THAI NGUYEN UNIVERSITY
UNIVERSITY OF AGRICULTURE AND FORESTRY

SOCIALIST REPUBLIC OF VIETNAM
Independence-Freedom-Happiness

THE PROGRAMME SPECIFICATION OF ANIMAL SCIENCE PROGRAMME

(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 – Thai Nguyen University)

1. General Information

Specialized training: Animal Science and Veterinary Medicine

Degree training: Undergraduate

Name of final award: Vietnamese: Engineer of Animal Science and Veterinary medicine

Duration of training: 4 years

Forms of training: Full time

2. Objective of training

Training engineers of Animal Science and Veterinary Medicine to meet the needs of the society in the career of developing science and technology in the specialized field of Animal Science and Veterinary Medicine

This program aims to povide human resources with high professional qualifications and skillful skills. Having good health, good ethical qualities, and respect for their profession. Ability to continue learning, participating in learning at higher education levels

3. Learning Outcomes

3.1. Knowledge requirement

General knowledge

- Students understand, analyze and evaluate the scientific knowledge system of the basic principles of Marxism-Leninism; Ho Chi Minh Thought; Policy and guidelines of the Party, State and law. Applying the above scientific knowledge in real life

- Students have capacities analyze personal psychological characteristics and apply basic knowledge of Civil Law, Criminal Law, Labor, Economics, ... into practical career and life.

- Students understand the impacts of economic and technical solutions on the livestock sector in the current economic, environmental and social context and apply the basic rules and regulations of society to fields in the livestock industry

Foundation knowledge

- Students are applied knowledge about biology and behavior of animals into the care, nurturing, prevention, treatment and protection of animal warefare.

- Students are analyzed and applied biological, chemical and physical processes related to animals in practice

- Applying the knowledge about design of barn and waste management to practice husbandry

- Applying knowledge about animal nutrients, food and forage crops, ... to care and nurture animals.

Applying knowledge of selecting, breeding and breeding livestock in the field of animal husba- ndry;

Extra knowledge

- Explain and apply advanced knowledge about selecting and breeding breeds, characteristics of nutrients for the digestion and absorption of animals into farming practices

- Explain and apply advanced knowledge about physiological characteristics and breeds; nutrition requirements - feed in the breeding; designing and constructing barn, facilities and equipment; breeding techniques for all kinds of animals

- Apply advanced knowledge about diseases and typical pathogens in livestock and poultry to prevent and treat diseases animals.

Additional knowledge

- Explain and apply knowledge of management, operating professional activities, environmental protection, marketing in agriculture to ensure hygiene, safety and sustainable development.

- Applying basic legal knowledge in legal documents related to animal science

3.2. Skills requirement

3.2.1. Profesional skills: Program aims to produce graduate who are:

- Capable of application, professional development and adaptation to diverse working environments

- Skill in solving and professional consulting issues in the field of animal science and veterinary such as: feed production, feed formulation, selection and reproduction, implementation of technique in animal production, ingredient analysis, product quality; diagnosis, prevention and treatment of animal diseases.

- Capable to search and use information in the field of animal husbandry: analysis, market prediction of livestock products and related products

- Capable of planning, organizing and operating production and business in the livestock sector;

Able to skills to synthesize, analyze, evaluate, forecast, and write scientific reports

- Able to search and conduct researches to improve knowledge

3.2.2. Sotf skills

- Skills in communication, collaboration and working with the community. Competent in use of media to propagate and disseminate professional knowledge to the community

- Capable to teamplayers, work independently; synthesize, analyze and evaluate data related to the livestock sector and collect collective opinion and use new achievements in science and technology to solve real problems in the livestock sector

- Have knowledge in English proficiency TOEIC 400

- Good at use of office informatics softwares, applied informatics and specialized softwares in feed formulation and statistical processing.

- Act in recognition of ethical and cultural and social differences of different social groups;

- Ability to work with a certain group of people (farmers or interest groups ...) in a specific context with supervision / guidance;

- Ability to make decisions about them actions and to take responsibility for that behavior / action

3.3. Attitude and moral compentency

- Understanding ethical and social issues to transfer technology to different social groups

- Apply social and ethical principles in the professional field to come up with appropriate solutions

- Ability to make judgments based on socially accepted ethical norms, accountable to superiors and subordinates

4. The knowledge that students need accumulate

- This program is consisting 120 units without physical education and national defence education

5. Candidates: After graduation from high school who satisfy university entrance exam statue of Ministry of Education and Tranning

6. Tranning process, grading scales and graduation conditions

Trainning process, score scales and graduating conditions are performed according unversity trainning statue by credit point system followed/To be enclosed/ by the Decision No. 43/2007/QĐ-BGD& ĐT that are concretized by To be enclosed/ by the Decision No.756/QĐ-ĐT dated August 21st, 2013 issued by Rector of Thai Nguyen University of Agriculture and Forestry)

