

Course (TY03013): VETERINARY INSPECTION

1. General information

- Term: 9
- Credits: 3 (Lecture: 2,5 – Practice: 0.5)
- Self-study: 9 credits
- Credit hours for teaching and learning activities: 45 hrs
- Self-study: 135 hrs.
- Department conducting the course:
 - Department: Veterinary Public Health
 - Faculty: Veterinary Medicine
- Kind of the course:

| | | | | | |
|-------------------------------------|-----------------------------------|--------------------------------------|-----------------------------------|---------------|-----------------------------------|
| Foundation <input type="checkbox"/> | | Fundamental <input type="checkbox"/> | | Specialized X | |
| Compulsory <input type="checkbox"/> | Elective <input type="checkbox"/> | Compulsory <input type="checkbox"/> | Elective <input type="checkbox"/> | Compulsory X | Elective <input type="checkbox"/> |

- Prerequisite course(s): TY03014: Veterinary Hygiene 1

2. Course objectives and expected learning outcomes

* *Course objectives:*

- Knowledge: Course provided for students with knowledge in transporting and quarantining animals, slaughtering control and veterinary hygiene inspection of animal products, ensuring to provide society with products
- Skills: Course provide students with skills in acting on examine and animal care before slaughtering and managing the risk of zoonotic diseases as well as infectious diseases, especially with international trade in animals and animal products
- Attitude: Course provide students with attitudes in Ensuring to provide society with products, animals have high quality, ensure food hygiene and safety, regulations in control and prevention of animal diseases and safety for the ecological environment and awareness of the responsibilities and role of veterinarians when working as a veterinary quarantine officer

* *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 | Compare the national management system in veterinary hygiene inspection (quarantine, slaughter control, veterinary inspection) | 2.3 |
| CLO2 | synthesize the knowledge related to animal slaughter process, post-mortem inspection procedures, veterinary hygiene inspection, animal carcasses below veterinary hygiene standards | 8.2 |
| Skills | | |
| CLO3 | Act on examine and animal care before slaughtering | 11.2 |

| | | |
|-----------------|---|------|
| CLO4 | Act fluently on management of the risk of zoonotic diseases as well as infectious diseases, especially with international trade in animals and animal products. | 11.2 |
| Attitude | | |
| CLO5 | Perform carefully, professionally, honestly, fairly and objectively when performing professional duties | 12.1 |
| CLO6 | Express of love for animals, with high responsibility when caring for and using animals | 12.2 |

3. Course description

This course consists of several chapters: Introduction to the subject. Transporting and quarantining animals; Veterinary hygiene requirements of the animal factory; Checking and animal care before slaughter; The process of slaughter and veterinary inspection after slaughter; Examining and handling carcasses of animals that do not meet hygiene standards; Examine the veterinary hygiene of meat and meat products; Preserving and processing meat; Examine the veterinary hygiene of eggs and egg products; Examine the veterinary hygiene of milk and milk products.

4. Teaching and learning & assessment methods

| CLOs | CLO1 | CLO2 | CLO3 | CLO4 | CLO5 | CLO6 |
|-----------------------------------|------|------|------|------|------|------|
| Teaching methods | | | | | | |
| Lecturing | x | x | x | x | x | x |
| Teaching through practical work | | | x | | | |
| Group-based learning | | | | x | x | x |
| Assessment | | | | | | |
| Rubric 1. attendance (10%) | | | | | x | x |
| Rubric 2. Presentation (30%) | | | | x | x | x |
| Rubric 3. Practical (Passed only) | | | x | | | |
| Rubric Final exam (60%) | x | x | | | | |

5. Student tasks

- Attendance: All students are required to attend the class following the current regulations (at least 75% of total lecture)
- Preparation for the lecture: All students are required to read the lectures and references before class
- Mid-term exam/Presentation and discussion: All students are required to prepare oral presentations by groups
- Practice: All students are required to attend all practice days
- Final examination is followed university regulations.

6. Text books and references

* *Text Books/Lecture Notes:*

- Dương Văn Nhiệm, Đồng Văn Hiếu (2021). Lecture of Veterinary Inspection (Lưu hành nội bộ)
- Nguyễn Thị Bình Tâm & Dương Văn Nhiệm (2010). **Giáo trình Kiểm nghiệm thú sản**. NXB Khoa học Tự nhiên và Công nghệ. 159 tr.

