

CURRICULUM DESCRIPTION BACHELOR IN VETERINARY MEDICINE

(Followed/To be enclosed/ by the Decision No. 1728/QĐ-KT & ĐBCLGD dated December 31st , 2016 issued by Rector of Thai Nguyen University of Agriculture and Forestry)

1. General information

Major in: Veterinary medicine

Training level: Undergraduate

Bachelor's degree of veterinary medicine

Training time: 4.5 years

Training Forms: full time

2. Training Objective

- Training bachelor of veterinary medicine to meet the social demand in science and technology development in field of veterinary medicine
- Providing the workforce of highly professional skill, good health, good ethics and being able to reach further studies.

3. Expected learning outcomes (ELOs)

3.1. Knowledge requirement

After graduation, the bachelors of veterinary medicine will be able to gain the following knowledge requirement

- Applying the basic principles of Marxism-Leninism; the revolutionary way of the Communist Party of Vietnam; Ho Chi Minh Thought. Basic knowledge in the fields of natural sciences, social sciences and humanities, international economic integration suitable to solve theoretical, practical, professional
- Understanding and applying basic knowledge in zoology, veterinary physiology, veterinary anatomy, veterinary pathology, veterinary microorganisms to diagnose, testing and veterinary medicine activities;
- Applying the knowledge in pharmacology, pharmacognosy, toxicology, immunology to set up the measure prevention and control livestock diseases;
- Applying the knowledge in veterinary infectious diseases, veterinary parasitic diseases, veterinary, veterinary internal medicine diseases, veterinary surgery diseases, veterinary obstetrics diseases to diagnose, develop disease prevention and treatment procedures for livestock;
- Making use of the knowledge including: veterinary epidemiology, veterinary hygienics, food safety, livestock products quarantine, farm environmental sanitation to protect public health

- Applying major knowledge to analyse, summarise and solve cases in field of veterinary medicine
- Having knowledge of trade in animal feed, veterinary pharmacies, livestock breeding and animal products.
- Applying knowledge to set up experiments or researches on veterinary medicine problem and being able to create and develop career in the future.

3.2. Skills

After graduation, the bachelors of veterinary medicine will be able to gain the following skills

3.2.1. Professional skills

- Being able to apply major knowledge to practical production
 - + Being able to give professional consult and be proficient in clinical manipulations including: collectional blood sample, clinical diagnosis, prevention and treatment in livestock diseases.
 - + Being able to proficiently perform nonclinical tests in the diagnosis of animal diseases.
- + Being able to use modern technical diagnosis methods in field of veterinary medicine.
 - + Being able to use proficiently pharmaceutical materials in preventing and treating infectious disease in livestock
 - + Planning and applying information technology, professional consultancy, transfer scientific technology in field of infectious veterinary medicine, organize, manage and trade veterinary drugs.
- Applying knowledge to simulate, model, estimate amplitude margins, limits, and generalize specialized issues
 - Being able to summarise and analyse indefinite factors which are relevant to the career such as: profit accounting, social situation, risk factors, disadvantage information...in field veterinary medicine
 - Having the ability to set up experiments or researches on veterinary medicine problem and being able to create and develop career in the future.

3.2.2. Soft skills

- Being able to establish and manage teamwork effectively. Having leadership skill
- Being able to exchange, share, engage, collaborate with team members and to get things done
- Being able to make choices and expand market development to meet particular issue
- Being able to identify background and object to make a suitable way of communication.
- Being able to use multimedia communication proficiently to collaborating and working in community.

- Having a computing certification level B and using competently in microsoft: Minitab, SAS, ANOVA, SPSS

- English Level; TOEIC 350

3.3. Attitude and moral competency

- Having a confident standpoint, a good discipline consciousness, a good understanding of moral worth and professional worth, having responsibility to the country.

- Being able to confidently cope with difficulties to become expert in the field. Being able to set up a scientific working time to improve the effectiveness of the career

- Being able to work independently to get new knowledges, new techniques.

- Having good health for working.

- Having serious study attitude, accumulating knowledge and experience actively, having professional ethics and love for animals.

4. The amount of knowledge students need to accumulate

150 credits without physical education and national defence education

5. Candidates: High school students satisfying requirements of university admission regulations promulgated by the Ministry of Education and Training.

6. Training process, grading scales and graduating conditions

Training process, grading scales and graduating conditions are performed according to university training regulations by credit point system followed by the Decision No. 43/2007/QĐ-BGD&ĐT that are concretized by the Decision No.756/QĐ-ĐT dated August 21st, 2013 issued by Rector of Thai Nguyen University of Agriculture and Forestry)

7. Curriculum

List	Subject in Vietnamese	Subject in English	Credit point	Theoretical hours	Practical hours	Subject code
A. Kiến thức giáo dục đại cương		Foundation Knowledge	48			
I. Các học phần bắt buộc		Compulsory subjects	38			
a) Lý luận chính trị		Polictice Science	10			
1	Nguyên lý 1 (Triết học Mác- Lênin)	Fundamental Principles 1 (Phylosophy)	2	30	-	MLP121
2	Nguyên lý 2 (Kinh tế chính trị và CNXHKH)	Fundamental Principles 2 (Political economics and scientific socialism)	3	45	-	MLP132
3	Đường lối cách mạng của Đảng cộng sản Việt Nam	Revolutionary Roads and Policies of Vietnamese Communist Party	3	45	-	VCP131

4	Tư tưởng Hồ Chí Minh	Ho Chi Minh's thought	2	30	-	HCM121
<i>b) Ngoại ngữ, Tin học, Khoa học tự nhiên, xã hội</i>		<i>Foreign language, Informatic, Natural and Social Science</i>	28			
5	Hóa học	Chemistry	2	25	10	CHE121
6	Hóa phân tích	Analysing Chemistry	2	25	10	ACH121
7	Sinh học	General Biology	2	25	10	GBI121
8	Toán cao cấp 1	Mathematics 1	2	30	-	MAT121
9	Xác suất- Thống kê	Probability and Statistics	3	45	-	PST131
10	Tiếng Anh 1	English 1	3	45	-	ENG131
11	Tiếng Anh 2	English 2	2	30	-	ENG122
12	Tiếng Anh 3	English 3	2	30	-	ENG123
13	Tiếng Anh 4	English 4	3	45	-	ENG134
14	Tin học đại cương	General Informatics	3	30	30	GIN131
15	Xã hội học đại cương	General Sociology	2	30	-	GSO121
16	Nhà nước và Pháp luật	State Law	2	30	-	SLA121
II. Các học phần tự chọn (tích lũy đủ 12 TC)		Optional subjects	10			
17	Phương pháp tiếp cận khoa học	Scientific Approach Methodology	2	30	-	SAM121
18	Soạn thảo văn bản	Text Editing	2	15	30	PVL121
19	Sinh thái môi trường	Environmental Ecology	2	30	-	EEC121
20	Động vật học	Zoology	2	30	-	ZOO221
21	Vi sinh vật đại cương	General microorganism	2	26	8	GMO221
22	Tiếng Anh chuyên ngành thú y	Specific English for Animal husbandry	2	30	-	EVM121
23	Sinh học phân tử	Molecular Biology	2	30	-	MBI121
24	Vật lý	Physics	2	30	-	PHY121
25	Toán ứng dụng	Special Mathematics	2	30	-	AMA121
26	An toàn vệ sinh lao động	Works Safety and Hygenic	2	30	-	WSH121
27	Ô nhiễm Môi trường	Environmental Pollution	2	30	-	EPO121
28	Địa lý kinh tế Việt Nam	Vietnam Economic Geography	2	30	-	VEG121
III. Giáo dục thể chất*		Physical Education	3			