7. Cirriculum

TT	Tên học phần	Tên tiếng Anh	Số TC	Số tiết LT	Số tiết TH	Mã số học phần
A. Kiến thức giáo dục đại cương		**Basic Subject Knowledge**	**48**			
I. Các học phần bắt buộc		**Required Subjects**	**36**			
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 ideology	2	30	-	HCM121
b) Ngoại ngữ, Tin học, Khoa học tự nhiên, xã hội		***Language, Informatic, Natural and Social Science***	***28***			
5	Hóa học	Chemistry	2	25	10	CHE121
6	Hóa phân tích	Analysing Chemistry	2	25	10	ACH121
7	Sinh học	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 10 TC)		**Self Selection 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	Động vật học	Zoology	2	30	-	ZOO221
20	Vi sinh vật đại cương	General microorganism	2	26	8	GMO221
21	Sinh thái môi trường	Environmental Ecology	2	30	-	EEC121
22	Tiếng Anh chuyên ngành chăn nuôi thú y	Specific English for Animal husbandry	2	30	-	EAH121
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 tiết**			
B. Kiến thức giáo dục chuyên nghiệp		**Professional Knowlegde**				
I. Kiến thức cơ sở ngành		**Basic Knowledge**	**19**			
a) Các học phần bắt buộc		**Required Subjects**	**15**			
32	Hoá sinh đại cương	General biochemistry	2	26	8	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 thú y	Pharmacology	2	26	8	PHA221
b) Các học phần tự chọn (tích lũy đủ 4 TC)		**Self Selection Subjects**	**4**			
38	Di truyền động vật	Animal genetics	2	30	-	AGE221
39	Chẩn đoán bệnh thú y	Diagnosis of Animal Diseases	2	26	8	DAD321
40	Miễn dịch học thú y	Immunology of veterinary	2	30	-	IVE221
II. Kiến thức ngành		**Special Knowledge**	**33**			
a) Các học phần bắt buộc		**Required Subjects**	**18**			
41	Chọn và nhân giống vật nuôi	Animal selecting and propagating	3	37	16	ASP331
42	Chăn nuôi lợn	Swine husbandry	3	39	12	SHU331
43	Chăn nuôi gia cầm	Poultry husbandry	3	39	12	PHU331
44	Chăn nuôi trâu bò	Cattle husbandry	3	39	12	CHU331
45	Bệnh truyền nhiễm thú y	Veterinary infectious diseases	3	39	12	VID331
46	Ký sinh trùng và bệnh ký sinh trùng thú y	Parasite and veterinary parasitology	3	37	16	PVP331
b) Các học phần tự chọn (tích lũy đủ 15 TC)		**Self Selection Subjects**	**15**			
47	Bệnh nội khoa thú y	Veterinary Internal Desease	2	24	12	VID321
48	Kiểm nghiệm thú sản	Animal Products Inspection	2	24	12	API321
49	Ngoại - Sản thú y	Veterinary external and post-natal deseases	3	39	12	EPD331
50	Vệ sinh chăn nuôi	Hygiene in animal husbandry	2	30	-	HAH321
51	Chăn nuôi dê, thỏ, ngựa	Goat, Horse, Rabbit husbandry	2	30	-	GHH321
52	Đồng cỏ và cây thức ăn	Plant feed and Pasture	2	30	-	PFP321

53	Quyền lợi động vật	Animal welfare	2	30	-	ANW321
54	Chăn nuôi động vật quý hiếm	Value Animal Husbandry	2	30	-	VAH321
55	Bệnh lý học thú y	Veterinary pathophysiology	3	39	12	VPP331
56	Độc chất học thú y	Veterinary Toxicology	2	28	4	VTO321
57	Dịch tễ học thú y	Veterinary Epidemionogy	2	30	-	VEP321
58	Chăn nuôi cá nước ngọt	Fresh Water Fish Breeding Techniques	2	30	-	FFT321
59	Bệnh truyền lây giữa động vật và người	Zoonosis	2	30	-	ZOO321
60	Bệnh ở động vật hoang dã		2	30	-	
61	Bệnh chó mèo		2	26	8	
62	Chăn nuôi ong, tằm	Bee and silkworm husbandry	2	30	-	BSH321
63	Công nghệ sinh sản	Technology in Animal Reproduction	2	26	8	TAR321
III. Kiến thức bổ trợ		**Supplemental Knowledge**	**6**			
64	Phương pháp thí nghiệm (CNTY)	Exprimental Methods in Animal Husbandry	2	30	-	EMA321
65	Vệ sinh an toàn thực phẩm	Food safety and Hygence	2	26	8	FSH321
66	Luật thú y	Veterinary Laws	2	30	-	VLA311
IV. Thực tập nghề nghiệp		**Professional practice**	**4**			
67	TTNN 1: Tiêm phòng chống dịch	Internship training 1: Injection and disease preventation for animal	2	-	120	AVH421
68	TTNN 2: Thực tập nghề chăn nuôi	Internship training 2: Internship training on animal husbandry	2	-	120	AVH412
69	**Thực tập tốt nghiệp**	**Thesis**	**10**	-	600	AVH905
V. Rèn nghề		**Skilled Practice**	**5**			
70	Rèn nghề 1: kỹ năng phòng thí nghiệm	Skilled practice 1: Laboratory skilleds	2	-	120	SVM421

71	Rèn nghề 2: đồng cỏ - cây thức ăn và chăn nuôi trâu bò	Skilled practice 2: Plant feed , pasture and cattle husbandry	1	-	60	SAS412
72	Rèn nghề 3: kỹ năng chăn nuôi lợn	Skilled practice 3: Skilleds on swine husbandry	1	-	60	SAS413
73	Rèn nghề 4: kỹ năng chăn nuôi gia cầm	Skilled practice 4: Skilleds on poultry husbandry	1	-	60	SAS414
Tổng cộng		**Total**	**120**	2009	1592	

Note:

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

- A credit = 15 theorical hours, = 30 practical hours, = 60 internship hours in farm (same time a week)

8. Teaching schedule

1. First year

*** Semester I**

List	Course	Credit point	Theorical hours	Practical hours
1	Physical Education 1: Gymnastics	1	9	42
2	Chemistry	2	25	10
3	Fundamental Principles 1 (Phylosophy)	2	30	-
4	Biology	2	25	10
5	English 1	3	45	-
6	Text editing	2	15	30
7	Mathematics 1	2	30	-
8	General Sociology	2	30	-
	Subtraction	**16**	**209**	**92**

*** Semester 2**

List	Course	Credit point	Theorical hours	Practical hours
1	Physical Education 2: Volleyball	1	9	42
2	Chemistry Analysis	2	25	10
3	Fundamental Principles 2 (Political economics and scientific socialism)			

4	State law	2	30	-
5	General Informatics	3	30	30
6	English 2	2	30	-
7	Probability and Statistics	3	45	-
8	National Defense Education (165 hours = 5 weeks)			-
	Subtraction	**16**	**214**	**82**

Second year

*** Semester 3**

List	Course	Credit point	Theorical hours	Practical hours
1	(Zoology)	2	30	-
2	Physical Education 3: Football	1	9	42
3	General biochemistry	2	26	8
4	Animal Physiobiology	3	39	12
5	Animal nutrition	3	37	6
6	English 3	2	60	-
7	Animal genetics	2	30	-
8	Animals Anatomy	3	39	12
	Subtraction	**18**	**270**	**80**

