

PROGRAMME SPECIFICATION

1. Admissions/Management Information	
Title of the programme	
Bachelor of Veterinary Medicine	
Vietnamese Qualification Framework (VQF) level	
Bachelor (Level 6)	
Awarding institution	Teaching institution
Tra Vinh University	Tra Vinh University
Faculty	
School of Agriculture and Aquaculture	
Faculty webpage	
www.nnts.tvu.edu.vn	
Name of the final award	
Bachelor of Veterinary Medicine	
Programme code	
52640101	
Admissions criteria	
- Method 1: Review the results of the National High School Exam, based on a score of 03 subjects according to the admission subject clusters that meets	

the minimum quality assurance threshold for university entrance under the Ministry of Education and Training's regulations; minimum required score of TVU (minimum required score, usually the total score of 3 exam subjects ≥ 15), the subject groups for admission are as follows:

A02: Maths, Chemistry , English

B00: Maths, Chemistry, Biology

D08: Maths, Biology, English

D90: Maths, Natural Science, English

- Method 2: Review the average score of grade-12 high school subject cluster compared with the minimum mark of 6.0 to each subject. Students have to pass an interview for their corresponding majors.

- Method 3: Directly admitting excellent students at the national and international exams.

Length and status of the programme(s) and mode(s) of study

Programme	Length (years)	Status (full-time/part-time)	Start dates/months (if applicable – for programmes)	Mode
Bachelor of Veterinary Medicine	4.5 years	Full-time	September	Face-to-face, campus-based

Language(s) of study

Vietnamese

Language(s) of assessment

Vietnamese

2. Programme accreditation by Professional, Statutory or Regulatory Bodies

N/A

3. Programme leader

Names of programme leader and key members of staff responsible for designing, maintaining and overseeing the programme.

Lam Thai Hung (programme leader), Huynh Kim Huong, Nguyen Thuy Linh, Nguyen Thi Kim Quyen, Ho Quoc Dat

4. Job profiles	
<p>Technical staff at farms, companies, veterinary clinics, veterinary departments, laboratories among others</p> <p>Sale management staff of livestock breeding, animal feed and veterinary medicine</p> <p>Staff of trade production management of livestock breeds, animal feeds, veterinary medicines.</p> <p>Start-up of jobs and businesses (animal farms, veterinary drug stores, animal feed, veterinary clinics, animal breeds, breeding equipment)</p>	
5. Purpose and learning outcomes of the programmes	
5a. Educational philosophy and teaching/learning strategy	
<p>The philosophy of the program is to learn from experience "Learning by doing"</p> <p>The program that follows this philosophy is based on two principles:</p> <p>1) Learning only really begins if the learner is interested in learning</p> <p>2) People actively construct knowledge from their own experience.</p> <p>Learners will participate in study and work at veterinary enterprises, through which they will apply the knowledge learned to practice, discover new knowledge, develop creative thinking and form career competencies. .</p>	
5b. Programme objectives	
PO 1	Start a business, and work well as a graduate of Bachelor of Veterinary Medicine
PO 2	Research, apply, and transfer new technology, contribute to the development in the veterinary industry of Vietnam and the world
PO 3	Apply creative thinking, critical thinking, and problem solving skills in a variety of contexts
PO 4	Pursue lifelong learning, improve one's qualifications or professional competence through participation in postgraduate training programs and through workshops, learning from professional and social organizations
PO 5	Perform work with professional ethics, civic responsibility, environmental and health awareness for the community and society
5c. Expected learning outcomes of the programme	
ELO 1	Apply scientific, technical, social knowledge to solve contemporary issues in the field of Veterinary Medicine.
ELO 2	Analyze data to conduct surveys and research in the field of veterinary medicine.

ELO 3	Assess the impact of the environment on animal behavior and welfare, and assess real social concerns about animal use.
ELO 4	Design plans for caring, treatment, and health management of cattle and poultry in the Vietnamese market, with the goal of protecting the environment, improving animal health, and ensuring food safety.
ELO 5	Apply creative thinking, critical thinking, and problem solving skills in a variety of contexts.
ELO 6	Work independently, lead a team, and manage a project towards its goals.
ELO 7	Communicate effectively, understand cultural differences, read English documents in the field of veterinary medicine
ELO 8	Provide technical advice & business solutions in the field of animal husbandry that maximize customer benefits.
ELO 9	Operate modern equipment and become familiar with new emerging technology in the field of Animal Health.
ELO 10	Develop a professional work attitude, uphold professional ethics, demonstrate an awareness of environmental and human protection, love and protect animals.
ELO 11	Demonstrate a spirit of entrepreneurship and life-long learning

5.d. Other features of the programme

i) Internationalisation/ globalisation

How does the programme promote internationalisation and encourage students to develop cross-cultural capabilities?

The program aims to equip students with the capacity to work in the animal health industry to meet the requirements of the domestic and foreign labor markets, compatible with regional standards.

The program aims to get students to participate in learning in the Asian region. Students are offered to participate in internationally academic exchange activities in countries in the region. In addition, the school has international exchange activities to create a multicultural communication environment.

ii) Inclusivity

How will good practice in ensuring equality, diversity and inclusion be embedded in the design, content and delivery of the programme?