29	Giáo dục thể chất 1: Thể dục	Physical Education 1: Gymnastics	1	9	42	PHE111
30	Giáo dục thể chất 2: Bóng chuyền	Physical Education 2: Volleyball	1	9	42	PHE112
31	Giáo dục thể chất 3: Bóng đá	Physical Education 3: Football	1	9	42	PHE113
IV. Giáo dục quốc phòng*		National Defense Education	165			
B. Kiến thức giáo dục chuyên nghiệp		Professional Knowledge	102			
I. Kiến thức cơ sở ngành		Basic Knowledge	34			
a) Các học phần bắt buộc		Compulsory subjects	25			
32	Hoá sinh đại cương	General biochemistry	2	24	12	GBC221
33	Giải phẫu động vật	Anatomy of domestic animals	3	39	12	ADA231
34	Tổ chức và phôi thai học	Histology and embryology of animal	2	26	8	HEA221
35	Sinh lý động vật	Animal Physiobiology	3	39	12	APH231
36	Dinh dưỡng và thức ăn chăn nuôi	Animal nutrition	3	37	16	ANU221
37	Dược lý học	Pharmacology	3	39	12	PHA221
38	Miễn dịch học thú y	Immunology of veterinary	2	26	8	IVE221
39	Độc chất học thú y	Veterinary Toxicology	2	28	4	VTO321
40	Chẩn đoán bệnh thú y	Diagnosis of Animal Diseases	3	39	12	DAD331
41	Vi sinh vật thú y	Veterinary Microorganism	2	24	12	VMO221
b) Các học phần tự chọn (tích lũy đủ 9TC)		Optional subjects	9			
42	Dịch tễ học thú y	Veterinary Epidemionogy	2	30	-	VEP321
43	Bệnh lý học thú y	Veterinary pathophysiology	3	39	12	VPP331
44	Di truyền động vật	Animal genetics	2	30	-	AGE221
45	Công nghệ sinh sản	Technology in Animal Reproduction	2	26	8	TAR321
46	Chọn và nhân giống vật nuôi	Animal selecting and propagating	3	39	12	ASP331
II. Kiến thức ngành		Special Knowledge	45			

a) Các học phần bắt buộc		Compulsory subjects	25			
47	Bệnh truyền nhiễm thú y	Veterinary infectious diseases	4	52	16	VID341
48	Ký sinh trùng và bệnh ký sinh trùng thú y	Parasite and veterinary parasitology	4	52	16	PVP341
49	Bệnh nội khoa thú y	Veterinary Internal Disease	4	52	16	VID342
50	Kiểm nghiệm thú sản	Animal Products Inspection	3	39	12	API321
51	Ngoại khoa thú y	Veterinary external Disease	3	39	12	VED331
52	Sản khoa thú y	Veterinary post-natal diseases	3	39	12	VPD331
53	Bệnh truyền lây giữa động vật và người	Zoonosis	2	26	8	ZOO321
54	Bệnh ở chó mèo	Desease in smal animals	2	26	8	DSA321
b) Các học phần tự chọn (tích lũy đủ 20 TC)		Optional subjects	20			
55	Chăn nuôi chuyên khoa	Special Animal Husbandry	4	54	12	SAH341
56	Bào chế và kiểm nghiệm thuốc thú y	Prepare and inspection veterinary medicine	2	30	-	PIM321
57	Công nghệ sản xuất và sử dụng vắc xin	Vaccine Application and Production Technology	2	30	-	PIM321
58	Dược liệu	Pharmacological Materials	2	30	-	VAP321
59	Luật Thú y	Veterinary Laws	2	30	-	VLA311
60	Vệ sinh chăn nuôi	Hygiene in animal husbandry	2	30	-	HAH321
61	Bệnh ở động vật thủy sản	Aquatic pathology	2	30	-	APA331
62	Bệnh dinh dưỡng		2	30	-	
63	Quyền lợi động vật	Animal welfare	2	30	-	ANW321
64	Chẩn đoán hình ảnh	Imaging Diagnosis	2	30	-	IDI321
65	Bệnh ở động vật hoang dã	Desease in wildlife	2	30	-	
66	Châm cứu chữa bệnh vật nuôi	Acupuncture for treatment in domestics	2	30	-	ATD321
67	Chăn nuôi động vật quý hiếm	Value Animal Husbandry	2	30	-	VAH321

68	Chăn nuôi cá nước ngọt	Fresh Water Fish Breeding Techniques	2	30	-	FFT321
III. Kiến thức bổ trợ		Extral Knowledge	6			
69	Vệ sinh an toàn thực phẩm	Food safety and Hygence	2	30	-	FSH321
70	Một sức khỏe	One health	2	30	-	ONH321
71	Phương pháp thí nghiệm (CNTY)	Exprimental Methods in Animal Husbandry	2	30	-	EMA321
IV. Thực tập nghề nghiệp		Professional practice	7			
72	TTNN 1: Chẩn đoán xét nghiệm (VSV, GPB)	Internship training 1: Diagnosis and test (microoganism, desease anatomy)	2	-	120	VME421
73	TTNN 2: Tiêm phòng chống dịch	Internship training 2: Injection and disease prevention for animal	4	-	240	VME442
74	TTNN 3: Tiếp cận công nghệ sản xuất thuốc thú y, vắc xin	Internship training 3: Veterinary Drugs and Vaccine Productive Technology Approach	1	-	60	VME413
75	Thực tập tốt nghiệp	Thesis	10	-	600	VME906
V. Rèn nghề		Skilled Practice	5			
76	Rèn nghề 1: kỹ năng phòng thí nghiệm	Skilled practice 1: Laboratory skilleds	2	-	120	SVM421
77	Rèn nghề 2: Quản lý, phát hiện, chẩn đoán và điều trị bệnh cho lợn	Skilled practice 2: Management, discovery, diagnosis and treatment deseases for pig	1	-	60	SVM412
78	Rèn nghề 3: Quản lý, phát hiện, chẩn đoán và điều trị bệnh cho gia cầm	Skilled practice 3: Management, discovery, diagnosis and treatment deseases for poultry	1	-	60	SVM413
79	Rèn nghề 4: Quản lý, phát hiện, chẩn đoán và điều trị bệnh cho gia súc nhai lại	Skilled practice 4: Management, discovery, diagnosis and treatment deseases for ruminant	1	-	60	SVM414
Tổng cộng		Total	150	2252	1796	

Note::

- Subjects of physical education, national defence education and practice experience in animal production and in laboratory are not counted in program credit point

- A credit = 15 theoretical hours = 30 practical hours = 60 internship hours in farm (equivalent to 1 week of off-field training)

8. Teaching schedule

1. The first year

*. The first semester

List	Subject	Credit point	Theoretical hours	Practical hours
1	Phylosophy 1	2	30	-
2	Chemistry	2	25	10
3	Biology	2	25	10
4	Mathematics 1	2	30	-
5	Probability and Statistics	3	45	-
6	English 1	3	45	-
7	General Sociology	2	30	-
8	Physical Education 1	1	9	42
	Total	17	239	62

*. Second semester

List	Subject	Credit point	Theoretical hours	Practical hours
1	Analysing Chemistry	2	25	10
2	Phylosophy 2	3	45	-
3	English 2	2	30	-
4	General Informatics	3	30	30
5	Document editing	2	15	30
6	State Law	2	30	-
7	Environmental Ecology	2	30	-
8	Physical Education 2: Volleyball	1	9	42
9	National defence education (165 hours = 5 weeks)	-	-	-
	Total	17	214	112