*** Semester 4**

List	Course	Credit point	Theorical hours	Practical hours
1	Pharmacology 1	2	26	8
2	Scientific Approach Methodology	2	30	-
3	Histology and embryology of animal	2	26	8
4	General microorganisms	2	26	8
5	Skilled practice 1: Laboratory skilleds	2	-	120
6	Diagnosis of Animal Diseases	2	26	8
7	English 4	3	45	
8	Environmental Ecology	2	30	-
	Subtraction	**17**	**209**	**152**

Year 3

*** Semester 5**

List	Course	Credit point	Theorical hours	Practical hours
1	Veterinary infectious diseases	3	39	12
2	Parasite and veterinary parasitology	3	37	16
3	Animal selecting and reproduction	3	37	16
4	Poultry husbandry	3	39	12
5	Swine husbandry	3	39	12
6	Internship training 1: Injection and disease preventation for animal	2	-	120
	Subtraction	**17**	**191**	**68**

*** Semester 6**

List	Course	Credit point	Theorical hours	Practical hours
1	Veterinary Internal Desease	2	24	12
2	Cattle husbandry	3	39	12
3	Pasture and forage	2	30	-
4	Skilled practice 2: Pasture and forage, cattle husbandry	1	-	60
5	Veterinary external and post-natal deseases	3	39	12
6	Exprimental Methods in Animal Husbandry	2	30	-
7	Skilled practice 3: Skilleds on swine husbandry	1	-	60
8	Skilled practice 4: Skilleds on poultry husbandry	1	-	60
9	Internship training 2: Internship training on animal husbandry	2	-	120
	Subtraction	**17**	**162**	**336**

4. Year 4

***Semester 7**

List	Course	Credit point	Theorical hours	Practical hours
1	Animal welfare	2	30	-
2	Animal Products Inspection	2	24	12
3	Revolutionary and Policies of Vietnamese	3	45	-

	Communist Party			
4	Goat, Horse, Rabbit husbandry	2	30	-
5	Food safety and Hygence	2	26	8
6	Hygiene in animal husbandry	2	30	-
7	Ho Chi Minh's ideology	2	30	-
	Subtraction	**15**	**215**	**20**

***Semester 8**

List	Course	Credit point	Theorical hours	Practical hours
1	Thesis	10	-	600
	Subtraction	**10**	**-**	**600**

9. Courses dicrible

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

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

Course specifications: This courses equips the knowledge of social movement laws and social common development and thouhgt to take shape worldview and methodology in scientific awareness and revolutionary action. Course content includes:

Content 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 phisolophy point of view about human

9.2. Phylosophy 2 (Marx-Lenin's principles): 3 credit points

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

Course specifications: This course have 2 contents which includes: (1) political economy , (2) scientific socialism. Political economy is course that researchs to product and trade into political relationship by view's politicians. This content provides concepts and basic knowledge systems of supply and demand, profits, free trade… some school of thought of political economy become idealogical politicians. (2) Scientific socialism equip the knowledge of theorical in economy-politices – society by KacMarx – Engles thought. This courses is one of Marxism- Lenin parts,

9.3 Revolutionary path of the Communist Party of Vietnam: 3 credit pionts

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

This course equips for learner basic understanding which includes established and development of the Communist Party of Vietnam, the lead of Communist Party in revolution, the planting and determining revolution Vietnam's guidelines, carry out one's duty that draw the moral. This course provides the profound understanding of Communist Party of Vietnam's guidelines in a period of national industrialization and modernization with a socialist orientation which in fills: politics, economic, sociocultural, foreign relations

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

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

This course provides the basic knowledge of established reason and prossess Ho Chi Minh's thought, idealogical Ho Chi Minh systems in the revolutionary Vietnam. This course elucidates Ho Chi Minh' thought of to the nation's revolutionary cause when approaching and solving agrumental revolutionary.

9.5. Chemistry: Time distribution: 2 credit points (30 theorical hours /10 practical hours/60 sefl-study)

This course is including 6 chapters (30 theorical hours and 10 practical hours). The theory equips the basic knowledge of chemical balance, solution, qualitative analysis, quantitative analysis. The practice equips the experiment in factors of chemical balance, quantification pH values of common solution.

9.6. Chemistry Analysis: Time contribution: 2 credit points (25 theorycal hours/10practical hours/ / 60 self – study)

The coures provide for students with basic concepts analytical chemistry, qualitative analysis methods, and quantitative analysis methods, including methods of mass analysis and methods of volumetric analysis and analytical methods and equiment of analysis.

9.7. Biology: 2 credit pionts

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

This course is including 7 chapters. The theorical part is includes 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.

9.8. Mathematics 1: 2 credits points

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

Summary of subject content: Advanced Math includes 3 chapters with 17 theoretical periods and 13 discussion periods.

Theoretical part: Equipping the 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: Task of students to apply the learned methods to solving problems, especially proficient in using software (Excel) on the machine to solve problems of matrices, mathematical systems and optimal

Equip with basic calculation skills, practice analytical skills, and mathematical modeling for a number of practical problems such as: Business management and production problems; The problem of the ration of animal feed; Calculation of residual chemical content in the environment and food; The optimization problem in Agriculture and Forestry. Equip students with some math solver software, from which students apply to solve math problems in the module and apply them in real problems.

9.9. Probability statistics: 3 credit points

Time contribution: 3 credit points (45 theorycal hours/0 practical hours/ 90 self – study)

Summary of the subject content: The Probability module includes 2 parts: Probability and statistics with 27 theoretical periods and 18 discussion periods.

Theoretical part: Equip knowledge of trial, event, probability of events; random variables, probability distribution laws and characteristic parameters ofrandom variables; sample population, sample characteristic parameters and calculation; parameter estimation; parameter testing; correlation and regression.

Discussion: Require students 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.

9.10. English 1: 3 credit points

Time contribution: 3 credit points (45 theorycal hours/0 practical hours/ 90 self – study)

Course summary content: This module provides basic and core knowledge of Grammar (sentence structure, verb tense ...), Phonetics (stress & intonation), and Vocabulary (words & consist of); Consolidating the basic phenomena of Grammar, Phonetics and Vocabulary mentioned as a basis for practice in communication; Initially forming language communication skills such as Listening, Speaking, Reading, and Writing on the basis of firmly grasping theory and proficient practice; Basic concepts of interdisciplinary relationships between Language, Culture and verbal action.