The program provides learning opportunities for all students regardless of ethnicity, gender or disability status

6. Reference points and programme regulations
6.a. Relevant subject benchmark statements and other external and internal reference points used to provide information on programme outcomes:
The program is based on Vietnam National Framework for Animal Health major (Decision No. 1982 / QD-TTg dated on October 18, 2016) The program is designed to be comparable to with the best content of prestigious national programs (Ho Chi Minh City University of Agriculture and Forestry, Vietnam National University of Agriculture) and foreign programs (Gadja Mada University, Indonesia; Mahidol University, Thailand; UC Davis University, USA; Queensland University, Australia; University of London, UK)
6b. University award regulations
Accumulate the number of modules and the number of credits in the prescribed program Cumulative GPA of the whole course is from 2 Hold a certificate of national defense and physical education Have B1 foreign language certificate or pass 4 modules of non-major English, soft skills (4 certificates)

7. Programme structure and requirements including levels, courses, credits, etc.

7.a. Course structure

No.	Code	Course name	Credit
SEMESTER 1			
Compulsory courses			14
1	191.00	Physical Education 1	1
2	190027(I) 190028(II) 190029(III) 190030(IV)	Military Education	165 periods
3	180000	Principles of Marxist and Leninist	5
4	410291	English (Beginner)	3

5	220220	General Informatics	3
6	130017	General Chemistry	3
SEMESTER 2			
Compulsory courses			18
1	192.10	Physical Education 2	1
2	410292	English (Elementary)	4
3	180001	Thoughts of Ho Chi Minh	2
4	330182	General Cytology	2
5	110009	Advanced Mathematics	3
6	130016	Organic Chemistry	3
7	110006	Probability and Statistics	2
8	340189	Biochemistry	2
SEMESTER 3			
Compulsory courses			23
1	193.03	Physical Education 3	1
2	180004	Revolution Lines of Vietnam Communist Party	3
3	450015	General Law	2
4	410293	English (Pre-Intermediate)	3
5	330192	Animal Physio-biology	2

6	330068	Swine production	2
7	330069	Poultry production	2
8	330183	General Histology	2
9	330091	Field visit	1
10	330245	Internship 1: Veterinary Professional Orientation	6
SEMESTER 4			
Compulsory courses			17
1	410294	English (Intermediate)	3
2	330191	Veterinary Legislation	2
3	330077	Animal Anatomy	2
4	330058	Ruminant production	2
5	330195	Embryology	2
6	290000	Research Methodology	2
7	330233	Biotechnology	2
8	460003	General Microbiology	2
SEMESTER 5			
Compulsory courses			18
1	330232	Veterinary pathology	2
2	330151	Veterinary Microbiology	3

3	330166	Veterinary Pharmacology	3
4	330203	Veterinary Epidemiology	2
5	330076	X-ray, Ultrasound	2
6	330246	Internship 2: Monogastric Diagnosis and Treatment	6
Optional courses			2
1	330241	Experimental Animal production	2
2	330242	Animal Welfare	2
SEMESTER 6			
Compulsory courses			11
1	330240	Veterinary Pathophysiology	3
2	330056	Statistics and Experimental Design	2
3	330197	Veterinary Immunology	2
4	330055	English for Veterinary Medicine	2
5	330188	Veterinary Diagnosis	2
Optional courses			6
1	330234	Climate Change in Livestock	2
2	330098	Combined Biology Safety Model	2
3	330237	Food Safety	2
4	470121	Development Economics	2

5	330236	Fish, Shrimp Diseases	2
6	330238	Zoonotic diseases	2
SEMESTER 7			
Compulsory courses			16
1	330201	Veterinary Infectious Diseases	3
2	330073	Pet Diseases	2
3	330217	Veterinary Parasitology	3
4	220020	Start-up	2
5	330247	Internship 3: Ruminant Diagnosis and Treatment	6
Optional courses			4
1	330243	Veterinary Pharmacological Materials	2
2	330063	Rabbit production	2
3	330075	Pet production	2
4	330100	Veterinary Toxicology	2
SEMESTER 8			
Compulsory courses			17
1	330194	Veterinary Surgery	2
2	330088	Veterinary Inspection	2
3	330094	Nutritional Diseases	2

4	330200	Veterinary internal Medicine	3
5	330064	Veterinary Reproduction and Obstetrics	2
6	330248	Internship 4: Professional Practices	6
Optional courses			4
1	330097	Production and Occupational Safety Management	2
2	330108	Wild Animal Production	2
3	330053	Artificial Insemination	2
4	330107	Microbiology in Animal production	2
5	330054	Livestock Hygiene	2
SEMESTER 9			
Compulsory courses			7
1	000002	Thesis	7

7.b. Optional course list

None

7.c. Explanation of the programme and assessment design

i) Contact with staff

Please explain how the programme's design maximises the value of students' contact time with staff (which may be face-to-face, virtual, synchronous or asynchronous), including through the use of technology-enhanced learning. For example, giving students resources for their independent study which then enables a class to be more interactive with a greater impact on learning.

The program is designed with 157 credits, 74 theoretical and 83 practice hours. In particular, each subject is supplemented by an E-learning system, where students can interact with teachers online anytime and anywhere. Instructors can provide case studies, discussion exercises or thematic exercises in order to help students practice at home and then send answers through the system. In addition, for specialized subjects, each subject allows students to implement projects, thereby forming a sense of self-study in each student group, improving professional and