2. Second year

*. Third semester

List	Subject	Credit point	Theoretical hours	Practical hours
1	Zoology	2	30	-
2	General microorganism	2	26	4
3	General biochemistry	2	24	6

4	Animal anatomy	3	39	6
5	Animal physiology	3	39	6
6	Animal nutrition	3	37	8
7	Physical Education 3: Football	1	9	42
	Total	16	234	72

***. Fourth semester**

List	Subject	Credit point	Theoretical hours	Practical hours
1	Animal histology and embryology	2	26	4
2	Pharmacology	3	39	6
3	Veterinary immunology	2	26	4
4	Animal genetics	2	30	-
5	Veterinary diseases diagnosis	3	39	6
6	Veterinary microorganism	2	24	6
7	Practical experiment 1: Laboratory	2	-	60
	Total	16	184	86

3. Third year

***. Fifth semester**

List	Subject	Credit point	Theoretical hours	Practical hours
1	Veterinary pathology	3	39	6
2	Veterinary Toxicology	2	28	2
3	Veterinary Internal medicine Disease	4	52	8
4	Veterinary infectiuos diseases	4	52	8
5	Internship 1: Not-clinical (in laboratory)	2	-	60
	Total	15	171	84

***. Sixth semester**

List	Subject	Credit point	Theoretical hours	Practical hours
1	Veterinary parasitic diseases	4	52	8
2	Veterinary epidemionogy	2	30	-
3		2	30	-
4	Zoonosis	2	26	4
5	Internship 2: Vaccination, prevention and control disease (field trip)	4	-	240
	Total	14	138	252

4. Fourth year

***. Seventh semester**

List	Subject	Credit point	Theoretical hours	Practical hours
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1	One death	2	30	-
2	Small animals diseases	2	26	4
3	Veterinary surgical diseases	3	39	6
4	Aquatically animal diseases	2	30	-
5	Nutritional animal diseases	2	30	-
6	Veterinary obstetrical diseases	3	39	6
7	Practical experiment 2: Management, diagnosis and treatment in pig diseases (pig farm)	1	-	60
8	Practical experiment 3: Management, diagnosis and treatment in poultry diseases (poultry farm)	1	-	60
9	Practical experiment 4: Management, diagnosis and treatment in ruminant diseases (ruminant farm)	1	-	60
	Total	17	188	196

***. Eighth semester**

List	Subject	Credit point	Theoretical hours	Practical hours
1	Experimental methods in animal production	2	30	-
2	Hygiene in animal production	2	28	2
3	Special animal production	4	54	6
4	Vaccine production technology and vaccination	2	30	-
5	Animal reproductive technology	2	26	4
6	Animal productive quarantine	3	39	6
7	Internship 3: Approaching veterinary drug and vaccine productional technology (Field trip in Pharmacy company)	1	-	60
	Total	16	207	78

5. Fifth year

***. Ninth semester**

List	Subject	Credit point	Theoretical hours	Practical hours
1	Animal welfare	2	30	-
2	Pharmacological Materials	2	30	-
3	Veterinary Laws	2	30	-
4	Hygiene and food safety	2	30	-
5	Pharmaceuticals and quarantine method in veterinary drug	2	30	-

6	The revolutionary way of the Communist Party of Vietnam	3	45	-
7	Ho Chi Minh's thought	2	30	-
	Total	15	527	0

***. Tenth semester**

List	Subject	Credit point	Theoretical hours	Practical hours
1	Thesis	10	-	600
	Total	10	-	600

9. Subjects dicrible

1. *Phylosophy 1 (Marx-Lenin's principles): 2 credit points*

Time distribution : 2 credit points (30 theoretical hours /0 practical hours/60 sefl-study)

Summary of the subject: This module equips students with knowledge of the most common laws of movement, the development of nature and society to form the most common worldview and methodology for scientific perception and revolutionary action.

Course content includes:

section I: Summary of philosophy and philosophical history

Chapter 1: Summary of philosophy

Chapter 2: Summary of philosophical history in pre- Marx's philosophy

Chapter 3: Establishing and development of Marx-Lenin philosophy

Chapter 4: Some modern philosophical ideas of Europe

Content II: The basic principles of Marx -Lenin philosophy

Chapter V: Materialism and ideology

Chapter VI: Two principles of dialectical materialism

Chapter VII: Basic categoricalm pairs of dialectical materialism

Chapter VIII: Basic laws of dialectical materialism

Chapter IX: The argument of ideaology

Chapter X: Economical – Social morpholohy

ChapterXI: Class and nation

Chapter XII: State and socialist revolution

Chapter XIII: Socialist ideaology

Chapter XIV: Marx-Lenin philosophy point of view about human

2. *Philosophy 2 (Marx-Lenin's principles): 3 credit points*

Time distribution : 3 credit points (45 theoretical hours /0 practical hours/90 sefl-study)

Summary of the subject: This subject has 2 main sections including: (1) political economy, (2) scientific socialism. Political economy is a field of social science studying the production and trade of goods under a political's view. This section provides concepts and basic knowledge system of supplying and demanding, profits, free trade... Many views of different political economy principles have become the ideological creeds of economists and

politicians.. (2) Scientific socialism equips the knowledge of Theoreticalin economy-politices – society by KacMarx – Engles thought. This course is one of the three components of Marxism-Leninism, studying the social movement to abolish capitalism and build a socialist society, towards building a communist society. In a narrow sense, scientific socialism is one of the three parts of Marxism-Leninism.

3. Revolutionary way of the Communist Party of Vietnam: 3 credit pionts

Time distribution : 3 credit points (45 theoretical hours /0 practical hours/90 sefl-study)

This section equips students with basic understanding about the establishment and development of the Communist Party of Vietnam, the lead of Communist Party in revolution, the planning and determining revolution Vietnam's guidelines in order to draw valuable lessons in practice. Especially, this section provides the profound understanding of Communist Party of Vietnam's guidelines in a period of national industrialization and modernization with a socialist orientation in fields of: politics, economic, sociocultural, foreign relations.

4.Ho Chi Minh's thought: 2 credit points

Time distribution : 2 credit points (30 theoretical hours /0 practical hours/60 sefl-study)

This section provides students with the basic knowledge of the foundation and the forming process of Ho Chi Minh's thought, Ho Chi Minh's ideology about the revolutionary of Vietnam. This section elucidates Ho Chi Minh' thought to the nation's revolutionary cause when approaching and solving agrumental revolutionary problems.

5. Chemistry : 2 credit points

Time distribution : 2 credit points (30 theoretical hours /0 practical hours/60 hours sefl-study)

This section includes 6 chapters (50 Theoreticalhours and 10 practical hours). The theory equips students with the basic knowledge of chemical balance, solution, qualitative analysis, quantitative analysis. The practice equips students with the experiment in factors of chemical balance, quantification pH values of common solution.

6. Analysing Chemistry: 2 credit pionts

Time distribution: 2 credit points (25 theoritical hours/10 practical hours/ 60 hours self – study)

This subject provides students basic concept of analysing chemistry, qualiative analysis ethods, quantitative analysis methods including: analysing quantity methods, analysing volume methods.

7. Biology: 2 credit pionts

Time distribution: 2 credit points (25 theoritical hours/10 practical hours/ 60 hours self – study)

This section includes 7 chapters. The theoretical part provides students basic knowledge of the chemical composition of living organism, histological levels, cell metabolism, reproduction. Growth and development of living organisms, ability to induce and adapt to the living environment of organisms, the evolution of organisms, the application of Biology in

agriculture and forestry. The practical section provides the basic laboratory rules; research and practice to make live plant specimens; observing some fixed specimens of animal cells; Visually observe reproductive organs of some flowers; Observe and classify a number of results to actualize the theoretical content to help learners inculcate knowledge.