Grammar : present tense is simple; the past tense is simple; the present continuous tense ; past acting tense; Like / would like; modal verbs; comparison levels of adjectives.

Vocabulary: Verbs for everyday activities and spare time; adjective; present and past expressions of time; words describing feelings, states; transportation.

Reading: health; sport; transport vehicle; explore.

Listening: health; sport; transport vehicle; explore

Speaking: ambitious; telling stories

Writing: linking words; report; the story happened

Pronunciation: sound / s/, /z/, /iz /, /d/, /t/, /id/, /ŋ/.

After completing this module, students have the ability: Skimming and grasping the main idea; Read learn some detailed information, guess the meaning of words in context; Listen to the main idea, listen to discover some detailed information, listen to guess the word; The ability to perform simple conversations and simple sentence patterns to convey information, respond to information given by others within the program; The skill of writing sentences with content is within the range of topics learned in the program.

9.11. English 2: 2 credit points

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

Course content summary: This module provides basic and core knowledge of Grammar (sentence structure, verb tense ...), Phonetics (stress & intonation), and Vocabulary (words & consist of); Consolidating the basic phenomena of Grammar, Phonetics and Vocabulary mentioned as a basis for practice in communication; Initially forming language communication skills such as Listening, Speaking, Reading, and Writing on the basis of firmly grasping theory and proficient practice; Basic concepts of interdisciplinary relationships between Language, Culture and verbal action.

Grammar: countable nouns and uncountable nouns; words indicating quantity, articles; future tense with be going to, will; present continuous tense refers to the near future; preposition for place; present perfect; relational statements and type 1 conditional sentences

Vocabulary: words for materials; linking words; synonym; career words; suffixes; prefix.

Reading comprehension: the environment; life; event; Workplace; explore.

Listening: the environment; plans and intentions; job interview; the importance of technology; new invention.

Speaking: presentation report; interview

Writing: Report; email; describe; CV; paragraph; linking words; topic sentence.

Pronunciation: sound / tə /, /ð ə/, /ð i /, /w/, intonation in conditional sentences

After completing this module, students have the ability: Skimming and grasping the main idea; Read learn some detailed information, guess the meaning of words in context; Listen to the main idea, listen to discover some detailed information, listen to guess the word; The ability to perform simple conversations and simple sentence patterns to convey information, respond to information given by others within the program; The skill of writing sentences with content is within the range of topics learned in the program.

9.12 . English 3: 3 credit points

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

Course summary content: This module provides basic and core knowledge of Grammar (sentence structure, verb tense ...), Phonetics (stress & intonation), and Vocabulary (words & consist of); Consolidating the basic phenomena of Grammar, Phonetics and Vocabulary mentioned as a basis for practice in communication; Initially forming language communication skills such as Listening, Speaking, Reading, and Writing on the basis of firmly grasping theory and proficient practice; Basic concepts of interdisciplinary relationships between Language, Culture and verbal action.

Grammar: Passive sentences (present and past); Past Perfect Tense; Used to .. structure; reported speech; uncertain pronouns; conditional sentence type 2;

Vocabulary: verb phrases; holiday-related words; independent preposition; classification of animals; weather.

Reading: history; language; travel and vacation; nature

Listening: learning languages; travel; nature

Speaking: plan for vacation; predict the future

Writing: letter; CV

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

After completing this module, students have the ability to communicate in English, draft documents in English, and read documents in English at pre-intermediate level.

9.13 . Eglish 4: 3 credit points

Time contribution: 3 credit points (45 theorycal hours/0 practical hours/ 90 self – study)

Course summary content: This module provides basic and core knowledge of Grammar (sentence structure, verb tense ...), Phonetics (stress & intonation), and Vocabulary (words & consist of); Consolidating the basic phenomena of Grammar, Phonetics and Vocabulary mentioned as a basis for practice in communication; Initially forming language communication skills such as Listening, Speaking, Reading, and Writing on the basis of firmly grasping theory and proficient practice; Basic concepts of interdisciplinary relationships between Language, Culture and verbal action

Grammar: Passive sentences (present and past); Past Perfect Tense; Used to .. structure; reported speech; uncertain pronouns; conditional sentence type 2;

Vocabulary: verb phrases; holiday-related words; independent preposition; classification of animals; weather.

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

Listening: learning languages; travel; nature

Speaking: plan for vacation; predict the future.

Writing: letter; CV

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

After completing this module, students have the ability to communicate in English, draft documents in English, read documents in English at pre-intermediate level.

9.14. General Informatics: 3 credit points

Time contribution: 3 credit points (30 theorycal hours/30 practical hours/ 90 self – study)

knowledge of computers and computer networks, skills to use basic informatics applications.

After completing this module, students can: Proficient in using computers; can work on Windows operating systems and some application programs; know how to effectively manage and exploit information on computers, use computers safely and have legal knowledge in the use of information technology;

Proficient in Microsoft Word to compose and present a complete document in a form, using a number of auxiliary tools for faster word processing; Using Microsoft Excel to build a complete database to solve real problems; Using calculation functions in Excel from basic to complex to calculate, statistic, and filter necessary information; Use Microsoft PowerPoint to create an engaging and effective presentation; Knowing how to exploit and connect information available on the Internet to serve learning and research; know how to use email to send and receive documents.

9.15. General Sociology - 2 credits

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

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; basic concepts of sociology. 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.

9.16. General Sociology - 2 credits

Time contribution: 2 credit points (30 theorycal hours/0 practical hours/ 60 self – study

Summary of content: The State and law course provides learners with basic knowledge about the state and law such as: origin, nature, form, types of state and law in the calendar. history; Basic legal concepts such as legal norm, legal relations, law implementation, law violation, liability, socialist legislation, legal system; the basic contents of a number of important legal branches in the Vietnamese legal system and the law on anti-corruption.

9.17. Scientific Approach Methodology: 2 credit points

Time contribution: 2 credit points (30 theorycal hours/0 practical hours/ 60 self – study

Summary of the subject content: The module "Scientific Approach Methodology" aims to help students know how to approach science, some scientific research methods, how to identify and select research problems, how to write research proposals, how to conduct research, how to write reports and publish results of scientific topics. After completing this module, students have the most basic knowledge to participate in scientific research.