<p>soft skills. Students can also make start-up models at an experimental farm, create their own livestock plans and take care of and sell products from these models.</p>
<p>ii) Students' independent study and formative work</p> <p>Please outline key features of how independent study and formative work has been designed to support the progressive achievement of the programme learning outcomes. (For example, the use of online resources, which may also incorporate formative feedback; opportunities for further learning from work-based placements).</p>
<p>The University offers an online resources to help students search for learning materials at https://lib.tvu.edu.vn/</p> <p>Lecturers also post documents, images and videos related to the subjects they teach through E-learning system as online resources for students</p>
<p>iii) Summative Assessment</p> <p>Please outline how summative assessment within and across courses has been designed to support and evidence the progressive achievement of the programme learning outcomes. (For example, the use of different assessment methods at the 'introduction' stage compared to those used to evaluate deeper learning through the application of skills and knowledge later in the programme).</p>
<p>Introductory courses are assessed by answering short questions, presentations, oral and written exams</p> <p>Subjects that are practical and reinforce key topics are assessed by giving students presentations (rubric assessing presentations), case studies, group exercises, rubrics for assessing practice exams</p> <p>In addition, for specialized subjects, students are assessed through the implementation of a project and each lecturer will give specific rubrics to assess to group activities, attitudes, content and products</p> <p>For the graduation thesis, students report to the Board and are assessed based on the project scorecard including content, form, style, attitude, and knowledge when answering questions</p>
<p>8. Contribution of casual teaching staff and/or staff external to the University</p>
<p>If casual teaching staff and/ or staff external to the University will be involved in delivery of the programme, please outline how they will contribute and how the programme team will ensure that individuals are adequately supported and monitored</p>
<p>The program is also assisted by experts from businesses, institutes and other institutions. Based on the needs of the training program, the school plans to invite visiting lecturers. The school informs them with regulations in teaching for assessment to student learning outcomes including grades, rubrics and products, among other things</p>
<p>9. Work-based learning</p>

9.a. Does the programme include the opportunity to undertake work-based learning/ placements?
The program provides opportunities for practical experiences at various companies and business. The whole course has 4 practical training sessions at these enterprises which consists of career orientation, diagnosis and treatment of cattle and graduation practice
9.b. Is it a compulsory or optional element of the programme?
Compulsory element
9.c. Briefly detail the nature of the work-based learning.
<p>For helping students observe veterinary activities, the program is designed with modules:</p> <p>Field trip: after finishing general subjects, students are allowed to visit food factories, veterinary medicine factories, cattle and poultry farms of companies, cattle slaughtering establishments and Pasteur institute, thereby helping students choose their careers in the future</p> <p>Internship 1: After finishing the field trip module, students will be able to join practical experience opportunities at companies, farms, clinics, etc. for 3 months (Co-op 1), where they will be able to participate on hands-on jobs and also observe and record practical knowledge in the field of Animal Health</p> <p>Internship 2: students can participate in Co-op No. 2 related to diagnosis and treatment of cattle at the visit sites such as pigs, poultry, dogs and cats with a period of 3 months. Here, they will be trained in clinical diagnostics, subclinical methods, and treatments for common diseases</p> <p>Internship 3: Students can take part in Co-op No. 3 related to the diagnosis and treatment of ruminant cattle for a period of 3 months. Here, they will be offered trainings in clinical and subclinical methods of diagnosis and treatment of common diseases</p> <p>Internship 4: students can take part in Co-op No. 4 of graduation internship. Here, they will be guided to conduct scientific research for their next semester</p>
9.d. Who will be responsible for sourcing and arranging the placement?
The department assigns a lecturer to coordinate Co-op: planning, contacting and selecting locations and arranging students to go to enterprises. In addition, subject lecturers will assist in practice sites and provide guidance and supervision to each student group during their internships on a regular basis
9.e. What is the duration of the work-based learning?
The program is designed for 9 semesters, in which four are for internships (3 months / 1 internship)

9.f. How will work-based learning be assessed?

Apart from being an internship employee at the enterprise, the student must also practice real topics given by experts here. The result of this module is the involvement of instructor, supervisor and the 3-member council, whose score is divided average according to the components: score of the internship, work with instructor, final product and report

10. Student involvement in programme development

How were current and/ or former students involved in the development of this proposal/ programme?

Students and alumni were invited to participate in the Program Advisory Council

Every two years, the school, QA department, academic affair office and department of strategic development have a conference to listen to the ideas from alumni including suggestions for the progress of the program such as comments, strengths / weaknesses, and developmental trends of the industry

In addition, there are regular alumni surveys and workshops each year (yearly), Tracer program (Semester), Workshop and Seminar (each academic year).

11. Transfers out of or into the programme

11.a. Transfers into the programme will be possible?

Yes

11.b. Transfers out of the programme will be possible?

Yes

11.c. Opportunities for further study / student exchange (attention to the ASEAN region)

Graduates can continue pursuing their higher education at domestic and foreign institutions. They can also participate in seminars at regional institutions in the form of student exchanges

12. Quality and Standards

- Deliver training based on the demand of the labor market with the participation of stakeholders
- Learners are central in the organisational structure and are always guaranteed with the best rights and benefits in learning, scientific research, job opportunities and supportive services of the university
- Expand cooperation with businesses, employers and partners nationwide and worldwide
- Maintain and develop a transparent and open working environment, ensuring that all members of the school are fully promoting their capabilities

- Maintain and continually improve the internal quality assurance system based on the ISO 9001 system and national and international education quality standards

