

## **DESCRIPTION OF ORGANIZATION AND EVALUATION OF THE FINAL QUALIFICATION EXAMINATION OF THE STUDY PROGRAMME OF VETERINARY MEDICINE**

### **I. GENERAL PART**

1. The Description is a determined work order. The description of organization and evaluation of the final qualification examination (hereinafter – **Examination**) (hereinafter – **Description**) defines the organization and evaluation procedure of the Examination of the study programme of Veterinary Medicine, which results in the granted qualification of veterinary surgeon, at LSMU Veterinary Academy (hereinafter – **Academy**).
2. The Description was prepared on the basis of the following legal acts:
  - 2.1. Law on Science and Studies of the Republic of Lithuania, 30 April 2009, No. XI-242 (*Official Gazette*, 2009, No. 54-2140). Amendment act No. XII-2534 (29 June, 2016, No. XI-242
  - 2.2. The order by Minister of Education and Science „General studies execution requirements“ by Order No. V-1168, 30 December 2016.
  - 2.3. Regulation of the Studies at LSMU (approved by the Decree No. 47-05 of the LSMU Senate on 20 June 2014). Amendments decision by the senate, No. 78-08, 23 September 2016. Partly
  - 2.4. Description of the Study Field of Veterinary Medicine approved by the Order No. V-795 on 23 July 2015.
  - 2.5. Directive 2005/36/EC of the European Parliament and of the Council on the recognition of professional qualifications (article 38 of the section 5, paragraph 5.4.1 of the annex 5).
  - 2.6. *Manual of Standart Operating Procedure (ESEVT „Uppsala“ SOP May 2016)*.

### **II. PURPOSE AND OBJECTIVE OF THE DESCRIPTION**

3. The Description is mean for the students of the study programme of Veterinary Medicine, lecturers and members of Examination commission.
4. Objectives of the Description:
  - 4.1. to determine general principles, according to which the Examination is organized;
  - 4.2. to determine general evaluation criteria of the Examination;
  - 4.3. to help the students, lecturers and commission members to adjust and organize the preparation and evaluation criteria of the Examination set in the study programme.

### **III. PURPOSE AND OBJECTIVE OF THE FINAL QUALIFICATION EXAMINATION**

5. During Examination the student demonstrates the level of professional preparation, independence level of the student, and his/her ability to apply the specialty knowledge, practical skills and capacities necessary to acquire the qualification of veterinary surgeon.
6. Objectives of the Examination:

- 6.1. to determine the level of the student's competences acquired while studying the subjects necessary to acquire qualification of veterinary surgeon and while performing practices of professional activities of veterinary surgeon.
- 6.2. to allow the student to prove that s/he has achieved the study goals and has acquired the competences provided in the study programme as necessary to acquire the qualification of veterinary surgeon.

#### **IV. PREPARATION FOR THE FINAL QUALIFICATION EXAMINATION**

7. The Examination programme (Annex 1) shall be posted on LSMU intranet.
8. The Examination shall be organized upon completion of studies of all the subjects listed in the study programme of Veterinary Medicine and upon having passed all the exams and performed the professional practice.
9. The persons responsible for preparation of examination tasks shall be the lecturers coordinating subjects/modules. The managers of units shall be responsible for storage of tasks and preparation of examination places.
10. The tasks of the specialty Examination shall be formed with focus on real situations (healthy animal, ill animal, carcass, food product), which would integrate theoretical knowledge and practical skills and which would induce the students to find the connection between them, make conclusions, and evaluate.
11. The permit to take Examination shall be legalized by the Rector's order.
12. The student, who has academic failures, shall not be allowed to take examination.
13. The date of final examination shall be posted on the study network. The precise date of Examination shall be indicated by the dean's office.