Skills: The module "Scientific Approach Methodology" helps students to have the ability to think scientific logic, to know scientific reasoning and to analyze science.

9.18. Text Editing: 2 credit points

Time contribution: 2 credit points (15 theorycal hours/30 practical hours/ 60 self – study

The module equips students with the most common understanding of texts: definition, characteristics, classification, requirements about the content and form of the text, the meaning of writing, especially text. administrative version. Students can apply in the learning process at the University and after graduation.

9.19. Zoology: 2 credit points

Time contribution: 2 credit points (30 theorycal hours/0 practical hours/ 60 self – study

The module covers the basics of invertebrates and vertebrates including: morphological features, anatomical features of internal organs, biological features, and phylogenetic features. and development steps of the animal kingdom, in order to be able to acquire the basic sciences and expertise easily and systematically. On the other hand, it helps learners to understand the biological characteristics of beneficial and harmful animals.

9.20. General microorganism: 2 credit points

Time contribution: 2 credit points (26 theorycal hours/4 practical hours/ 60 self – study

The module provides students with basic understanding of the morphological, structural, physiological, biochemical, genetic ... groups of microorganisms commonly found in nature and in the human, animals such as bacteria, viruses, yeasts, fungi ... In addition, the subject also studies the impact of external factors on microorganisms, studies the beneficial and harmful aspects of microorganisms in life, especially in the field of agriculture, therefore understanding and explaining phenomena and the application of microorganisms in learning and research into practical production.

In the otherhand, the course also serves as a premise and basis for students to acquire knowledge of other specialties such as: animal microbiology, veterinary microbiology, infectiousness ... at the same time they can used as a reference for staff working on microbiological research.

9. 21. Environmental Ecology: 2 credit points

Time contribution: 2 credit points (30 theorycal hours/0 practical hours/ 60 self – study

The subject is divided into 5 chapters: General concepts in ecology; Individual ecology; Biomes and biomes; Ecosystem; Ecology with environmental resource management.

The courses provide for students with basic knowledge of ecology; the interaction relationship between an organism and its environment. On that basis, it applies to building a balanced agricultural ecosystem and towards sustainable agricultural development, in the otherhand managing, protecting the living environment and exploiting natural resources in a reasonable and effective manner.

9.22. Specific English for Animal husbandry: 2 credit points

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

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

9.23. Molecular biology:2 credit points

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

Provides basic knowledge of biological macromolecules (DNA, RNA, protein) and the organization and function of life at the molecular level, principles of genetic information. It is the foundation for students to understand the methods and techniques of using

molecular biology tools in veterinary husbandry such as molecular diagnostic methods, testing, new generation vaccines.

9.24. Physics: 2 credit points

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

The Physics module consists of 5 chapters with 27 theoretical hours, exercises, discussions and 3 practical hours.

Theoretical sections: equipping students with general understanding of basic motion types associated with practice, basic laws of Newton; common phenomena in fluid mechanics, important applications of fluid mechanics; equipping with basic knowledge of electromagnetic fields, electromagnetic waves; provide some knowledge about optical waves, quantum optics, photochemical processes; basic knowledge of nuclear physics and use of some nuclear techniques in veterinary husbandry.

Exercises and discussion sections: applying theory to solve problems and phenomena that occur in practice.

Practice sections: students can perform virtual exercises through software and simulate applications to reinforce the theory and apply explanations of laws and physical phenomena in their respective majors.

9.25. Applied Mathematics: 2 credit points

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

The module deals with the following issues: set, mapping, complex numbers, matrices, determinants, systems of linear equations, vector space, some linear models in veterinary husbandry.

9.26. Works Safety and Hygenic: 2 credit points

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

This course has 24 theoretical hours and 6 practical hours. The theory includes the basic knowledge of occupational safety such as:

Labor protection, knowledge to avoid accidents and occupational accidents; Occupational safety techniques in some specific cases such as: chemical safety, electrical safety, fire safety, safety in pressure environment, safe working with lifting equipment and biological safety in the laboratory; Vietnam's legal system of occupational safety and health, rights and obligations of employers and employees in occupational safety and health work; Develop a plan and organize the implementation of the organization safety hygiene management system, build a culture of safety in production;

Practice incident handling and first aid skills at workplace accidents.

9.27. Environmental Pollution: 2 credit points

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

The Environmental Pollution module aims to meet the requirements of improving the quality of students in the fields of management and engineering, as well as those working in factories, companies, businesses, research institutes, schools and State agencies

The environmental pollution module provides students in Animal Sciences and Veterinary Medicine with an overview of knowledge about the environment, environmental composition, the role of the environment, the relationship between development and sustainable development, especially is the problem of environmental pollution of wastewater, exhaust gas and solid waste in livestock production.

The module 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 module consists of 5 main contents as follows: Theoretical basis of environmental pollution, air pollution, water environment pollution, soil pollution and other forms of environmental pollution.

9.28. Vietnam Economic Geography: 2 credit points

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

Summary of the content: Economic Geography module is a socio-economic science, researching the current situation and development orientation of natural resources in Vietnam.

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.

9.29. Physical Education 1: Gymnastics: 1

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

Summary of subject content: The module equips students with knowledge and skills to practice bare-handed exercises and perform athletic content such as running ... After completing this module, students will improve highly aware of regular health exercises to have a better spirit of learning and working.

9.30. Physical Education 2: Volleyball: 1 credit points

Time contribution: 1 credit points (9 theorycal hours/42 practical hours/ 30 self – study)

The volleyball course equips students with general concepts and basic technical systems to help students grasp the basic techniques and the ability to apply them in competitive situations, analyze and evaluate techniques through pictures, videos related to the basic technical system, ask students to participate in group learning and discuss with independent opinions, regardless of other people's opinions and be aware of the implications of volleyball.

9.31. Physical Education 3: Football: 1 credit points

Time contribution: 1 credit points (9 theorycal hours/42 practical hours/ 30 self – study)

Summary of the content: The course equips students with football knowledge and skills. After completing this module, students will increase their sense of regular exercise to have a better spirit of learning and working.