8. Advanced Math - 2 credit points

Time distribution : 2 credit points (30 theoretical hours /0 practical hours/60 hours sefl-study)

Advanced Math includes 3 chapters with 17 theoretical hours and 13 discussion hours.

- Theoretical part: concepts of matrices, matrix operations, application of matrices in real problems; system of linear equations (mathematical physics), how to solve the system of mathematical equations; differential equations (PTVP), different types of differential equations and some applications of differential equations; some optimal mathematical types in agriculture and forestry and methods to solve the optimal problem. Discussion part: Students are required to apply learned methods to solving problems, especially proficient in using software (Excel) on the machine to solve problems of matrices, mathematical systems and optimal math.

9. Probability - Statistics - 3 credit points

Time distribution : 3 credit points (45 theoretical hours /0 practical hours/90 hours sefl-study)

The Probability includes 2 parts: Probability and statistics provide students 27 theoretical hours and 18 discussion hours. Theoretical part: Equip students with knowledge of trial, event, probability of events; random variables (BNN), probability distribution laws and characteristic parameters of BNN; sample population, sample characteristic parameters and calculation; parameter estimation; parameter testing; correlation and regression. Discussion: students are asked to calculate the probabilities of events through the formulas; determine the probability distribution law and calculate the characteristic parameters of work-related diseases; Proficient in solving estimation problems, testing parameters, finding correlation coefficients and writing regression equations of two random variables.

10. English 1-3 credit points

Time distribution : 3 credit points (45 theoretical hours /0 practical hours/90 hours sefl-study)

This section provides students basic and core knowledge of English Grammar (sentence structure, verb tense...), Phonetics (stress & intonation), and Vocabulary (words& word foundation); Initially forming language communication skills such as Listening, Speaking, Reading, and Writing. Helping students to understand the basic concept of the relationship between language and culture together with verbal communication.

11. English 2: 2 credit points

Time distribution : 2 credit points (30 theoretical hours /0 practical hours/60 hours sefl-study)

This section includes:

- The concepts of countable nouns and uncountable nouns; words indicating quantity, articles; future tense with be going to, will; present continuous tense refers to the near future; prepositions for place; present perfect; relative clauses and first conditional sentences. –

- Vocabulary: words for materials; linking words; synonym; words for careers; suffixes; prefix.

- Knowledge of the environment; life; event; Workplace; exploration, environment; plans; job interview; the importance of technology; new invention, presentation report; interview.

12. English 3: 2 credit points

Time distribution : 2 credit points (30 theoretical hours /0 practical hours/60 sefl-study)

This section provides students the knowledge of passive sentences (present and past); past perfect tense; used to, reported speech; non-defining pronouns; 2nd conditional sentence; verb phrases; words related to holiday; prepositions; animals classification; weather; knowledge of history, language; travel and vacation; nature

13. English 4-3 credit points

Time distribution : 3 credit points (45 theoretical hours /0 practical hours/90 hours sefl-study)

This section equips students with basic and core knowledge of Grammar (sentence structure, verb tense ...), Phonetics (stress & intonation), and Vocabulary (words & word foundation); Initially forming language communication skills such as Listening, Speaking, Reading, and Writing. Helping students to understand the basic concept of the relationship between language and culture together with verbal communication

Grammar: Passive sentences (present and past); Past Perfect Tense; Used to... Structure; reported speech; non-defining pronouns; 2nd conditional sentence;

Vocabulary: verb phrases; words related to holiday; prepositions; animals classification; weather.

Reading: history; language; travel and vacation; nature.

Listening: learning languages; travel; nature.

Speaking: vacation planning; future prediction

Writing letter; story.

Pronunciation: sound / s /, / z /, / stress.

After completing this subject, students will be able to communicate, write and read in English at pre-intermediate level.

14. General informatics - 3 credits

Time distribution: 3credit points (30 theoretical hours/30 practical hours/ 90 hours self – study)

This section equips students with knowledge of computers and computer networks, provides students skills to use basic informatics applications. After completing this subject, students will be able to use computers, work on Windows operating systems and some application programs to support learning and researching

15. General Sociology - 2 credits

Time distribution: 2 credit points (30 theoretical hours/0 practical hours/ 60 hours self – study)

The General Sociology subject is a compulsory subject. The subject is aimed to equip students with basic knowledge of sociology, including: subjects, functions, tasks of sociological researches; Basically sociological concepts. Based on the basic concepts, students can understand the relationships between individuals, groups and society; the role of individuals, social groups, institutions, social organizations, classes and social classes in a society. Based on that knowledge, educating students about socio-professional ethics in the construction of our country today.

16. State and Law: 2 credits

Time distribution: 2 credit points (30 theoretical hours/0 practical hours/ 60 self – study)

This section includes 10 chapters. Chapter 1: introduces the basic knowledge of state such as: the origin of the state, the concept of the state, form, types of the state and types of states in history. Chapter 2 provides students with basic knowledge of laws such as: normative laws, essential, characteristic and role of law, law implementation, law violation, liability, socialist legislation. Chapter 3 introduces Vietnam's legal system including structure of Vietnam's law system, number of legal branches in the Vietnamese legal system. Chapter 4 to chapter 8 equips students with the knowledge of the number of independent and important legal branches in the Vietnamese legal system such as: constitutional law, administrative law, civil law, criminal law, land law, marriage and family law. Chapter 9 introduces the law on anti-corruption with content: the basic knowledge of concept on anti-corruption, How to identify corrupt practices? Causes and harms of corruption and what it means to anti-corruption.

17. The scientific approach - 2credits

Time distribution: 2 credit points (30 theoretical hours/0 practical hours/ 60 hours self – study)

Scientific approach is a highly applied and practical subject. This subject consists of 4 chapters, each chapter is orderly compiled, presented logically, scientific contents. The main contents includes: chapter 1: General science and scientific researching; Chapter 2: The order of scientific researching; Chapter 3: Topic of scientific researching. Chapter 4: Assessment of acceptance results and publication of research results

18. Text Editing: 2 credits

Time distribution: 2 credit points (30 theoretical hours/0 practical hours/ 60 self – study hours)

The subject equips students with the most general understanding of text: definition, characteristics, classification, requirements for content and form of text, meaning of text editing, especially administrative text. Students can apply these skills during their study at the University and after graduation.

19. Environmental Ecology: 2 credits

Time distribution: 2 credit points (30 theoretical hours/0 practical hours/ 60 self – study hours)

The subject is divided into 5 main parts: General concepts in ecology; Individual ecology; population and biomedes; Ecosystem; Ecology with environmental resource management. Provide students with basic knowledge of ecology; the inter-relationship between an organism and its environment. Based on that, students can applies the knowledge to building a balanced agricultural ecosystem and towards sustainable agricultural development, protecting the living environment and exploiting natural resources in a reasonable and effective manner.

20. Zoology – 2 credits

Time distribution: 2 credit points (26 theoritical hours/8 practical hours/ 60 self – study hours)

The module includes basic knowledge about invertebrates, and vertebrates including: external morphological features, anatomical features of internal organs, biological characteristics, relations arising and development steps of the animals in order to be able to acquire basic and specialized science subjects easily and systematically. On the other hand, helping learners understand the biological characteristics of beneficial and harmful animals.