- Apply and develop the North American community college model

13. Date on which this programme specification was written or revised:

15/08/2018

14. Matrix showing how the programme learning outcomes are achieved through the courses

Semester	COURSES	ELO1	ELO2	ELO3	ELO4	ELO5	ELO6	ELO7	ELO8	ELO9	ELO10	ELO11
I	Principles of Marxist and Leninist	S	N	N	N	S	S	N	N	N	S	N
I	English (Beginner)	S	N	N	N	S	S	S	N	N	N	S
I	Physical Education 1	S	N	N	N	N	N	N	N	N	S	N
I	Military Education	S	N	N	N	S	S	S	N	N	S	N
I	General Informatics	S	N	N	N	S	N	S	N	S	N	S
I	General Chemistry	S	N	N	N	S	S	S	N	N	S	S
II	Thoughts of Ho Chi Minh	S	N	N	N	S	N	N	N	N	S	N
II	English (Elementary)	S	N	N	N	S	S	S	N	N	N	S
II	Physical Education 2	S	N	N	N	N	N	N	N	N	S	N
II	General Cytology	S	N	N	N	S	S	S	N	N	S	S
II	Advanced Mathematics	S	N	N	N	S	S	S	N	N	S	S
II	Organic Chemistry	S	N	N	N	S	S	S	N	N	N	S
II	Probability and Statistics	S	N	N	N	S	S	S	N	N	S	S
II	Biochemistry	S	N	N	N	S	S	S	N	N	S	S
III	Revolution Lines of Vietnam Communist Party	S	N	N	N	S	N	N	N	N	S	S
III	English (Pre-Intermediate)	S	N	N	N	S	S	H	N	N	S	S
III	Physical Education 3	S	N	N	N	N	N	N	N	N	H	N
III	General Laws	S	N	N	N	S	S	N	S	N	S	N
III	Swine production	S	S	S	S	S	S	S	S	S	S	S
III	Poultry production	S	S	S	S	S	S	S	S	S	S	S
III	General Histology	S	N	N	N	S	S	S	N	N	S	S
III	Field Visit	S	S	S	S	S	S	S	S	S	S	S
III	Animal Physiobiology	S	N	S	S	S	S	S	N	N	S	S

III	Internship 1: Veterinary Professional Orientation	S	S	S	S	S	S	S	S	S	S	S
IV	English (Intermediate)	S	N	N	N	S	S	S	N	N	S	S
IV	Veterinary Legislation	H	N	N	N	H	S	S	S	N	H	N
IV	Ruminant production	S	S	S	S	S	S	S	S	S	S	S
IV	Animal Anatomy	S	N	N	N	S	S	S	N	N	S	S
IV	Embryology	S	N	N	N	S	S	S	N	N	S	S
IV	Research Methodology	S	S	N	N	S	S	S	N	S	S	S
IV	General Microbiology	S	N	S	S	S	S	S	N	N	N	S
IV	Biotechnology	S	N	N	N	S	S	S	N	N	S	S
V	Veterinary Pharmacology	N	N	S	S	S	S	S	S	S	S	S
V	Veterinary pathology	N	N	S	S	S	S	S	N	N	S	S
V	Veterinary Microbiology	N	N	S	S	S	S	S	S	N	N	S
V	Veterinary Epidemiology	N	N	S	S	S	S	S	S	N	N	S
V	X-ray - Ultrasound	N	S	S	S	S	S	S	S	H	S	S
V	Experimental Animal production	S	S	S	S	S	S	S	S	S	S	S
V	Animal Welfare	N	N	S	S	S	S	S	S	N	N	S
V	Internship 2: Monogastric Diagnosis and Treatment	N	S	S	H	S	S	S	S	S	S	S
VI	Veterinary Pathophysiology	N	N	S	S	S	S	S	N	N	S	S
VI	Veterinary Immunology	N	N	S	S	S	S	S	N	N	S	N
VI	English for Veterinary Medicine	S	N	N	N	S	S	H	N	N	H	H
VI	Veterinary Diagnosis	N	N	H	H	S	S	S	S	S	H	H
VI	Statistics and Experimental Design	N	H	N	N	S	S	S	N	H	H	S
VI	Food Safety	N	N	S	S	S	S	S	S	S	S	S
VI	Development Economics	S	N	S	N	S	S	S	N	N	S	H
VI	Fish, Shrimp Diseases	N	N	S	S	S	S	S	S	N	S	S
VI	Zoonotic Diseases	N	N	H	H	S	S	S	H	S	H	H
VI	Climate Change in Livestock	S	S	S	N	S	S	S	S	N	H	S
VI	Combined Biology Safety	S	S	H	H	S	S	S	H	N	H	S

	Model											
VII	Veterinary Infectious Diseases	N	N	H	H	S	S	S	H	S	H	H
VII	Pet Diseases	N	N	H	H	S	S	S	H	S	H	H
VII	Pet Production	S	S	S	S	S	S	S	S	S	H	S
VII	Rabbit Production	S	S	S	S	S	S	S	S	S	H	S
VII	Veterinary Pharmacological Materials	N	N	S	S	S	S	S	S	S	S	S
VII	Veterinary Toxicology	N	N	S	S	S	S	S	S	S	S	S
VII	Veterinary Parasitology	N	N	H	H	H	H	H	H	S	H	H
VII	Start-up	S	N	N	N	S	S	S	N	N	N	S
VII	Internship 3: Ruminant Diagnosis and Treatment	N	H	H	H	S	S	S	H	S	H	H
VIII	Veterinary internal Medicine	N	N	H	H	S	S	S	H	S	H	H
VIII	Veterinary Surgery	N	N	N	H	H	H	H	S	S	H	H
VIII	Veterinary Inspection	N	N	H	H	H	H	H	N	H	H	H
VIII	Nutritional Diseases	N	N	H	H	H	H	H	H	S	H	H
VIII	Veterinary Reproduction and Obstetrics	N	N	H	H	H	H	H	H	S	H	H
VIII	Production and Occupational Safety Management	N	N	N	H	H	H	H	H	S	H	H
VIII	Wild Animal production	N	N	H	H	H	H	H	H	S	H	S
VIII	Artificial Insemination	N	N	N	H	H	H	H	H	S	H	S
VIII	Microbiology in Animal production	N	N	N	H	H	H	H	H	S	H	S
VIII	Livestock Hygiene	N	N	N	H	H	H	H	H	S	H	S
VIII	Internship 4: Professional Practices	N	H	H	H	H	H	H	H	H	H	H
IX	Thesis	N	H	H	H	H	H	H	H	H	H	H