9.32. General biochemistry: 2 credit points

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

This module provides learners with basic knowledge about:

i) Structure, properties and functions of the components that make up the animal's body;

ii) Role and biological effects of vitamins, enzymes, hormones on the growth and development of animals and pathogens due to difficency vitamins, enzymes or hormone disorders;

The digestion, absorption, synthesis, breakdown of the normal metabolic processes of the body of livestock and poultry;

Origin, the cause of most common diseases due to metabolic disturbances in the body of livestock and poultry

9.33. Animal Anatomy: 3 credit points

Time contribution: 3 credit points (39 theorycal hours/12 practical hours/ 90 self – study)

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

9.34. Animal histology and embryology: 2 credits

Time contribution: 2 credits (26 theorycal hours/8 practical hours/60 self-study hours)

The module equips the knowledge of the smallest unit of the body (cytology), about the general organs / tissues of the body (Organizational Studies). Overview), 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

9.35. Animal physiology - 3 credits

Time contribution: 3 credits (39 theorycal 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 slove in fill animal science and veterinary medicnine

9.36. Animal nutrition and feed: 3 credits

Time contribution: 3 credits (37 theorycal hours/16 practical hours/90 self-study hours)

Animal nutrition and feed module provides the following knowledge: i) Nutrients essential to domestic animals; ii) Method of assessing the quality of protein and nutritional value of feed; iii) Nutrients requirement of different types of domestic animals; iv) Characterictic of feed ingredients in livestock v) Characterictic and planting techniques of forage; vi) productive commercial feed methods.

9.37. Veterinary pharmacology - 2 credits

Time contribution: 2 credits (26 theorycal hours/8 practical hours/60 self-study hours)

The module focuses on basic knowledge of pharmacology, pharmacokinetics, and mechanism of action of drugs; drugs acting on specialized organs of the body; metabolic effects, growth stimulants, antimicrobial drugs, antifungal drugs, viruses, antiparasitic drugs and instructions on how to use preventive and treat drugs for livestock and poultry.

9.38. Animal genetics – 2 credits

Time contribution: 2 credits (30 theorycal hours/0 practical hours/60 self-study hours)

Provides basic knowledge of the physical basis of genetics, sex genetics, immunogenetics, population genetics, behavioral genetics, quantitative trait genetics, genetics with applied biotechnology in animal husbandry and veterinary medicine

9.39. Veterinary disease diagnosis - 3 credits

Time contribution: 2 credits (26 theorycal hours/8 practical hours/60 self-study hours)

The Veterinary Diagnosis module 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.

9.40. Immunology of veterinary: 2 credits

Time contribution: 2 credits (30 theorycal hours/0 practical hours/60 self-study hours)

The module 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.

9.41. Animal seclection and reproduction: 3 credit points

Time contribution: 3 credits (37 theorycal hours/16 practical hours/90 self-study hours)

The module covers the basics of animals' adaptations; the origins, appearance characteristics and production capabilities of a number of major livestock breeds in our country.

Evaluate and assess the animal's appearance, fitness and growth; understand sexual growth and evaluation criteria for growth, development and production of animals, cosanguinity among 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.

9.42. Swine husbandry: 3 credit points

Time contribution: 3 credits (39 theorycal hours/12 practical hours/90 self-study hours)

The module provides for learners with knowledge of: (1) The biological characteristics and productivity of swine; (2) Breed and breeding in swine production; (3) Swine nutrition and feed; (4) Breeding techniques of raising boars and sows, piglets and hogs and (5) Organization, production and solutions for waste treatment in swine production.

9.43. Poultry husbandry: 3 credit points

Time contribution: 3 credits (39 theorycal hours/12 practical hours/90 self-study hours)

Poultry husbandry module provides learners with knowledge about: i) Source and method of updating and using poultry breed information in production; ii) Poultry performance assessment techniques; iii) Farming methods; iv) Process Engineering; v) Production organization and management; vi) Scientific research, in egg hatching and poultry husbandry.

9.44. Cattle husbandry: 3 credits

Time contribution: 3 credits (39 theorycal hours/12 practical hours/90 self-study hours)

The modules include general knowledge of the ruminant industry; bulls techniques and management, dairy farming techniques; techniques of animal husbandry for ruminant reproduction and meat production; techniques of breeding goats and calves; cattle breeding techniques and ruminant methods for organizing livestock production.

9.45. Veterinary infectious diseases: 3 credits

Time contribution: 3 credits (39 theorycal hours/12 practical hours/90 self-study hours)

Veterinary Infectious Diseases is the research science of: i) Veterinary Infectious Disease Outline (including the concepts and manifestations of infection, types of infection, modes of action of pathogens, progression period of the disease, stages of the epidemic process, factors affecting the epidemic process, mode of transmission of an infectious disease, principles and measures for prevention and control of infectious diseases); ii) Specialized infectious diseases (including: common infectious diseases of many animals, infectious diseases of cattle, infectious diseases of pigs, infectious diseases of poultry)

9.46. Parasite and veterinary parasitology: 3 credits

Time contribution: 3 credits (37 theorycal hours/16 practical hours/90 self-study hours)

Veterinary Parasitology and Parasitology is the science of research on: i) the underlying problems of the veterinary parasite (including the concepts, classifications, and vital characteristics of the parasites, theory of helminthiasis, 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 livestock and poultry

9.47. Veterinary Internal Desease: 2 credits

Time contribution: 2 credits (24 theorycal hours/12 practical hours/60 self-study hours)

The Veterinary Internal Desease module provides learners with the knowledge of general medical treatment, knowledge of blood transfusion, fluid infusion for animals, and at the same time, learn about the characteristics of the pathology, causes, symptoms, lesions, methods of diagnosis and treatment of diseases in the cardiovascular, respiratory, digestive, urinary, neurological systems, metabolic disorders, toxic substances for the family cattle.

After completing the module on Veterinary Internal Desease, 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.

9.48. Animal Products Inspection: 2 credits

Time contribution: 2 credits (24 theorycal hours/12 practical hours/60 self-study hours)

Animal Products Inspection coures is a research on methods of transport, storage, processing and inspection of veterinary hygiene for animals and animal products such as meat, eggs, milk, fish ... to the purpose of providing humans with animal products of high

value, ensuring food hygiene and safety, health safety for consumers and disease safety for livestock and poultry.