*** Additional references:**

1. Biswas, A. K., & Mandal, P. (Eds.). (2019). Meat quality analysis: advanced evaluation methods, techniques, and technologies. Academic Press.
2. Chavan, R. S., & Goyal, M. R. (Eds.). (2018). Technological Interventions in Dairy Science: Innovative Approaches in Processing, Preservation, and Analysis of Milk Products. CRC Press.
3. Lorenzo, J. M., Munekata, P. E., Barba, F. J., & Toldrá, F. (Eds.). (2019). More than Beef, Pork and Chicken—The Production, Processing, and Quality Traits of Other Sources of Meat for Human Diet. Springer
4. Gracey, J.F., Collins, D.S., and Huey, R. (1999). Meat Hygiene, 10th Edition. Saunders. London. 758 p.
5. Herenda D. (1994). Cẩm nang về kiểm tra thịt tại lò mổ dùng cho các nước đang phát triển (sách dịch năm 2000 của Dự án SVSV, NXB Bản đồ 2001). FAO, Rome. 304 tr.
6. Phan Trịnh Chúc (1984) . Giáo trình Kiểm soát vệ sinh thú y. Trường ĐHN I (Bộ môn Ký sinh trùng - Kiểm nghiệm thú sản).
7. Phan Trịnh Chúc (1985). Giáo trình Thực tập kiểm soát vệ sinh thú y. Trường ĐHN I (Bộ môn Ký sinh trùng - Kiểm nghiệm thú sản).
8. Quốc hội (2015). Luật số 79/2015/QH13 của Quốc hội: LUẬT THÚ Y (có hiệu lực thi hành từ 01/7/2016).

7. Course outline

| Week | Contents | Course expected learning outcomes |
|------|---|-----------------------------------|
| 1 | Chapter 1: Introduction to the subject (1.5 lessons) | |
| | A/ Main contents: (1.5 lessons) Theoretical teaching content 1.1. Concept of the subject 1.2. Purpose and meaning of the subject 1.3. A brief history of subject 1.4. Relationship of the subject with other subjects 1.5. System of organizing quarantine, slaughter control, veterinary hygiene inspection of animals and animal products | K1 |
| | B/ The contents for self-study at home: (4.5 lessons) The management system on quarantine, slaughter control, veterinary hygiene inspection in Vietnam | K1 |
| 2 | Chương 2: Transportation and Quarantine of animals and animal products (4.5 lessons) | |
| | A/ Summary of main content: (4.5 lessons) Nội dung giảng dạy lý thuyết: Theoretical content: 2.1. Overview of animals and animal product quarantine 2.1.1. The concept | K2 |

| Week | Contents | Course expected learning outcomes |
|------|--|-----------------------------------|
| | <p>2.1.2. Content of quarantine of animals and animal products for domestic transportation</p> <p>2.1.3. Quarantine procedures for animals and animal products</p> <p>2.2. Transportation of animals and animal products</p> <p>2.2.1. Purpose and meaning</p> <p>2.2.2. Forms of transportation</p> <p>2.3. <i>Stress phenomenon during transportation</i></p> <p>2.4. <i>The diseases occurring during transport</i></p> <p>2.4.1. <i>Potential diseases during transportation</i></p> <p>2.4.2. <i>Manifestations of seasickness</i></p> <p>2.4.3. <i>Flight sickness phenomenon</i></p> <p>2.4.4. <i>The phenomenon of eyesore</i></p> <p>B/ Contents of self-study: (13.5 lessons)</p> <p>Documents related to quarantine of animals and animal products</p> <p>The technical regulations relating to the transportation of animal and animal products; The risks of transporting the animals and preventions.</p> | K2 |
| 3 | <p>Chapter 3: Requirements of veterinary hygiene of the animal factory (3 lessons)</p> <p>A/ Summary of main contents (2 lessons)</p> <p>Theoretical teaching content:</p> <p>3.1. General principles</p> <p>3.1.1. Requirement of farming location</p> <p>3.1.2. Requirements in farming construction</p> <p>3.1.3. Tools, equipment and people</p> <p>3.2. Forms of slaughtering and processing of animal products</p> <p>3.2.1. Enterprises of meat association</p> <p>3.2.2. Cattle slaughter system</p> <p>3.3. Water system using in slaughtering and processing animal products</p> <p>3.3.1. Water quality used in animal processing</p> <p>3.3.2. Waste water treatment system</p> <p>3.4. Sanitation and decontamination in slaughtering and processing animal products</p> <p>3.4.1. Mechanical detoxification</p> <p>3.4.2. Physical detoxification</p> <p>3.4.3. Chemical detoxification</p> <p>Content semina / discussion / Project / E-learning: (1 lessons)</p> <p>Analyzing hygiene requirements of a animal factory</p> <p>The contents of self-study: (9 lessons)</p> <p>The veterinary hygiene standards of animal and slaughter places in Vietnam and other countries</p> | K2 |
| 4 | <p>Chapter 4: Testing and animal care prior to slaughtering (3 lessons)</p> | |