15. Course description

1 Principles of Marxist and Leninist

Prerequisite: None

The course will cover the following topics: Dialectic materialism, historical materialism, value doctrine, surplus value doctrine; doctrine of monopoly capitalism, state monopoly capitalism, historical mission of the working class, socialist revolution, socio-political issues normative in the process of socialist revolution, socialism realism and outlook.

2 English (Beginner)

Prerequisite: None

Students will be equipped with English knowledge of very basic level according to the Common European Framework (CEFR) –Level A1. Students will be acquainted with all language skills: listening, speaking, reading and writing which are developed through each topic in the course book, such as friends, shopping, food and drinks, leisure and hobbies, clothes, travel, sport, family, books and studying, language and communication. Simultaneously, students will be exposed to some of the test samples of the CEFR assessment.

3 General Informatics

Prerequisite: None

The course will acquaint students with using the Microsoft Windows, an application set of office in the Microsoft Office, such as Word, Excel and PowerPoint, fundamental services on the Internet, and some of the applications of information and technology (IT). Besides, students will be introduced some fundamental legal issues relating to the field of IT.

4 General Chemistry

Prerequisite: không

The course will enable students to be exposed to basic atomic structure and circulatory system, chemical elements, molecular structures and chemical bonds, aggregation states of matter, thermodynamic principles in chemistry applications, kinetic chemistry, chemical balance, and solution and redox and electrochemical reactions. Furthermore, the course will show students how to calculate value of chemical quantities, and apply general Chemistry into interpreting Chemical properties. Moreover, students will have a chance to learn themselves on critical thinking, activeness, creativeness, publish-speaking confidence, group work, effectively researching studying materials and calculating values.

5 English (Elementary)

Prerequisite: Beginner

Students will be equipped with English knowledge at a basic level according to the Common European Framework (CEFR) –Level A2. Students will be acquainted with all language skills: listening, speaking, reading and writing which are developed through each topic in the course book, such as sports, friendly people, jobs, outdoor activities, travel, past activities, facts and figures, celebration, studying. Besides, students will be able to use their knowledge of English in their daily life, such as writing an email/letter, reading and writing messages, and participating in familiar conversations.

6 Ho Chi Minh's Thoughts

Prerequisite: Principles of Marxist and Leninist

The course will display the knowledge of fundamental thoughts of Ho Chi Minh, understanding of the ideological system, Ho Chi Minh's morality and cultural values. What is more, the course will provide students with an understanding of fundamental ideology, guiding principles of the Vietnamese Communist Party and the revolution of the Socialist Republic of Vietnam. Students will continue to be updated with the fundamental knowledge of Marxism-Leninism, which contributes to creating a new moral ground of human beings.

7 General Cytology

Prerequisite: None

This course will equip students with knowledge on cell structures and metabolism through cell membranes, photosynthetic and respiratory mechanisms. At the same time, students will be shown how to identify genetic mechanisms, genetic engineering and recognize basic issues on evolution.

8 Advanced Mathematics

Prerequisite: None

The course will provide students with some of the fundamental knowledge on calculus math, which is necessary for approaching specialized courses like constant, limit, continuity, differential calculus and integral calculus of one variable, multivariables, system of linear equations, matrix application and basic differential equation.

9 Organic Chemistry

Prerequisite: General Chemistry

The course will help students to differentiate organic compounds, identify structures, isomers and properties of organic compounds and apply theory into organic synthesis. The course will also help students to gain soft skills like responsibility, discipline, autonomy and motivation when researching and completing assessments.

10 Probability and Statistics

Prequisite: General Informatics

The course will equip students with the basic concepts of probability, random variables, discrete variables, binomial variables, continuous variables, asymptotic and ambition and variance. Students will also be able to apply methods to defining usual probability and knowledge of mathametic statistics. What is more, students will be able to explain problems of calculating classical probability, geometry, conditions, solve common probability problems in reality and scientific research. The course also helps students to gain, autonomy, and explore of probability applications in reality and scientific research.

11 Biochemistry

Prerequisite: General Chemistry

The course will cover the following fundamental contents: Structure, characteristics, properties and metabolism of proteins, carbohydrates, lipids, enzymes and vitamins.

12 Revolution Lines of Vietnam Communist Party

Prerequisite: Ho Chi Minh's Thoughts

The course will display the revolution lines proposed by the Vietnamese Communist Party in leading the Vietnamese Revolution from 1930 up to present. In the course, students will fundamentally understand the birth of the Vietnamese Communist Party, its first political credo, ways of fighting for power (1930-1945); lines of resistance against French colonialists and American imperialists (1945-1975), lines of industrialization, lines of building a socialist-oriented market economy, ways of building the political system; ways of building and developing the Vietnamese culture, approaches of solving social issues and foreign policies.

13 General Laws

Prerequisite: None

The course will equip students with fundamental knowledge of state and laws in general, with state and Vietnam's laws in particular. This is to basically expose students to knowledge of local laws in order to be able to protect themselves legally, and at the same time the course will educate students to avoid legal violations against the society.