9.49. Veterinary Surgery and obstetric: 3 credits

Time contribution: 3 credits (39 theorycal hours/12 practical hours/90 self-study hours)

The module provides learners with the basic knowledge of Veterinary Surgery and obstetric, as well as research on causes, symptoms, diagnosis and treatment methods of Surgery and obstetric in livestocks.

9.50. Hygiene in animal husbandry: 2 credits

Time contribution: 2 credits (30 theorycal hours/0 practical hours/60 self-study hours)

The module equips learners with basic and up-to-date knowledge of the effects of external factors on the health and production health of animals. Environmental improvement measures contribute to improving livestock productivity and methods of treating livestock wastes, and minimizing environmental pollution.

9.51. Goat, Horse, Rabbit husbandry: 2 credits

Time contribution: 2 credits (30 theorycal hours/0 practical hours/60 self-study hours)

This module provides general knowledge about the importance, economic and ecological significance of breeding goats, rabbits and horses; the domestic and international breeding of goats, rabbits and horses; knowledge about breeds and nutrition for goats, rabbits and horses; scientific basis and techniques for nurturing and using goats, rabbits and horses.

9.52. Plant feed and Pasture: 2 credits

Time contribution: 2 credits (30 theorycal hours/0 practical hours/60 self-study hours)

The module includes contents related to the characteristics of the main plants in the pasture, the factors that affect the pasture.

Methods of investigating and researching grass varieties and classifying them to be suitable for livestock and poultry.

Types of fertilizers and intensive uses for grass varieties.

Techniques of cultivating grass varieties and forage crops under different soil conditions

The method of using pasture in rotational grazing, high intensive farming to specialize in harvesting, cutting and feeding in barns

The processing methods utilization, storing for cattle

9.53. Animal welfare: 2 credits

Time contribution: 2 credits (30 theorycal hours/0 practical hours/60 self-study hours)

The cousre includes chapters on Introduction to animal welfare; animal welfare assessment based on criteria; evaluation of animal welfare according to physiology,

automatic nervous system; Evaluate animal welfare according to physiology - nervous system, endocrine system

9.54. Value Animal Husbandry: 2 credits

Time contribution: 2 credits (30 theorycal hours/0 practical hours/60 self-study hours)

The module provides learners with knowledge of: Regulations on registration of breeding, transportation and use of rare animal products; Breeding techniques, production organization, management, and research on bees, silkworms and other rare animal species.

9.55. Veterinary pathology 3 credits

Time contribution: 3 credits (39 theorycal hours/12 practical hours/90 self-study hours)

The Pathology module is the study of the functional and morphological changes in tissues and cells when the body becomes ill. The subject consists of 7 chapters. Chapter 1: Basic pathological concepts. Chapter 2: Basic pathological processes. Chapter 3: Inflammation and repair of the wound. Chapter 4: The basic damage to cells and tissues, growth disorders. Chapter 5: Diseases in the organ system. Chapter 6: Pathologies of bacterial diseases. Chapter 7: Pathology of viral diseases.

This is the Pre-Clinical Course of Veterinary Medicine and serves as a link among the foundation disciplines and other clinical subjects. This module equips learners with some basic principles in pathology as the basis for disease diagnosis.

In the otherhand, this course equipping student 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.

9.56. Veterinary Toxicology: 2 credits

Time contribution: 2 credits (28 theorycal hours/4 practical hours/60 self-study hours)

The Veterinary Toxicology module is equipped with the following knowledge: The concept of a poison, how a poison enters the animal's body, and its impact on the body.

Understand to diagnose and treat poisoned animals, understand to prevent poisoning and appropriate handling measures when poisoned animals.

9.57. Veterinary Epidemionogy: 2 credits

Time contribution: 2 credits (30 theorycal hours/0 practical hours/60 self-study hours)

The module 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) Understand to take samples and the number of samples in the study.

9.58. Fresh Water Fish Breeding Techniques: 2 credits

Time contribution: 2 credits (30 theorycal hours/0 practical hours/60 self-study hours)

The Freshwater Fish Breeding module provides learners with biological characteristics of some commonly raised freshwater fish species in Vietnam, techniques for fish hatching and rearing, freshwater fish farming techniques, prevention and treatment techniques for freshwater fish.

9.59. Zoonosis 2 credits

Time contribution: 2 credits (30 theorycal hours/0 practical hours/60 self-study hours)

Zoonotic Diseases is the science that studies: i) An overview of zoonotic diseases (including the concept and general introduction of zoonotic diseases; main form of infectious disease; Species of animals that carry the pathogen.);

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

9.60. Wildlife Diseases: 2 credits

Time contribution: 2 credits (30 theorycal hours/0 practical hours/60 self-study hours)

The Wildlife Diseases module is equipped with the following knowledge: i) Classification of mammals, classification of birds, classification of reptiles, classification of rodents);

Some common diseases in animals (including: infectious diseases, parasitic diseases, internal - external - obstetric diseases);

Some common diseases of the birds (infectious diseases, parasitic diseases)

Some common diseases in reptiles (infectious diseases, parasitic diseases);

Some common diseases in rodents (infectious diseases, parasitic diseases)

9.61. Cat and dog disease: 2 credits

Time contribution: 2 credits (26 theorycal hours/8 practical hours/60 self-study hours)

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

In addition, the module 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 to prevent and treat real cases.

Finally, the module also equips students with skills to adapt to the working environment of a veterinarian in practice.

9.62. Bee and silkworm husbandry 2 credits

Time contribution: 2 credits (30 theorycal hours/0 practical hours/60 self-study hours)

The module provides learners with knowledge of: Regulations on registration of breeding, transportation and utilization of rare animal products; Breeding techniques, production organization, management, and research on bees, silkworms and other rare animal species.

9.63. Technology in Animal Reproduction: 2 credits

Time contribution: 2 credits (26 theorycal hours/8 practical hours/60 self-study hours)

The course provides learners with scientific knowledge about: i) male and female sexual physiology, ii) Techniques of extraction and testing of semen quality. techniques of brewing and conserving semen, iii) Artificial insemination. Embryo transfer and some other reproductive technologies used in animal husbandry.