21. General microorganism: 2 credits

Time distribution: 2 credit points (26 theorical hours/8 practical hours/ 60 self – study hours)

The subject provides students with basic knowledge about morphological, structural, physiological, biochemical, genetic ... characteristics of common microorganism groups. in nature and in the human body, animals such as bacteria, viruses, yeasts, fungi ... In addition, the subject also studies the effects of extracellular factors on microorganisms, studies the beneficial and harmful side of microorganisms in life, especially in the agricultural field, from understanding and explaining phenomena and applying microorganisms in learning and research into production practices.

In addition, the subject also serves as a premise and basis for students to acquire knowledge of other subjects such as veterinary microbiology, infectious diseases ... at the same time, can be used as reference materials. Survey for staff working on microbiological research.

22. English in veterinay medicine: 2 credits

Time distribution: 2 credit points (30 theorical hours/0 practical hours/ 60 self – study hours)

The module equips students majoring in Animal Husbandry and Veterinary Science with knowledge of academic English to help students acquire the necessary skills to be able to study and work in English, read and understand documents in English, understand interviews, reports and lectures in English, present personal ideas and write essays in an academic environment. This subject also provides students with a certain amount of specialized English vocabulary being suitable for each discipline

23. Molecular Biology: 2 credits

Time distribution: 2 credit points (30 theorical hours/0 practical hours/ 60 self – study hours)

This subject provides background knowledge of biological macromolecules (DNA, RNA, protein) and how to organize and operate life activity at the molecular level. It is the foundation for students to understand the methods of testing and techniques of using

Molecular Biology tools in animal husbandry such as new-generation molecular diagnostics, tests, and vaccines..

24. Physics - 2 credits

Time distribution: 2 credit points (30 theoretical hours/0 practical hours/ 60 self – study hours)

Physics module consists of 5 chapters with 17 theoretical periods and 13 exercises and discussion periods. Theoretical part: students are equipped with general understanding about mechanics, basic motion types associated with practice, basic laws of Newton; common concepts and phenomena in fluid mechanics, important applications of fluid mechanics in agriculture and forestry; basic knowledge of electromagnetic fields, electromagnetic waves ; knowledge about optical waves, quantum optics, photochemical processes; basic knowledge of nuclear physics and their application in high-tech agriculture. Exercises and discussion part: students are asked to apply the knowledge they have learned in each chapter to solve practical problems. Practical part: students can perform virtual exercises through simulation software and applications in order to consolidate theory and apply explanations of physical laws and phenomena to their majors..

25. Advanced Math - 2 credits

Time distribution: 2 credit points (30 theoretical hours/0 practical hours/ 60 self – study hours)

This subject mention knowledge of: set, mapping, complex numbers, matrices, determinants, linear equations, vector space, some linear models in animal health.

26. Occupational safety: 2 credits

Time distribution: 2 credit points (30 theoretical hours/0 practical hours/ 60 self – study hours)

The Occupational Safety module has 24 theoretical periods and 6 practical periods. Theory includes basic knowledge of occupational safety such as: labor protection, knowledge of prevention of occupational accidents and incidents; Occupational safety techniques in some specific cases such as: chemical safety, electrical safety, fire safety, safety in pressurized environments, working safety with lifting equipment and biological safety in the laboratory; Vietnam's system of policies and laws on occupational safety and health, rights and obligations of employers and employees in occupational safety and health; Developing a plan and organizing the implementation of the occupational safety and health management system, building a safety culture in production; Practicing troubleshooting skills, first aid for accident situations at work.

27. Environmental Pollution: 2 credits

Time distribution: 2 credit points (30 theoretical hours/0 practical hours/ 60 self – study hours)

The Environmental Pollution subject aims to meet the requirements of improving the quality of students in the fields of management and engineering, as well as those who are working in factories. , companies, businesses, research institutes, schools and State agencies. The environmental pollution subject provides students with an overview of knowledge about the environment, environmental composition, the role of the environment, the relationship between development and sustainable development. The subject introduces the basic

concepts of main types of environmental pollution, causes of pollution, agents and harms causing environmental pollution as well as measures to prevent and minimize environmental pollution. The subject consists of 5 main contents as follows: Theoretical basis of environmental pollution, air environment pollution, water environment pollution, soil pollution and other forms of environmental pollution.

28. Vietnam Economic Geography: 2 credits

Time distribution: 2 credit points (30 theoretical hours/0 practical hours/ 60 self – study hours)

The Economic Geography subject is socioeconomic science, researching the current situation and development orientation of Vietnam's natural resources. The integration capacity of Vietnam in the region and in the world; International economic association influencing Vietnam's socio-economic development; Territorial organization of all branches and economic regions of Vietnam.

29. Physical Education 1: Gymnastics - 1 credits

Allocation of study time: 1 credit (9 theory period / 42 practice periods / 30 self-study periods)

The course equips students with knowledge and skills of physical exercises and athletics such as running After completing this module, students will improve their awareness of regular exercises to have a better spirit of learning and working

30. Physical Education 2: Volleyball - 1 credit

Allocation of study time: 1 credit (9 theory period / 42 practice periods / 30 self-study periods)

The course equips students with knowledge and skills of volleyball. After completing this module, students will improve their awareness of regular exercises to have a better spirit of learning and working

31. Physical Education 3: Football : 1 credit

Allocation of study time: 1 credit (9 theory period / 30 practice periods / 30 self-study periods).

The subject equips students with knowledge and skills of football. After completing this subject, students will improve their sense of regular exercise to have a better spirit of learning and working

32. Animal biochemistry - 2 credits

Time distribution: 2 credits (24theoretical hours/12 practical hours/30 self-study hours)

The course provides learners with knowledge of: i) Structure, properties and functions of the components of the animal's body; ii) The role and biological effects of vitamins, enzymes, hormones on the growth and development of animals and pathogens due to lack of vitamins, enzymes or hormone disorders; iii) Digestion, absorption, total normalization, resolution and activities of livestock and poultry; iv) Mechanisms, origins and causes of most common diseases are due to metabolic disturbances in cattle and poultry bodies

33. Animal Anatomy - 3 credits

Time distribution: 3 credits (39 theoretical hours/12 practical hours/90 self-study hours)

The Animal Anatomy subject equips students with the knowledge about the position, shape, structure and function of organs in the body of cattle (buffalo, cow, horse, pig, and goat) and poultry (chicken).

After completing the section on Animal Anatomy, students will be able to correctly locate and describe organs in the body of cattle and poultry for medical examination and treatment; comparing and distinguishing organs of livestock and poultry species; perform animal anatomy operations and have practical applications.