14 English (Pre-Intermediate)

Prerequisite: Elementary

Students will be equipped with English knowledge of low-intermediate level according to the Common European Framework (CEFR) – Level Pre-B1. Students will be acquainted with all language skills: listening, speaking, reading and writing which are developed through each topic in the course, such as fashion, risks, free time activities, entertainment episodes, films, happy families, aptitudes and discoveries. Also, students continue to grow their vocabulary base and grammatical structures through reading, grammatical structures, listening, speaking and writing

15 Animal Physiobiology

Prerequisites: Organic Chemistry, Biochemistry

The course will help students identify functioning systems and organs in the body, the uniform operation of these organs in a normal way and apply the knowledge to breeding techniques and disease diagnosis. Meanwhile, the students will practice practical breedings with productive outcomes and propose preventative methods to protect the health of poultry and cattle

16 Swine production

Prerequisite: None

The course will help students use techniques to take care of pigs, tabulate herds of pigs, calculate pigs present in a camp regularly. In addition, students will practice how to estimate sizes of barn construction, costs of barn construction, estimate possible revenues of production, propose food planning and estimate production costs of pig farms

17 Poultry production

Prerequisite: No

The course will provide students with some of the fundamental contents related to poultry industry, such as breeding work, food nutrition, barn tools, poultry nurturing, managing and preventative methods and economic efficiency

18 Ruminant production

Prerequisite: None

The course will help students to identify breeding conditions, major food groups, ranch design methods for ruminant animal husbandry. Students will also apply breeding techniques to and practice diagnosing households' practical production and farms. Simultaneously, students will be able to apply their knowledge to practical effective production and propose effective preventative methods to protect the health of ruminant animals

19 Start-up

Prerequisites: Swine production, Poultry production, Ruminant production, *Fieldwork: going-sightseeing and job-orientation, Co-op 2: Diagnosis and treatment of toxic cattle*

The course will provide students with fundamental knowledge, such as the importance of soft skills in real life, at work and job-orientation. At the same time, the course will direct students how to prepare for a job application and impress recruiters. Also, the course will help students to make plans and write common reports. In addition, the course will train students how to maximize their communication skills at places of work

Through the lessons provided above, students will be equipped with basic knowledge and skills, and they will be able to establish a positive attitude and be prepared for life after graduation

20 Field trip:

Prerequisite: None

The trip will condition students to go to real sites of veterinary - husbandry establishments in the provinces of the Mekong Delta, in Ho Chi Minh City, where effective breeding production models, animal feed mills, veterinary drug companies, animal slaughter facilities and veterinary institutes

21 Internship 1: Veterinary Professional Orientation

Prerequisite: None

The course will equip students with skills of cleaning the barn/stable, and pet rearing work on animal farms.

22 English (Intermediate)

Prerequisite: Pre-Intermediate

Students will be equipped with English knowledge of low-intermediate level according to the Common European Framework (CEFR) – Level B1. Students will be acquainted with all language skills: listening, speaking, reading and writing which are developed through each topic in the course, such as self-discoveries, persuading people, travellers' tales, celebrities, eating out and choices. They will continue to build up their vocabulary and grammar knowledge through listening, speaking, reading and writing. At the same time, they will be familiarized with test samples of B1 produced by the CEFR.

23 Animal Anatomy

Prerequisite: None

The course will provide students with knowledge of anatomy and physiology of cattle and poultry. After the course, students will be able to understand the position, shape and structure of organs and processes in the body of cattle and poultry, compare and distinguish the differences of these structures on common cattle and poultry species.

24 General Histology

Prerequisite: General cytology

The course will help students to identify animal tissues and determine the structure and function of animal and plant physiology. Simultaneously, students will be able to determine the structure and relationship between the population, the community and the ecosystem.

25 Embryology

Prerequisite: None

The course will equip students with the knowledge of histological organization. After the course, students will be able to master microstructure, macroscopic cells, and physiological functions of basic tissues in the body, such as connective tissue, muscle tissues, nerve tissues, blood and lymph, urinary tissue, genital tissue, embryology, skin and leather products.

26 Research Methodology

Prerequisite: Probability and Statistics

The course will familiarize students with methods on how to scientific research, presentation writing techniques, and writing their paper to be published.

27 Biotechnology

Prerequisite: General histology

The course will familiarize students with fundamental knowledge of cells and biological macromolecules, mechanism of DNA synthesis in cells, reprint and repair DNA, recombinant DNA technology, RNA synthesis mechanism, mechanism of protein synthesis in cells, regulating gene expression and basic techniques in molecular biology.

<p>28 General Microbiology</p> <p><i>Prerequisite: General histology</i></p> <p>The course will help students to identify structures, classifications and reproduction of microorganisms (viruses, bacteria and fungi). Meanwhile, students will be able to identify physiological, biochemical characteristics and pathogenic properties and the distribution of microorganisms in nature.</p>
<p>29 Veterinary pathology</p> <p><i>Prerequisites: General Microbiology, Embryology</i></p> <p>The course will give to students with knowledge of fundamental concepts about pathology and systemic diseases: circulatory system, respiratory system, digestive system, urology, genitals, muscle, bone, nervous system and endocrine organs.</p>
<p>30 Veterinary Microbiology</p> <p><i>Prerequisites: General Microbiology, Embryology</i></p> <p>The course will help students to identify structure, classification and reproduction of pathogenic microorganisms for livestock, at the same time determine the physiological, biochemical and pathological characteristics and the distribution of microorganisms in nature.</p>
<p>31 Veterinary Pharmacology</p> <p><i>Prerequisite: Anatomy</i></p> <p>The course will equip students with knowledge to investigate pharmacological effects, pharmacokinetics, properties, effects and dosage of drugs on the animal body to help administer the safe, rational and effective use of drugs.</p>
<p>32 Veterinary Surgery</p> <p><i>Prerequisites : X-ray ultrasound, Veterinary pharmacy, Veterinary epidemiology, Pathophysiology, Veterinary immunology, Diagnosis of veterinary diseases</i></p> <p>The course will give students knowledge of principles on the use of surgical instruments, principles of bleeding, methods of hemostasis, sterilization and diagnosis of infections, common surgical diseases, treatment, surgery and wound healing.</p>