| Week | Contents | Course expected learning outcomes |
|------|--|-----------------------------------|
| | <p>Summary of main contents of the class: (3 lessons) Theoretical teaching content: (2 lessons) The purpose of checking and animal are prior to slaughtering Check animals on arrival at the slaughter factory. Preparation Examination Animal care for slaughter Check animals before slaughter Animal handling measures after living examinations Content semina / discussion / Project / E-learning: (1 lessons) Topic 02: Significance of checking and taking care of the units before slaughter with meat quality</p> | K2 |
| | <p>B/ The contents need to self-study at home: (9 lessons) The regulations related to the inspection and taking care of animals before slaughter in Vietnam and around the world (6 lessons)</p> | K2 |
| 5 | <p>Chapter 5. Slaughter process and veterinary inspection after slaughter (3 lessons)</p> <p>Theoretical content: (3 lessons) 5.1. The process of slaughtering animals 5.1.1. Concept 5.1.2. Cattle slaughter 5.1.3. Hygiene in the production process 5.2. Checking after slaughter 5.2.1. General principles 5.2.2. The lymph node system in animal body and the role of lymph node examination 5.2.3. Animal inspection order after slaughter 5.3. Record results and stamp on carcasses 5.3.1. Record results 5.3.2. Stamping</p> <p>B/ The content to self-study: (9 lessons) <i>The regulations related to post-slaughter inspection procedures in Vietnam and around the world</i></p> | K2 |
| 6-7 | <p>Chapter 6: Examining and handling carcasses, viscera of animals that do not meet hygiene standards (7 lessons)</p> <p>A/ Summary of main contents: (7 lessons) Theoretical content: (5 lessons) 6.1. Infectious Diseases 6.1.1. Infectious disease of animals 6.1.2. Zoonosis 6.2. Parasitic diseases 6.2.1. Parasitic Zoonosis 6.2.2. Parasitic disease of animals</p> | K2 |

| Week | Contents | Course expected learning outcomes |
|------|---|-----------------------------------|
| | 6.3. Other diseases 6.3.1. Fever 6.3.2. Hemorrhage or septicemia 6.3.3. Jaundice or jaundice 6.3.4. Hemorrhagic phenomena and congestion 6.3.5. Bruises 6.3.6. unusual smell of the carcass 6.3.7. Plant poison and chemical poison 6.3.8. Stress syndrome in pigs Semina Content / Discussion / Project / E-learning: (2 lessons) Topic 03: General principles in checking and handling carcasses and viscera of infected animals with dangerous infectious diseases Topic 04: General principles in checking and handling carcasses and viscera of infected animals with some dangerous parasitic diseases | |
| | B/ The contents need to self-study (21 lessons) 1) The scientific and legal basis for handling carcasses and viscera of animal infected with infectious diseases 2) The scientific and legal basis for the handling of carcasses and viscera of of animal infected with infectious diseases | K2 |
| 8-9 | Chapter 7. Hygiene examination for meat and meat products (8 lessons). | |
| | A/ Summary of main contents (8 lessons) Content of theory (6 lessons) 7.1. Chemical composition of animal meat 7.2. Morphology of meat 7.2.1. Muscle tissue 7.2.2. Adipose tissue 7.2.3. Connective tissues 7.2.4. Bone tissue 7.2.5. Blood system and tincture 7.3. Characteristics of meat from common animals 7.4. Changes in animal meat after slaughter 7.4.1. Phenomenon convulsions 7.4.2. Hard body 7.4.3. The maturity of meat 7.5. The spoilage of meat 7.5.1. The phenomenon of self-resolution 7.5.2. Stale phenomenon 7.6. Assess the freshness of animal meat 7.6.1. Sample 7.6.2. Organoleptic test 7.6.3. The physical and chemical indicators 7.6.4. Microbiological examination 7.7. Methods of meat preservation 7.7.1. Store meat with low heat | K2 |