#### **V. WORK ORGANIZATION OF THE COMMISSION OF FINAL QUALIFICATION EXAMINATION**

14. The Examination commission of Veterinary Medicine (hereinafter Commission) shall be appointed by the faculty's dean and approved by the order of LSMU Rector at least 30 calendar days before the final examination.
15. The commission shall consist of the chairman, secretary and members of evaluation group.
16. The commission's chairman may be the lecturer or doctor of veterinary medicine with doctoral degree in the LSMU study field of veterinary medicine.
17. The lecturers with doctoral degree (professor, associate professor, and lecturer) in the LSMU study field of veterinary medicine and doctors of veterinary medicine – practitioners with at least 3-year work experience may be appointed to the members of evaluation commission.
18. The lecturer of Veterinary Faculty and/or the employee of any subdivision of Veterinary Faculty (studies administrator, administrator and other specialists) may be appointed to secretary of evaluation commission.
19. Functions and responsibility of the commission:
  - 19.1. The examination shall be carried out by the commission, whose work shall be organized by the commission's chairman;
  - 19.2. The examination commission shall be responsible for impartiality with regard to execution of tasks and evaluation of the done tasks.
20. Functions of the commission's chairman:
  - 20.1. to control the course of examination and to solve the arising problems during the examination;

- 20.2. to observe the course of examination and evaluation of performed tasks of Examination;
- 20.3. to confirm the minutes of meeting of Examination commission.
- 20.4. to sign the examination protocols of final evaluations.
- 20.5. to arrange the session of commission for surveillance of examination results.
- 21. Functions of the members of evaluation group:
  - 21.1. to evaluate the examination tasks done by the students;
  - 21.2. to assume responsibility for impartiality of evaluation of the executed tasks.
  - 21.3. to sign the protocol for evaluation of student.
- 22. Functions of the commission's secretary:
  - 22.1. to prepare the students' lists and schedules of qualification examination;
  - 22.2. to check the student's identity before the examination;
  - 22.3. to introduce the students with the provisions of the LSMU Regulation of the Studies regarding academic honesty and consequences of their violation;
  - 22.4. to count the intermediate evaluation results of examination;
  - 22.5. to prepare for recording the examination protocol, register and other documents in need.
  - 22.6. to prepare the examination report for the dean of the Veterinary faculty.
  - 22.7. to assume responsibility for presentation of documents to the commission's meeting after the examination.
- 23. By the decree of the dean of Veterinary faculty other service personnel can implement the final qualification examination.

## VI. DOCUMENTS OF FINAL QUALIFICATION EXAMINATION

- 24. **Examination ticket** – a document, where the examination tasks for the student are listed.
- 25. **Evaluation sheets** – a document, where the members of evaluation group evaluate the tasks done by the student, enter their evaluations, and sign.
- 26. **Minutes of meeting of examination commission** – a document of final examination, where the information on the course of examination and final grade are stated. The minutes shall be signed by the commission's chairman and secretary.
- 27. **Examination register** (formed in the LSMUSIS database) – a document, where all the examination evaluation results of the students are recorded.

## VII. EXECUTION OF FINAL QUALIFICATION EXAMINATION

- 28. Students shall draw the examination venue (exact unit) according to the list and the time schedule that was made in advance, regarding the alphabetical order. Students shall be redirected to the examination venue.
- 29. The place of Examination is the units of the Veterinary Academy (Clinic of Large Animals, Clinic of Small Animals of Dr. L. Kriauceliunas, departments, centers, etc.), Centre of Practical Training and Tests, or any other institution, with which the cooperation contract for formation of practical schools of the students is made.
- 30. In the unit the students shall draw the particular Examination tickets. The students shall be directed to the locations of examination execution according to the tasks given on the Examination ticket (clinical task, evaluation of visual material, laboratory examination, etc.).
- 31. The Examination shall be conducted orally and in written.
- 32. The members of evaluation group shall evaluate the tasks performed by the students individually (without discussion between themselves), enter the evaluations into the evaluation sheets and sign.