<p>33 Veterinary internal Medicine</p> <p><i>Prerequisites : X-ray ultrasound, Veterinary pharmacy, Veterinary epidemiology, Pathophysiology, Veterinary immunology, Diagnosis of veterinary diseases</i></p> <p>The course will introduce to students knowledge of non-contagious diseases of cattle and the use of medical methods to intervene in the animals and to study the causes of diseases, symptoms of diseases, research on diagnostic and preventive measures.</p>
<p>34 Internship 2: Monogastric Diagnosis and Treatment</p> <p><i>Prerequisite: Co-op 1: Veterinary career orientation</i></p> <p>The course will equip students with skills of intravenous medication and preventing diseases for animals at livestock farms.</p>
<p>35 Experimental Animal production</p> <p><i>Prerequisite: None</i></p> <p>The course will help students to investigate biological characteristics of experimental animals, the adaptation of animals to the environment, specific testing subjects for each disease, and care and nurture in a clean environment.</p>
<p>36 Animal Welfare</p> <p><i>Prerequisite: None</i></p> <p>The course will help students to investigate the biological characteristics of animals, good management of the relationship between animals and humans, the adaptation of animals to the environment, thereby being conscious of protecting animal rights.</p>
<p>37 Veterinary Pathophysiology</p> <p><i>Prerequisite: Animal physiology</i></p> <p>The course will help students to identify the functions of the organs of the body and understand the mechanisms of diseases on each body part, to applying breeding techniques and disease diagnosis</p>
<p>38 Veterinary Immunology</p> <p><i>Prerequisite: None</i></p> <p>The course will equip students with fundamental knowledge of structure and function of body protection systems. Students will be able to master the elements and organs in body protection, and non-specific and specific immune forms in the pet's body. Therefore, they can master the principles of animal disease prevention.</p>

<p>39 English for Veterinary Medicine</p> <p><i>Prerequisite: Intermediate (General English)</i></p> <p>The course will enable students to read and translate specialized documents into Vietnamese and to engage in communication of their major in English.</p>
<p>40 Veterinary Diagnosis</p> <p><i>Prerequisites: Biotechnology, Microbiology veterinary, Pathological anatomy</i></p> <p>The course will equip students with knowledge of diagnostic methods including clinical, subclinical and non-clinical diagnosis. From there, students can make diagnosis and timely treat diseases in pets.</p>
<p>41 X-ray - Ultrasound</p> <p><i>Prerequisite: Anatomy</i></p> <p>The course will help student identify the operating principles of X-ray machines and ultrasounds; as well as the principles of using and reading X-ray and ultrasound images.</p>
<p>42 Rabbit production</p> <p><i>Prerequisite: None</i></p> <p>The course will introduce to students rabbit breeding techniques, care procedures and diseases that often occur in rabbits.</p>
<p>43 Pet production</p> <p><i>Prerequisite: None</i></p> <p>The course will provide students with knowledge of some breeds, physiological characteristics and techniques of caring for dogs and cats.</p>
<p>44 Climate Change in Livestock</p> <p><i>Prerequisite: None</i></p> <p>The course will provide students with knowledge of natural factors related to the livestock industry and risks from animal husbandry affected by climate change, thereby offering remedial measures in animal husbandry.</p>

<p>45 Combined Biology Safety Model</p> <p><i>Prerequisite: None</i></p> <p>The course will introduce students to some of the combined biology safety models that can be efficient in breeding.</p>
<p>46 Veterinary Legislation</p> <p>Prerequisite: General Laws</p> <p>The course will help students to identify current veterinary legal documents, stipulating duties and powers for organizations and individuals involved in production, business and management in the field of animal science and veterinary medicine.</p>
<p>47 Veterinary Infectious Diseases</p> <p><i>Prerequisites : X-ray ultrasound, Veterinary pharmacy, Veterinary epidemiology, Pathophysiology, Veterinary immunology, Diagnosis of veterinary diseases</i></p> <p>The course will give students theoretical knowledge on some infectious diseases caused by viruses and bacteria on cattle (ruminant cattle, pigs, dogs, cats) and poultry. Therefore, students can diagnose the causes of diseases, epidemiology, symptoms, lesions, prevent and treat each pet's disease. The course also helps students take samples, preservation of specimens and bacterial culture for microscope viewing.</p>
<p>48 Pet Diseases</p> <p><i>Prerequisites : X-ray ultrasound, Veterinary pharmacy, Veterinary epidemiology, Pathophysiology, Veterinary immunology, Diagnosis of veterinary diseases</i></p> <p>The course will help students to identify a number of common diseases in dogs and cats, providing causes, symptoms and lesions and providing preventive and treatment measures as well.</p>
<p>49 Statistics and Experimental Design</p> <p><i>Prerequisite: Probability and Statistics</i></p> <p>The course will enable students to use software applications in the field of scientific research in veterinary medicine.</p>
<p>50 Internship 3: Ruminant Diagnosis and Treatment</p> <p><i>Prerequisite: Internship 2</i></p> <p>The course will train students on injection skills, disease prevention and treatment for livestock on livestock farms.</p>