34 Animal histology and embryology: 2 credits

Time distribution: 2 credits (26 theoretical hours/8 practical hours/60 self-study hours)

The subject equips the knowledge of the smallest unit of the body (cytology), about the general organs / tissues of the body (Organizational Studies). On the microstructure of the organ systems such as: respiratory, digestive, genital,... (Specialized scientific organization) and embryology as the foundation for specialized subjects such as Diagnosis Veterinary diseases, Diagnostic Imaging, Veterinary immunology, Veterinary pathology, Reproductive technology, Specialized husbandry

35. Animal physiology - 3 credits

Time distribution: 3 credits (39 theoretical hours/12 practical hours/90 self-study hours)

This subject provides the knowledge about the functions of the body from the molecular level, cell to organ system on domestic animal. Have the ability to explain processible living action in animal body and apply to solve in field of animal science and veterinary medicine

36. Nutrition and animal feed - 3 credits

Time distribution: 3 credits (37 theoretical hours/16 practical hours/90 self-study hours)

Nutrition and animal feed subject provides the following knowledge: i) Nutrients essential to domestic animals; ii) Method of assessing the quality of protein and nutritional value of food; iii) Needs of nutrients of different types of domestic animals; iv) Characteristic of feed ingredients in livestock v) Characteristic and planting techniques of animal feed crop; vi) productive commercial feed methods

37. Veterinary pharmacology - 3 credits

Time distribution: 3 credits (39 theoretical hours/12 practical hours/90 self-study hours)

The subject focuses on basic knowledge of pharmacology, pharmacokinetics, and mechanism of action of drugs; drugs acting on specialized organs of the body; drugs with metabolic effects, growth stimulants, antimicrobial, anti-fungal, viral, anti-parasitic drugs and instructions on how to use preventive and treat drugs for livestock and poultry

38. Veterinary immunology - 2 credits

Time distribution: 2 credits (26 theoretical hours/8 practical hours/60 self-study hours)

The subject equips students with knowledge of; (i) the natural resistance of the animal to ecology; (ii) functional roles of components in the body's immune system and immune response processes in the body; (iii) mechanism of action and immune state of the body; (iv) the body's immune response against pathogenic microorganisms; (v) Application of veterinary immunology in testing, diagnosis, prevention and treatment of diseases in animals.

39. *Veterinary toxicology - 2credits*

Time distribution: 2 credits (28theoretical hours/6 practical hours/60 self-study hours)

Veterinary Toxicology module equips students with the following knowledge: The concept of poison, how toxins enter the animal's body, the impact of toxins on the body. After the course, students will be able to know how to diagnose and treat poisoned animals, know how to prevent poisoning and appropriate handling measures when animals are poisoned

40. *Veterinary disease diagnosis - 3 credits*

Time distribution: 3 credits (39theoretical hours/12 practical hours/90 self-study hours)

The Veterinary Diagnosis subject provides the basic knowledge of veterinary disease diagnosis, approach and fixation of animals for medical examination; method of questioning; basic examination methods: observation, touching, typing and listening; general examination methods: general clinical examination, animal morphology examination, physical examination, mucosal examination, third lymph node examination, hair and skin examination, body temperature measurement; Examination method of cattle and poultry systems: cardiovascular and blood test, respiratory system examination, gastrointestinal system examination, urinary - genital system examination, nervous system examination.

41. *Veterinary microbiology - 3 credits*

Time distribution: 2 credits (24 theoretical hours/12 practical hours/60 self-study hours)

The subject equips learners with knowledge about biological characteristics of bacteria, viruses that cause disease in cattle and poultry; ii) Diagnosis by culture, isolation and serological diagnosis. Prevention and treatment of diseases caused by pathogenic microorganisms in livestock.

42. *Veterinary epidemiology – 2 credits*

Time distribution: 2 credits (30 theoretical hours/0 practical hours/60 self-study hours)

The subject provides learners with knowledge about: i) Causes of disease and risk factors for disease formation; ii) Understanding epidemiology of infectious diseases and infectious disease prevention measures; iii) Methods of calculating epidemiological parameters, analyzing risk factors between disease and pathogens; iv) Know how to take samples and the number of samples in the study.

43. *Veterinary pathology - 3 credits*

Time distribution: 3 credits (39 theoretical hours/12 practical hours/90 self-study hours)

Veterinary Pathology Unit is the study of the functional and morphological changes of tissues and cells when the body becomes sick. This is the Pre-Clinical Subject of Veterinary Medicine and serves as the bridge between the foundation disciplines and other clinical subjects. This subject equips learners with some basic principles in pathology as the basis for disease diagnosis. At the same time, equipping students in veterinary science with basic understanding of specialized pathological features including pathological features of animal organs, pathological features of different etiologies. Cause in animals allows veterinarians to quickly and accurately diagnose and differentiate between diseases, thereby making reasonable and effective treatment regimens for diseases in animals.

44. Genetics animals – 2 credits

Time distribution: 2 credits (30 theoretical hours/0 practical hours/60 self-study hours)

This subject equips the basic scientific knowledge about: i) genetic basis of animal traits and behaviors; immune genetics in animals as the basis for access to specialized veterinary disciplines; ii) the origin, domestication process, adaptation and characteristics of livestock breeds; iii) the scientific basis and methods of evaluating, selecting, creating and breeding animals

45. Animal Reproductive technology: 2 credits

Time distribution: 2 credits (26 theoretical hours/8 practical hours/60 self-study hours)

This subject provides the basic scientific knowledge about: the reproductive activities of male and female cattle; egg, sperm motility and sperm life time in female animals' genital organs and fertilization; techniques for exploiting semen of male cattle, techniques for semen quality testing, preparation, conservation and transport of semen; techniques of artificial insemination for cattle and poultry; technology of bovine embryo transfer and gender control essentials in animal reproduction.

46. Animal selecting and multication: 3 credits

Time distribution: 3 credits (39 theoretical hours/12 practical hours/90 self-study hours)

This subject is include the basic knowledge of adaptation, the origins, physical characteristics and productiive performance. Have the ability to evaluate and assess the animal's appearance, fitness and growth, to understand sexual growth and evaluation criteria for growth development and production of animals, blood relationships between individuals; methods of breeding selection and mating pairing; methods of breeding animals; seed program and breeding work organization; techniques for semen quality testing and artificial insemination of animals

47 Veterinary Infectious Diseases - 4 credits

Time distribution: 4 credits (52 theoretical hours/16 practical hours/120 self-study hours)

Veterinary infectious disease is subject that researchs about general veterinary infectious disease which includes: Concepts and signs of infection, types of infection, pathogens mechanisms, periods of infectious disease, affect of the factors to epidemic processing, tranmissions of pathogen, the principle of preventation and control diseases.

Specialist infectious diseases which includes: General infectious diseases in livestock, Ruminant infectious diseases, Swine infectious diseases, poultry infectious diseases

48. *Veterinary parasites and parasitic diseases - 4 credits*

Time distribution: 4 credits (52 theoretical hours/16 practical hours/120 self-study hours)

Veterinary parasites and parasitic disease is a subject that researches about: i) the fundamental problems of veterinary parasites (including concepts, classifications, characteristics, and parasitic survival point, helminthic eradication theory, methods of diagnosis of parasitic diseases, methods of diagnosis and prevention of parasitic diseases); ii) Specialized parasites, including: trematodes and some trematodes, tapeworms and some tapeworm diseases, nematodes and some nematodes, parasitic arthropods and some animal diseases arthropods, protozoa and some protozoan diseases in cattle and poultry.

49. *Veterinary internal medical disease - 4 credits*

Time distribution: 4 credits (52 theoretical hours/16 practical hours/120 self-study hours)

The subject provides students the knowledge of medical treatment outline, knowledge of blood transfusion, fluid transfusion for cattle, and at the same time going deep to find out. Understanding of pathological features, causes, symptoms, lesions, diagnostic and treatment methods of diseases in the cardiovascular, respiratory, digestive, urinary, neurological systems, metabolic disorders, toxins cause disease in animals. After completing the subject on Veterinary Medicine Disease, students will be able to apply general medical knowledge to support treatment for animal diseases; applying clinical diagnostic techniques; Applying a number of non-clinical diagnostic techniques and modern techniques such as ultrasound, blood, urine testing ... in the diagnosis of common medical diseases occurring in the organs of cattle. Perform surgical operations in support of the treatment of internal animal diseases; proficient in prescribing, supporting treatment and treatment of animal diseases.

