals					V					Professional Leader Manager Entrepreneur Researcher Life-long Learner
28	MNS401	Health Management of Dairy Cattle						V				Professional Leader Manager Entrepreneur
29	MNS402	Management of Horses, Dogs and						V				Professional

		Cats										Leader Manager Entrepreneur
30	LKM405	Environmental Health			V							Professional Leader Manager Researcher
31	KHB402	Veterinary Special Surgery							V			Professional Leader Manager
32	KHU401	Veterinary Clinical Pathology		V								Professional Researcher
33	KHO401	Lecture of Obstetrics and Infertility							V			Professional Leader Manager Researcher
34	KHO402	Practical of Obstetrics and Infertility							V			Professional Leader Manager Researcher
35	KME417	Veterinary Epidemiology and Economics			V							Professional Leader Manager Researcher
36	LKM106	Wild Animal		V	V							Professional Leader Manager Researcher

												Life-long Learner
37	PKA401	Veterinary Acupuncture							V			Professional
38	KUH401	Veterinary Forensic							V			Professional
39	KHL421	Bioproduct, Biosafety and Biosecurity			V							Professional Leader Manager Researcher Entrepreneur
40	PNH498	Seminar									V	Professional Leader Manager Entrepreneur Researcher Life-long Learner
41	PNH499	Thesis									V	Professional Leader Manager Entrepreneur Researcher Life-long Learner

No	Course Code	Course Name	Learning Outcomes of the Profession Degree of Veterinary Medicine			
			LO10	LO11	LO12	
1	MNH501	Veterinary and Aquatic Business Management	V			Professional Manager
2	FAT501	Veterinary Therapeutics	V			Professional
3	ETH501	Veterinary Ethics and Animal Welfare			V	Professional
4	KHK570	Health System (One Health) and Animal Nursing		V	V	Professional

5	KHU501	Internship in Pathology	V			Professional Manager Researcher
6	BIM501	Internship in Microbiology	V			Professional Manager Researcher
7	BIM502	Internship in Parasitology	V			Professional Manager Researcher
8	KMV501	Internship in Veterinary Public Health		V		Professional Manager
9	BIR501	Internship in Reproduction	V			Professional Manager
10	KKH501	Internship in Clinics	V			Professional Manager
11	KLH502	Fieldwork practical of Large Animals, Poultry, and Teaching Farm	V			Professional Manager Entrepreneur

Chapter 11

LEARNING MODEL AND MEDIA

LEARNING MODEL

Learning models applied in study program of Veterinary Medicine include

- lectures (small class lectures, large class lectures, and guest lecture by visiting expert)
- tutorials (in the form of journal reading, presentation, discussion, bedside teaching; tutorials are carried out as a consolidation or deepening of lecture materials)
- demonstration
- practicals
- supervised clinical practice
- duty shift
- fieldwork (KKN/PKL) is activity to gain field experience as well as to view and apply the theories acquired during the lecture.
- Student exchange (UPM-Malaysia; Kasetsart University-Thailand; Chun Shin Taiwan).

LEARNING MEDIA

The media used in bachelor's and profession study program include

Printed media (handouts, modules, reference books, practical manual and text book)

Electronic media (use of multimedia such as intranet (PowerPoint or other microsoft office programs), internet, e-learning, e-book, multiplayer (video, audio), clinical case solving software, for both large and small animals, video of various techniques and surgical procedures on large and small animals.

E-learning recently the university provide AULA (Airlangga University e-Learning Application), a website that manages and provides service to support information technology based learning. AULA is easily accessed from student computers or private laptops which enable anytime and anywhere learning.

Model

Model of equipments such as equipments for reproductive technology (Artificial Insemination equipment, embryo transfer equipment), obstetric equipments, animal feeding equipment, equipments for frozen semen production.

Live animal model such as female cows for practical of animal handling, taking vital measurements, blood samples, rectal explorations and artificial insemination.

Body organs model in the form of complete female reproductive organs for rectal palpation, intra uterine and artificial insemination, lumbar vertebrae model for anesthesia practice
Practical tools and materials used for practical and demonstration include microscopes, experimental animals, wet/dry preparations, and dummy. Animal phantoms are also used for practical in radiology positioning and fetal dystocia cases.

Chapter 12

ASSESSMENT OF STUDENT LEARNING OUTCOMES

The university guideline for the assessment of learning outcomes involves methods of assessment, including:

1. **Assignment**
Task given by lecturer on specific topics
2. **Quiz**
A test used to assess students' preparation and/or comprehension of specific learning outcome
3. **Pre and Post Test**
Tests that are performed at the beginning and the end of class to measure students' comprehension
4. **Working Report**
A report that must be submitted after conducting a series of activities or experiments
5. **Mid and End Semester Examination**
Assessment to measure students' performance of the learning outcome
6. **Seminar**
An activity in which students present their learning on specific topic and discuss it with other students
7. **Soft Skills Assessment**
An assessment of students' soft skills using rubric, checklist, observation, and etc.
8. **Product Quality**
The quality of product created by students based on tasks assigned by lecturer
9. **Etc.**

Assessment at course-level is carried out using instruments such as rubrics, MCQ, essay, and oral presentation. Each topic is weighed based on their contribution to the related learning outcomes. Thus, the final grade is obtained by considering this proportion. Classification of final grade is listed in following table:

0 – 100 Scale	Letter Grades	Quality Index
≥ 75.0	A	4
70.0 – 74.9	AB	3.5
65.0 – 69.9	B	3
60.0 – 64.9	BC	2.5
55.0 – 59.9	C	2
40.0 – 54.9	D	1
< 40.0	E	0