33. In the end of the Examination the Examination ticket and written works of the students shall be returned to the evaluators.
34. The evaluation sheets signed by the evaluators, examination ticket and written works of the students shall be delivered to the commission's chairman or secretary.
35. The commission's secretary shall fill in the examination protocol, which has to be signed by the chairman of Examination commission and members of the evaluation group, and a register signed by the chairman of the Examination commission.
36. The staff of the unit conducting the studies, Rector, Vice Rectors, chancellors, dean of the faculty, Vice dean, delegated members of students' association council and representatives of the Student Office's Council may observe the examination.

#### **VIII. BEHAVIOUR OF THE COMMISSION OF FINAL QUALIFICATION EXAMINATION AND STUDENTS DURING THE EXAMINATION**

37. The persons, who come to take examination, have to submit the valid student's card or personal identity document and valid student's credit book (who entered the studies before 2017) to the commission.
38. During the examination the commission's members and students have to act politely, correctly and honestly with regard to commission members and other students, and not to impede others to execute the examination tasks.
39. Any action during, before or after the final examination that would result in unfair advantage (benefit) to one person with regard to others is forbidden.
40. If the unfair behavior during the examination is observed, the accused student loses the right to be evaluated and their examination tasks are not being evaluated. Afterwards the procedure described in the LSMU Regulation of the Studies shall be followed.

#### **IX. EVALUATION OF FINAL QUALIFICATION EXAMINATION**

41. The study results of the students during the final examination shall be evaluated according to the LSMU Regulation of the Studies.
42. The examination tasks of each student shall be evaluated by at least 3 members of the commission.
43. When the commission members/evaluators evaluate the final examination, they shall follow the principles provided in the LSMU Regulation of the Studies.
44. The examination tasks of the students shall be evaluated on the same day.
45. The final recording of examination results, filling-in of documentation and announcement of results shall be completed within during three work days.
46. The examination is considered passed if the evaluation result of examination is at least mark 5 (weak).
47. The student, who has not taken or passed the final qualification examination of the programme, shall be expelled according to the LSMU Regulation of the Studies.

#### **X. APPEALS**

48. The appeals regarding Examination evaluation results and procedures shall be delivered to the Rector according to the Regulation of the Studies.

#### **XI. FINAL PROVISIONS**

49. The Description may be amended in the Council of the Faculty of Veterinary Medicine.

## PROGRAMME OF QUALIFICATION EXAMINATION OF VETERINARY MEDICINE

### Internal Diseases

*To be able to analyze the symptoms of infectious diseases, to act under the conditions of new situations and to adapt to them, to act independently, to solve the problems and to make decisions.*

*To recognize clinical condition and to assess its gravity, to form the plan of necessary diagnostic tests, to be able to interpret the test results, and to perform primary (anamnesis, clinical test) and secondary (through interpretation of testing results, planning, performance and interpretation of results of additional tests) differential diagnostics of causes of animal symptoms. To be able to apply the treatment plan suitable for individual animal; to evaluate possible interactions of medicaments and possible adverse effects, as well as effectiveness of prescribed treatment.*

*To be able to sample substance for morphological, biochemical, microbiological, coprologic, toxicological and other diagnostic tests.*

*To be able to master the peculiarities of morphological, biochemical and immunological test of biological fluids, and coprologic and microbiological tests of other substance, to learn to evaluate and analyze results.*

*To apply modern diagnostic and treatment methods of non-infectious diseases of animals.*

*To be able to assess the limits of own competences, to be sincere and honest, and to observe the norms of medical ethics.*