50. *Animal productive quarantine: 3 credits*

Time distribution: 3 credits (39 theoretical hours/12 practical hours/90 self-study hours)

Animal productive quarantine is a subject that researches about: methods of transportation, preservation, processing and quarantine of animals and animal products such as: meat, eggs, milk, fish... That is to provide people high-value animal products, food safety; human and livestock are protected in health.

51. *Veterinary Surgery diseases - 3 credits*

Time distribution: 3 credits (39 theoretical hours/12 practical hours/90 self-study hours)

The subject provides students with a high quality Veterinarian major with knowledge of the basic techniques of veterinary surgery, including immobilization methods, principles of infection prevention in surgery, anesthesia methods, anesthesia used in surgery (anesthetics, anesthetics, anesthetics), surgical hemostasis methods, needles and sutures, as well as methods of connecting the tissue used to seal wounds, and dressing methods for animals. Next, the subject will introduce each specific surgery case by organ and anatomical region of the animal including reproductive organ surgery, surgery on the head and abdomen. In addition, the

subject will introduce some of the most common surgical diseases in animals including trauma, lesions, infections, varnish, tumors and diseases of the skin, muscles, bones and joints. Nails and eyes. In short, this subject is closely related to the knowledge of animal physiology, animal physiology, pharmacology and disease diagnosis, in order to provide both the knowledge and skills essential to the students of Veterinary Medicine

52. *Veterinary obstetrical diseases: 3 credits*

Time distribution: 3 credits (39 theoretical hours/12 practical hours/90 self-study hours)

This subject equips learners with the knowledge of: signs pregnancy, the factors affecting of pregnant animals, gestation, the process of fetal development, physiological changes of animal's body in gestation, on that basic students are able to practice diagnosis methods pregnant cattles. Students are able to practice the technical process of care, nurturing, management pregnant cattle. Learners realize signs of calving and practice to deliver for cattle. Students have the ability to define the causes, symptoms, diagnosis and treatment of diseases such as : in gestation, difficult calving, obstetrical diseases....Students are able to diagnose reproductive disorders in cattle (male and female), to define the causes of reproductive disorders in cattle and to give treatment methods.

53. *Zoonotic diseases: 2 credits*

Time distribution: 2 credits (26 theoretical hours/8 practical hours/60 self-study hours)

Zoonotic Disease is the science that studies: i) Outline of zoonotic diseases (including Concepts and general introduction to intermodal diseases animals and humans; Main types of infectious diseases; animals carrying pathogens.); ii) Infection between animals and humans caused by viruses; iii) Infection between animals and humans by bacteria; iv) Infection between animals and humans by parasites; v) One Health Application in zoonotic disease prevention

54. *Disease in dogs and cats - 2 credits*

Time distribution: 2 credits (26 theoretical hours/8 practical hours/60 self-study hours)

The Cat and Dog Diseases subject provides high-quality veterinarians with the basics of immobilization methods, examining cat and dog systems (skin, lymph nodes, and digestive system, chemistry, respiratory system, secretory system, genitourinary system).

In addition, the subject also provides knowledge about some common infectious diseases, parasites, general surgery in dogs and cats such as disease, cause of disease, pathogenesis, diagnostic methods and Prevention and treatment to help students have the ability to think, analyze and offer effective solutions for prevention and treatment in reality. Finally, the subject also equips students with skills to adapt to the working environment of a veterinarian in practice.

55. *Specialized animal production: 4 credits*

Time distribution: 4 credits (54 theoretical hours/12 practical hours/120 self-study hours)

This subject equips for students the basic knowledge of animal husbandry, students have the ability to distinguish among breeds of swines, cattles and poultries; are able to

select and practice multiplication for livestock. In other hand, this subject provides for students basic technique of feed selection, feeding, nurturing, management with period of livestock.

56. *Pharmateutics and quarantine method in veterinary drug: 2 credits*

Time distribution: 2 credits (30 theoretical hours/0 practical hours/60 self-study hours)

This subject equips theoretical basis and practical techniques for preparation and production of common drugs; on quality standards, packaging, preservation and testing techniques of such drugs in order to maximize the therapeutic effect of drugs, ensure safety, convenience for users and meet the economic efficiency.

The contents of the subject include: i) basic knowledge of drug preparation, testing and pharmacology; ii) some methods of dosage form of drugs; iii) Some basic methods and technical technologies for testing veterinary drugs.

57 *Vaccine production technology and vaccination: 2 credits*

Time distribution: 2 credits (30 theoretical hours/0 practical hours/60 self-study hours)

The subject is the science of research on: i) basic issues about vaccines (including: vaccine concept and classification, basic properties copies of vaccines, ingredients of vaccines, characteristics of some vaccines used in veterinary medicine); ii) Technology of production and testing of vaccines, including principles of vaccine production, vaccine production, a number of processes for vaccine production and testing, and some procedures for vaccine testing; iii) Use of vaccines in disease prevention for livestock and poultry (including: principles of vaccine use, rules of specific antibody formation after vaccination in animals, principles of vaccine use) vaccines, some vaccines used to prevent diseases for livestock and poultry.

58. *Veterinary medicinal herbs - 2 credits*

Time distribution: 2 credits (30 theoretical hours/0 practical hours/60 self-study hours)

The subject provides students with the basic knowledge about medicinal herbs, the history of development of medicinal herbs in the world and in Vietnam, naming medicinal herbs, principles and methods of medicinal collection, methods of drying medicinal herbs, methods of selecting, packaging and preserving medicinal materials, methods of preparing medicinal herbs according to Oriental medicine; Chemical and pharmaceutical ingredients in medicinal herbs, their pharmacological effects and their therapeutic applications; Methods of evaluating and testing medicinal herbs; Morphological characteristics, distribution, chemical composition, pharmacological effects and application of some medicinal herbs in the treatment of diseases such as infectious diseases, parasitic diseases, obstetric diseases, and diseases internal medicine ... in organ systems such as circulatory system, digestive system, genitourinary system, urinary ... Folk remedies in disease treatment; Some herbs are toxic to prevent.

59. *Specialized Law - 2 credits*

Time distribution: 2 credits (30 theoretical hours/0 practical hours/60 self-study hours)

The Veterinary Law was passed by the National Assembly on June 19, 2015

60 Hygiene in animal production - 2credits

Time distribution: 2 credits (30 theoretical hours/0 practical hours/60 self-study hours)

This subject equips learners with basic knowledge of the effects of external factors on health and production of livestock. This subject provides methods of environmental improvement in animal husbandry that contribute to raising livestock productivity, livestock waste treatment methods, and minimizing environmental pollution.

61. Aquatic animal diseases - 2credits

Time distribution: 2 credits (30 theoretical hours/0 practical hours/60 self-study hours)

The subject provides students with basic knowledge about general diseases in aquaculture; Methods of diagnosis, prevention and treatment of diseases in aquatic animals. The subject also provides students with knowledge of using drugs and chemicals routinely in the prevention and treatment of diseases in aquaculture.

62. Animal nutritional diseases - 2credits

Time distribution: 2 credits (30 theoretical hours/0 practical hours/60 self-study hours)

The subject equips learners with knowledge about: The role of nutrition in the animal's body, Effects due to imbalance in energy, protein and fat on the animal's body. Appearance, diagnosis and treatment of a number of common diseases caused by mineral deficiency. Effects due to imbalance in vitamins, effectiveness of vitamins. Study the causes, symptoms, diagnosis and treatment methods of vitamin disorders. Metabolic disorders and poisoning in poultry. Study the causes, symptoms, diagnosis and treatment methods of diseases caused by metabolic disorders and poisoning in poultry. Study the causes, symptoms, diagnosis and treatment methods of metabolic disorders in dogs and cats. Study the causes, symptoms, diagnosis and treatment methods of diseases caused by metabolic disorders in pigs. Researching on the causes, symptoms, diagnosis and treatment methods of diseases caused by metabolic disorders and food factors is very interesting. Identification of secondary compounds in plant and animal foods and poisoning of feed supplements

63. Behavior and Animal Welfare - 2 credits

Time distribution: 2 credits (30 theoretical hours/0 practical hours/60 self-study hours)

This subject includes content such as: introduction to animal welfare; evaluation of animal welfare based on criteria: animal physiology, autonomic nervous system, physiology - nervous system, endocrine.