9.64. Exprimental Methods in Animal Husbandry: 2 credits

Time contribution: 2 credits (26 theorycal hours/8 practical hours/60 self-study hours)

The experimental methodology module in Animal Science and Veterinary medicine consists of 5 chapters:

Chapter 1. Purpose, classification and basic principles when designing experiments in Animal Science and Veterinary Medicine

Chapter 2. Methods of designing experiments

Chapter 3. Some bio-statistics concepts and parameters.

Chapter 4. Experimental Data Analysis Method

Chapter 5. Processing statistics using computer software

This module equips students with the knowledge of the basic principles of designing an experiment, methods of designing one-factor and two-factor experiments, the statistical parameters of common samples, and equations. Methods of analyzing experimental data and processing research results using computer software such as SAS, Minitab software

9.65. Food safety and Hygence: 2 credits

Time contribution: 2 credits (26 theorycal hours/8 practical hours/60 self-study hours)

The module equips food safety and hygiene knowledge. Basic knowledge about food quality management programs according to HACCP, ISO 9000, VietGAP in animal husbandry.

9.66. Veterinary Laws: 2 credits

Time contribution: 2 credits (30 theorycal hours/0 practical hours/60 self-study hours)

Introduction to the Law on Livestock Production No. 32/2018 / QH 14

9.67. Internship training 1: Injection and disease preventation for animal: 2 credits

Time contribution: 2 credits (0 theorycal hours/120 practical hours/60 self-study hours)

The module equips skills use and preserve vaccines, approach animals, and techniques in vaccination.

9.68. Internship training 2: Internship training on animal husbandry: 2 credits

Time contribution: 2 credits (0 theorycal hours/120 practical hours/60 self-study hours)

Understanding select and match hens, select ingredients and fomulate diets for poultry, competent in some of professional tasks in the process of preparing the house, raising and caring for poultry intensive and semi-industrial.

Understanding select, select and match direct mating, AI, select ingredients and formulation diets for swine, competent occupational tasks in the process of preparing the barn, raising and taking care swine industrial.

Understand select and match direct mating, AI, choose ingredients and formulate diets for dairy cows and beef. competent occupational tasks in the process of preparing barns, processing refined and raw food; raising and taking care of industrial and semi-industrial cows; Cow's milk squeezing and processing, grass production and harvesting

9.69. Thesis: 10 credits

Time contribution: 10 credits (0 theorycal hours/600 practical hours/300 self-study hours)

Prior-course: All modules in the curriculum framework

Co-requisites: Experimental methods in animal husbandry, poultry, swine production, cattle production.

The course outline writing skill module and graduation thesis includes 2 contents.

Part 1 Skills to write outlines. This section includes the following contents: 1. Introduction of the research topic. Overview of domestic and foreign research results related to research issues. Urgency of research topics. The purpose and objectives of the research topic and the scientific significance of the research topic.

Scientific basis of research topic. Basic conditions for implementation. Overview of research results at home and abroad

Materials, content and research methods. An overview of the study site, time, materials, content and methodology

Expected results achieved in the implementation of the paramaters and monitoring targets

Conclusions and recommendations after completion of the study

Part 2. Thesis

Base on outline, the contents have been deployed. The collected research results are processed biological statistics and are interpreted through the graduation thesis table

9.70. Skilled practice 1: Laboratory skilleds: 2 credits

Time contribution: 2 credits (0 theorycal hours/120 practical hours/60 self-study hours)

The course equips students with skills in cleaning and disinfecting laboratory equipment and tools. Prepare the medium, culture, and dye the specimen in a microbiological laboratory.

9.71. Skilled practice 2: Plant feed , pasture and cattle husbandry: 1 credit

Time contribution: 1 credit (0 theorycal hours/60 practical hours/30 self-study hours)

The module equips learners with skills to prepare conditions for raising buffaloes, cows, goats, and sheep (barns, livestock tools ...);

Rules of a cattle establishment; Feed for all kinds of ruminant; Characteristics of the species of ruminant cultured in the establishment; Technique for selecting ruminant; ruminant breeding techniques (Sanitation, feeding, drinking ...);

Check and evaluate health status of cattle herds; Implement the process of disease prevention and treatment (Veterinary hygiene, prevention with vaccines, use of medicines for prevention and treatment ...); Waste treatment in ruminant establishments; Find out about the farm's production plan through books / interviews; Know the economic efficiency when farming energy conservation / year.

9.72. Skilled practice 3: Skilleds on swine husbandry: 1 credit

Time contribution: 1 credit (0 theorycal hours/60 practical hours/30 self-study hours)

The course equips learners with skills to prepare conditions for swine raising (barns, tools ... in swine breeding);

Rules of a swine farm; Feed for pigs; Characteristics of swines raised in the establishment; swine selection techniques; swine breeding techniques (Cleaning barns, feeding, drinking ...);

Checking and evaluating the health status of swine; Implement the process of disease prevention and treatment (Veterinary hygiene, prevention with vaccines, use of medicines for prevention and treatment ...); Waste treatment in swine farms; Find out about the farm's production plan through books / interviews; Know the economic efficiency when raising pigs / year.

9.73. Skilled practice 4: Skilleds on poultry husbandry: 1 credit

Time contribution: 1 credit (0 theorycal hours/60 practical hours/30 self-study hours)

The module equips learners with skills to prepare poultry farming conditions (barns, tools ... in poultry farming);

Rules of a poultry farm; Feed for poultry; Characteristics of poultry species raised in the establishment;

Poultry selection techniques; Poultry breeding techniques (Sanitation of barns, feeding, drinking ...); Check and evaluate the poultry health status; Implement the process

of disease prevention and treatment (Veterinary hygiene, prevention with vaccines, use of medicines for prevention and treatment ...);

Waste treatment in poultry farms; Find out about the farm's production plan through books / interviews; caculate economic efficiency of poultry / year

RECTOR	**DEAN ASVM**
HIỆU TRƯỞNG PGS.TS. Trần Văn Điền	**Phan Thi Hong Phuc**