<p>51 Veterinary Pharmacological Materials</p> <p><i>Prerequisite: None</i></p> <p>The course will help students identify a number of medicinal plants and the use of each kind of medicinal herbs to assist in the treatment of animal diseases.</p>
<p>52 Veterinary Toxicology</p> <p><i>Prerequisite: None</i></p> <p>The course will help students identify toxins, pharmacokinetic process and mechanism of action of the poison. Students will be also provided with poison analysis techniques.</p>
<p>53 Fish, Shrimp Diseases</p> <p><i>Prerequisite: None</i></p> <p>The course will introduce to students some common diseases in fish and shrimps; causes of diseases, symptoms, lesions, ways of diagnosis and measures to prevent and treat.</p>
<p>54 Zoonotic diseases</p> <p><i>Prerequisite: None</i></p> <p>The course will introduce to students theories about some infectious diseases caused by viruses and bacteria on cattle possibly transmitted to humans and students can propose some preventative methods of diseases on humans.</p>
<p>55 Food Safety</p> <p><i>Prerequisite: None</i></p> <p>The course will give students knowledge to detect spot on spoiled foods, and to be skilled in testing and analyzing residual chemicals or antibiotics.</p>
<p>56 Development Economics</p> <p><i>Prerequisite: None</i></p> <p>The course will introduce to students the concepts of development economics referring to the theory and models of economic development, decisive resources in economic growth and development, agricultural, industrial and commercial development issues worldwide.</p>

<p>57 Veterinary Parasitology</p> <p><i>Prerequisites : X-ray ultrasound, Veterinary pharmacy, Veterinary epidemiology, Pathophysiology, Veterinary immunology, Diagnosis of veterinary diseases</i></p> <p>The course will help students to recognize causes, symptoms, lesions, dangers and measures to prevent and treat parasites in cattle and poultry and to implement procedures to prevent and treat parasites in cattle and poultry.</p>
<p>58 Veterinary Epidemiology</p> <p><i>Prerequisite: None</i></p> <p>The course will provide students with knowledge of methods of sampling, determination of sample size, methods of disease investigation, analysis of correlation between risk factors causing epidemics. Students will be also able to analyze and evaluate the disease situation that will possibly occur in the region.</p>
<p>59 Veterinary Inspection</p> <p><i>Prerequisites: Microbiology veterinary, Pathological Anatomy, Veterinary Infectious Diseases, Parasites and Veterinary Parasitic Diseases</i></p> <p>The course will provide students with knowledge of process of checking veterinary hygiene before and after slaughter, animal products, slaughter control and animal quarantine.</p>
<p>60 Nutritional Diseases</p> <p><i>Prerequisites: Swine Production, Poultry production, Ruminant production, Diagnosis of veterinary diseases</i></p> <p>The course will help students to identify diseases caused by nutrition and ways to prevent and treat diseases for pets.</p>
<p>61 Veterinary Reproduction and Obstetrics</p> <p><i>Prerequisites : X-ray ultrasound, Veterinary pharmacy, Veterinary epidemiology, Pathophysiology, Veterinary immunology, Diagnosis of veterinary diseases</i></p> <p>The course will help students identify the position and structure of female reproductive organs, understand the reproductive physiology of the female to achieve information of breeding cattle. The course also helps students take care of reproductive cattle; know the diagnosis and propose prevention and treatment of reproductive diseases for cattle in three stages: before farrowing; during farrowing and postpartum.</p>

<p>62 Internship 4: Professional Practices</p> <p><i>Prerequisites: Internship 3: Diagnosis and treatment of ruminant cattle</i></p> <p>The study will train students on the skills of carrying out a scientific research project on veterinary medicine.</p>
<p>63 Production and Occupational Safety Management</p> <p><i>Prerequisite: None</i></p> <p>The course will introduce to students processes in the production and management of livestock. Students will be also able to make plans to develop the herd manually.</p>
<p>64 Wild Animal production</p> <p><i>Prerequisite: None</i></p> <p>The course will provide students with knowledge of nurturing and caring techniques and some diseases on wildlife.</p>
<p>65 Artificial Insemination</p> <p><i>Prerequisite: None</i></p> <p>The course will introduce to students how to investigate sperm formation and composition, semen and physiological characteristics of sperm, training boars to jump and get sperm, dispensing the environment for preserving pig semen, determining the time of insemination and breeding techniques for female cattle.</p>
<p>66 Microbiology in Animal production</p> <p><i>Prerequisite: None</i></p> <p>The course will help students to identify the role of microorganisms in nature and in husbandry, carry out detoxification and disinfection in breeding, identify microorganisms in animal body, identify microorganisms applied in livestock and identify microorganisms in livestock products such as meat, eggs, milk.</p>
<p>67 Livestock Hygiene</p> <p><i>Prerequisite: None</i></p> <p>The course will introduce to students concepts of ecosystems, methods of treating waste from breeding environment and students will be able to apply methods of treating wastes in husbandry.</p>

68 Thesis

Prerequisite: fundamental courses and specialized courses

The course will help students conduct a scientific research project on veterinary medicine including writing outline, experimental arrangement, collecting data, writing a complete essay and presenting a project's oral defense.