64. Diagnostic Imaging - 2 credits

Time distribution: 2 credits (30 theoretical hours/0 practical hours/60 self-study hours)

Diagnostic Imaging subject equips students with knowledge of: physical foundations, principles, techniques of Diagnostic Imaging Methods such as routine radiology, ultrasound organs in the animal's body such as heart, lungs, blood vessels, genital system, urinary system, bones, joints, nerves, digestive system. After completing this subject, learners will be able to apply general knowledge about using ultrasound and X-ray machines in diagnosing diseases for animals; know how to ultrasound some organs in the body: heart,

lungs, blood vessels, genital system, urinary system, bones, joints, nerves, digestive system; know how to take X-rays to diagnose diseases related to bones, joints, nerves, abdomen and facial teeth.

65. Disease in wildlife - 2 credits

Time distribution: 2 credits (30 theoretical hours/0 practical hours/60 self-study hours)

The wildlife diseases subject equips for students with the knowledge: i) Classification of mammals, classification of birds, classification of reptiles, classification of rodents); ii) Some common diseases in animals (including: infectious diseases, parasitic diseases, internal - external - obstetric diseases); iii) Some common diseases of avian birds (infectious diseases, parasitic diseases); iv) Some common diseases in reptiles (infectious diseases, parasitic diseases); v) Some common diseases in rodents (infectious diseases, parasitic diseases).

66. Acupuncture for treatment in domestic diseases: 2 credits

Time distribution: 2 credits (30 theoretical hours/0 practical hours/60 self-study hours)

The subject equips learners with knowledge of: Theories of oriental traditional medicine in disease treatment. Mechanism of acupuncture under modern medicine. Acupuncture points, acupuncture points on the body of domestics. Treatment methods include: hand-puncture, electro-acupuncture, hydro-acupuncture and acupuncture. Some single acupressure treatment for domestics .

67. Valuable animal husbandry: 2 credits

Time distribution: 2 credits (30 theoretical hours/0 practical hours/60 self-study hours)

This subject equips for learners the knowledge of the law on registration of raising, transporting and using rare animal products; Breeding techniques, production organization, management, and research on bees, silkworms and other rare animal species.

68. Fresh Water Fish Breeding Techniques: 2 credits

Time distribution: 2 credits (30 theoretical hours/0 practical hours/60 self-study hours)

This subject provides biocharacteristics of fish breedings that are raised commonly in Viet Nam, techniques productive fish breeding, prevention and treatment in fish diseases

69. Food safety and hygiene - 2 credits

Time distribution: 2 credits (30 theoretical hours/0 practical hours/60 self-study hours)

The subject equips for learners knowledge about food safety and hygiene; quality management systems such as HACCP, ISO, VietGAP in animal husbandry.

70. One Health in Veterinary Medicine - 2 credits

Time distribution: 2 credits (30 theoretical hours/0 practical hours/60 self-study hours)

The one health subject in veterinary medicine provides learners with the knowledge of one health, the factors that effected one health, the one health core competencies. Being able to apply one health core competencies in diseases controlling and food safety and hygiene.

71. Experimental methods in animal husbandry - veterinary medicine - 2 credits

Time distribution: 2 credits (30 theoretical hours/0 practical hours/60 self-study hours)

Experimental methods in animal husbandry - veterinary medicine is include 5 chapters: Purpose, classification and basic principles of designing experiments (one factor and two factors) in in animal husbandry - veterinary medicine; Experimental design methods; Some concepts and parameters of biological statistic; Methods of analyzing experimental data by computer software:Minitab software, SAS..

72. Internship 1: Diagnosis and test (microorganism, disease anatomy) - 2credits

Time distribution: 2 credits (0 theoretical hours/120 practical hours/60 self-study hours)

This subject equips for students with the basic skills of safety rules in the laboratory: cleaning and disinfection of equipment and instruments in the lab; Preparing media, culture and stain specimens in the microbiology laboratory; skills in making macroscopic and microscopic specimens and reading specimens.

73. Internship training 2: Injection and disease prevention for animal -4 credits

Time distribution: 4 credits (0 theoretical hours/240 practical hours/120 self-study hours)

This subject equips for students with the basic skills of using and preserving vaccines, approach animals methods, and techniques in vaccination

74. Internship training 3: Productive Technology Approach of Veterinary Drugs and Vaccine: 1 credit

Time distribution: 1 credit (0 theoretical hours/60 practical hours/30 self-study hours)

This subject equips for learners with basic knowledge about organization, management and production in commercial feed manufactory, farms..

75. Graduate internship - 10 credits

Time distribution: 10 credits (0 theoretical hours/600 practical hours/300 self-study hours)

+ Prior -subject: all of subjects in training program

+ Prerequisite subjects: Veterinary disease diagnosis, Veterinary pharmacology, Planning and implementation of animal disease prevention and control, Disease management and veterinary practice at poultry farms, Diagnostic skills, prevention and treatment of domestic animals at Veterinary clinic

The graduation internship is include the knowledge about nutrining process, disease management, prevention and treatment schedule for livestock, disinfection and sterilization; Methods of prevention and treatment diseases in livestock.

76. Skilled practice 1: Laboratory skilleds - 2 credit

Time distribution: 01 credit (0 theory period / 120 training periods / 60 self-study periods)

This subject equips for students the basic skills of safety rules in the laboratory such as: cleaning and disinfection of equipment and instruments in the lab; Preparing media, culture and stain specimens in the microbiology laboratory

77. Skilled practice 2: Disease management and veterinary practice at the pig farm - 1 credit

Time distribution: 01 credit (0 theory period / 120 training periods / 60 self-study periods)

The subject equips for students with basic skills about: preparing conditions for raising pigs; practice nutring process;Practice diagnosis, prevention and treatment diseases in swine; calculation the economic efficiency of a pig farm/year.

78. Skilled practice 3: Management, discovery, diagnosis and treatment deseases for poultry: 1credit

Time distribution: 01 credit (0 theory period / 120 training periods / 60 self-study periods)

The subject equips for students with basic skills about: preparing conditions for raising poultries; practice nutring process;Practice diagnosis, prevention and treatment diseases in poultries; calculation the economic efficiency of a poultry farm/year.

79. Skilled practice 4: Management, discovery, diagnosis and treatment deseases for ruminant : 1 credit

Time distribution: 01 credit (0 theory period / 120 training periods / 60 self-study periods)

The subject equips learners with skills to prepare conditions for raising buffaloes, cows, goats, sheep (barns, livestock tools, etc); rules of a ruminant farm; food for all kinds of ruminants; characteristics of ruminants; techniques for selecting ruminants; ruminants breeding techniques (sanitation, feeding, drinking, etc); check and evaluate health status of ruminant herds; implement the process of disease prevention and treatment (Veterinary hygiene, prevention with vaccines, use of medicines for prevention and treatment, etc); waste treatment in ruminants farm; find out about the farm's production plan through books / interviews; know how to calculate economic efficiency in raising ruminants/ year.