Course (TY02020**):** (GENRAL VETERINARY PATHOLOGY**)**

I. General information

- Term: 04
- Credits: **Total credits 02 (Lecture: 1.5 – Practice: 0.5)**
- **Self-study: 06 credits**
- Credit hours for teaching and learning activities: 1500 hrs
- Self-study: 4500 hrs.
- Department conducting the course:
  - Department: Veterinary Pathology
  - Faculty: Veterinary Medicine
- Kind of the course:

Foundation □		Fundamental ☒		Option 1 □	
Compulsory □	Elective □	Compulsory ☒	Elective □	Compulsory □	Elective □

- Prerequisite course(s): CN02305_Animal physiology 2

2. Course objectives and expected learning outcomes

**** Course objectives*:**

The study aims to provide students with general principles of pathology in order to explain the mechanisms of pathobiology and underlying pathological changes.

**** Course expected learning outcomes***

Notation	**Course expected learning outcomes (CLOs)** After successfully completing this course, students are able to	**Program performance criteria (PPC)**
Knowledge		
CLO1	Apply veterinary knowledge to evaluate the effectiveness of diagnosis and treatment	3.3
Skills		
CLO2	Implement proficiently clinical and non-clinical skills, and technical procedures in the disease diagnosis and treatment for animals to contribute to the protection of public health	8.1
CLO3	Use modern veterinary equipment for animal disease diagnosis, treatment, prevention and management to achieve the set goals	10.2
CLO4	Apply servey and research skills to identify research problems	11.1
Attitude		
CLO5	Comply with regulations and laws of veterinary	12.1

3. Course description

1. TY03020. General Veterinary Pathology. (2 Credits: 1,5-0,5-6,0). The basic concepts: Heat-regulating disorders; Mechanism and morphology of cellular injury; Metabolism disorders & tissue degeneration; Vascular disorders; Inflammation and Healing. Teaching methods: Students listen to lectures in class and practice in experimental room, combined with self-study, suggested documents and exchange with friends and lecturers.

Assessment method: Attendance: 10%, midterm: 30%, final exam: 60%.

4. Teaching and learning & assessment methods

CLOs	CLO1	CLO2	CLO3	CLO4	CLO5
Teaching methods					
Lecturing	x	x	x	x	x
Teaching through practical work	x	x			
Assessment					
Rubric 1. Attendance (10%)				x	x
Rubric 2. Mid-term exam (30%)	x		x	x	x
Rubric 3. Final exam (60%)		x	x	x	x

5. Student tasks

-Attendance: All students will be expected to attend at least 75% of lecturing.

-Preparation for the lecture: All students attending this session have to prepare the knowledge before class through the reference and textbooks related to the issues of concern.

- Practices: All students attending this session must attend all practice sessions and submit reports on the practice prescribed by the subject.

- Assignment: All students must engage in generating ideas, searching and processing information, preparing presentations, presenting and answering group discussion questions in class.

- Mid-term test: Students must attend the midterm exam.

- Final exam: Students must attend the final exam.

6. Textbooks and references

**** Textbooks/Lecture Notes:***

1. Xuan Ngoc Cao. 1997. Anatomy of general veterinary diseases. Publisher of Agriculture, Hanoi.

2. Nguyen Huu Nam, Nguyen Thi Lan, Bui Chan Anh Dao. 2015. General Veterinary Pathology. Publisher of Vietnam National University of Agriculture, Hanoi.

3. Nguyen Ngoc Lanh, Van Dinh Hoa, Phan Thi Thu Anh and Tran Thi Chinh. 2002. Pathophysiology. Medical Publishing House, Hanoi.

**** Additional references:***

1. Jubb Kennedy, Palmer. Pathology of Domestic Animals 2006.
2. UN Riede, Werner M. 2004. Color atlas of Pathology: Principles Associated Diseases pathologic Sequela
3. Silbernagl S, Lang F. 2000. Color atlas of pathophysiology

7. Course outline

Week	Content	Course expected learning outcomes
1	***Chapter 1. The basic concepts***	
	***A/* Main contents:** *(02 hours)* **Theory:** *(02 hours)* 1.1. The concept of disease 1.2. Cause of pathology 1.3. Pathogenesis	CLO1,3
	***B/* Self - learning contents:** *(06 hours)* Further references to the problems related to diseases, causes of the disease and the course of development, development of the disease	CLO3,5
2	***Chapter 2. Temperature-Control disorder***	
	***A/* Main contents:** *(03 hours)* **Theory:** *(03 hours)* 2.1. Fever 2.2. Hypothermia 2.3. Heat loss	CLO3,4
	***B/* Self - learning contents:** *(09 hours)* Refer to the documentation relating to the process of body temperature and disorders when this process breaks down	CLO3,4
3	***Chapter 3. Cell and tissue lesions***	
	***A/* Main contents:** *(04 hours)* **Theory:** *(04 hours)* 3.1. The causes and mechanisms damaging cells and tissues 3.2. Cell lesions 3.3. The cell damage caused by necrosis.	CLO3,4
	***B/* Self - learning contents:** *(12 hours)* - Reference more documents relating to cell structures, mechanisms and structural and functional disorders when cells are damaged	CLO3,4
4	***Chapter 4. Metabolic disorders***	
	***A/* Main contents:** *(04 hours)* **Theory:** *(04 hours)* 4.1. Decreasing in blood glucoza 4.2. Fat liver degeneration 4.3. Protein disorder	CLO3,4

	4.4. Protein Intermediate Metabolic Disorder 4.5. Cellular degeneration due to protein metabolism disorder 4.6. Disorders of water metabolism and electrochemical solutions 4.7. Calcium deposition	
	***B/* Self - learning contents:** *(12 hours)* Additional references to the process of metabolism of substances in the body and the lesions that occur when the metabolism of substances are troubled	CLO3,4
5	***Chapter 5. Local circulatory disorders.***	
	***A/* Main contents:** *(3.5 hours)* **Theory:** *(3.5 hours)* 5.1. Congestion 5.2. Stasis 5.3. Local anemia 5.4. Infarctus 5.5. Hemorrhagic 5.6. Thrombosis 5.7. Lap Management 5.8. Edema	CLO2,3
	***B/* Self - learning contents:** *(10.5 hours)* Refer to the documentation related to the circulatory disorders and the consequences of the disorder in the animal body.	CLO3,4
6	***Chapter 6. Inflammation and wound repair***	
	***A/* Main contents:** *(6 hours)* **Theory:** *(6 hours)* 6.1. The concept of inflammation 6.2. The causes of inflammation 6.3. Expression of inflammation 6.4. The main changes in the inflammation 6.5. Relationship between inflammation and body 6.6. Classification of inflammation 6.7. Meaning of inflammation **Practical** *(5 hours)* Exper 1: Observing the circulatory response in inflammation Exper 2: Demonstrate the effect of the pig bile on the cardiovascular system Exper 3: Demonstrate the role of osmotic pressure Introduction of infectious diseases	CLO2,3
	***B/* Self - learning contents:** *(18 hours)*	CLO3,4

	Refer to the documentation related to the inflammation and wound repair in the animal body.	
7	**Practical** *(5 hours)* Exper 1: Introduction the theory of necrosy examination Exper 2: Post-mortem animal	CLO2,4,5