| Week | Contents | Course expected learning outcomes |
|------|---|-----------------------------------|
| | <p>7.7.2. Store at high temperatures 7.7.3. Preservation by chemicals 7.7.4. Preservation by microbiological methods 7.8. Veterinary hygiene inspection for meat products 7.8.1. Sampling 7.8.2. Frozen meat 7.8.3. Canned meat 7.8.4. Processed meat products with heat treatment 7.8.5. Processed meat products without heat treatment Content semina / discussion / Project / E-learning (2 lessons) 1/ Topic 05: Changes in animal meat after slaughter and practical significance 2/ Topic 06: The scientific basis of a number of legalization methods in testing and evaluating meat quality.</p> | |
| | <p>- B/ The contents need to self-study at home: (18 hours) - The chemical composition of meat; changes of animal meat after slaughter; meat spoilage and precautions to improve product quality. The standards / technical regulations related to the meat quality inspection.</p> | K2 |
| | Chapter 8. Veterinary hygiene of eggs and egg products (3 hours) | |
| 10 | <p>Theory content: (2 lessons) 8.1. Morphology and composition of eggs 8.1.1. Shell and shell membranes 8.1.2. egg white 8.1.3. egg Yolk 8.2. Properties of eggs 8.2.1. Chemical composition 8.2.2. The change of eggs during storage 8.2.3. Spoilage of eggs 8.2.4. Eggs are vectors infection 8.3. Assess egg quality 8.3.1. Concept 8.3.2. Classification of eggs 8.3.3. Fresh eggs inspection 8.4. Preserving and transporting eggs 8.4.1. Methods of preserving and transporting eggs 8.4.2. <i>Egg products</i> inspection Content semina / discussion / Project / E-learning: (1 lessons) Topic 07: Scientific basis of testing methods to assess the quality of fresh eggs.</p> | K2 |
| | <p>B/ The contents need to self-study at home: (18 lessons) Understand the nutritional value of eggs and the potential risks of improper use of eggs</p> | K2 |

| Week | Contents | Course expected learning outcomes |
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| 11-13 | Chapter 9. Veterinary hygiene inspection of milk and milk products (7.5 lessons) | |
| | A/ Summary of the main contents Theoretical content: (6.5 lessons) 9.1. The chemical composition of milk 9.1.1. Water 9.1.2. Dry matter content 9.1.3. Vitamin 9.1.4. The gaseous form 9.1.5. Enzymes 9.2. Properties of milk 9.2.1. Milk production 9.2.2. Physical properties 9.2.3. Chemical properties 9.2.4. Biological properties 9.3. Spoilage of milk 9.3.1. Change in color 9.3.2. Change in status 9.3.3. Change in smell, taste 9.4. Methods of milk preservation 9.4.1. Physical method 9.4.2. Chemical method 9.5. Milk and milk product inspection 9.5.1. Fresh milk inspection 9.5.2. Examination of milk products Content semina / discussion / Project / E-learning: (1 lessons) Topic 08: Scientific basis of methods to assess the quality of fresh milk. | K2 |
| | B/ The contents need to self-study at home: (22.5 lessons) 1/ The nutritional value of milk and the potential risks when using milk improperly. 2/ The classic methods of testing and assessing the quality of fresh milk. 3/The modern methods of testing the quality assessment of fresh milk and milk products. | K2 |
| 14 | A/ Summary of main contents: (2.5 lessons) Content of practical teaching: (2.5 lessons) Eggs inspection | K3, K4, K5, K6 |
| | B/ Self-study (7.5 lessons) Methods for evaluating the quality of fresh eggs and egg products. | |
| 15 | A/ Summary of main: (2.5 lessons) Content of practical teaching: (2.5 lessons) | K3, K4, K5, K6 |

| Week | Contents | Course expected learning outcomes |
|-------------|--|--|
| | <i>Meat inspection</i> <hr/> <i>B/ The contents need to self-study at home (7.5 lessons)</i> <i>Methods for evaluating the quality of fresh meat and meat products.</i> | |
| 16 | <i>A/ Summary of main: (2.5 lessons)</i> <i>Content of practical teaching: (2.5 lessons)</i> <i>Milk inspection</i> <hr/> <i>B/ The contents need to self-study at home (7.5 lessons)</i> <i>Methods for evaluating the quality of fresh milk and milk products.</i> | K3, K4, K5, K6 |