#### ***Small (dog, cat), large (horse, cattle, small ruminants) animals***

1. Collection of anamnesis.
2. Clinical test of the animal ill with digestive diseases, interpretation of received results, formation and implementation of treatment and preventive schemes.
3. Clinical test of the animal ill with respiratory diseases, interpretation of received results, formation and implementation of treatment and preventive schemes.
4. Clinical test of the animal ill with urinary diseases, interpretation of received results, formation and implementation of treatment and preventive schemes.
5. Clinical test of the animal ill with cardiovascular diseases, interpretation of received results, formation and implementation of treatment and preventive schemes.
6. Clinical test of the animal ill with dermal diseases, interpretation of received results, formation and implementation of treatment and preventive schemes.
7. Clinical test of the animal ill with metabolic diseases, interpretation of received results, formation and implementation of treatment and preventive schemes.
8. Diagnostic visualization, animal's position suitable for X-ray test. Analysis of X-ray pictures of various body parts.
9. Entrance of catheter into urinary bladder and its maintenance (mares).
10. Entrance of intravenous catheter and its maintenance, selection of suitable size of catheter.
11. Entrance of nasal-oesophageal probe for horse, assessment of content.
12. Rectal examination, palpation of internal organs and determination of present/possible pathologies.
13. Fluid therapy, determination whether an animal is dehydrated. Entrance of IV drip, planned necessary amount and selection of the dripped liquid (NaCl, Ringer, Metabolase, etc.).

14. Hearing and assessment of peristalsis of intestines (according to the topographical position of intestines).
15. Performance of clinical examination, assessment of condition. Assessment of body's constitution.
16. Restraining an animal.
17. Interpretation of morphological tests of blood.
18. Interpretation of biochemical tests of blood.
19. Interpretation of urinalysis.
20. Interpretation of X-ray test.
21. Interpretation of bacteriological tests.
22. Interpretation of ECG test.
23. Interpretation of ultrasonic, endoscopic, cytological, histological tests.
24. Prescription of medicaments necessary for treatment, substantiation.

Practical-laboratory tasks:

1. Sampling for laboratory tests.
  - Taking of skin's sample for microscopic test.
  - Taking of skin's sample for bacteriologic test.
  - Taking of urine's sample for laboratory test.
  - Blood sampling for laboratory test.
  - Taking of abdominal punctuate for laboratory test.
  - Taking of rumen's content for laboratory test.
2. Examination of samples by express methods:
  - Cattle's blood sampling and testing with regard to glucose, beta-hydroxybutirates, calcium by express method, and interpretation of received results.
  - Taking of excrement samples of cattle (cows, calves), determination of diarrhoea's agent by express tests, interpretation of received results, formation of treatment and preventive schemes.
3. Formation of blood sampling of cows' herd in order to diagnose metabolic diseases and interpretation of received results.
4. Taking of urine's sample. Analysis of stones and other formations present in urine.
5. Examination of urine using indicator stripes, interpretation of data.
6. Blood sampling and analysis. Analysis of biochemical blood sample results.
7. Blood sampling and analysis from *v. jugularis*, *v. saphena* or other veins. Analysis of morphological blood sample.
8. Preparation of blood smear, determination and calculation of leuco-formula.
9. Collection of excrement sample (fecal sample), its preparation and evaluation.
10. Taking skin scraping sample, test conduction and evaluation of received results, assignment of possible treatment.

Documents to be completed:

1. Case history.
2. Prescription.

# **Veterinary Surgery**

*The student has to demonstrate knowledge about safe work with animals, work hygiene and essence of pathologies, diagnosis of which would allow applying surgical method of treatment. The student has to understand the concepts of aseptics and antiseptics, their practical application, to know common regularities of surgical operations: anaesthesia (local and general), observation of animal under narcosis, rules of tissue separation, bleeding control, sewing of wound, possible complications and their avoidance modes, and to know how to act in case they appear.*

*The student has to know, how to examine the patient methodically and consistently, to use the diagnostic tools and equipment, to be able to analyze and generalize the findings, to recognize the patient in need for surgical treatment, to determine the necessity for urgent intervention, to form the clinical diagnosis of disease, to determine its causes, to prescribe rational treatment, and to carry out the necessary manipulations, to suggest and apply preventive measures.*

*The student has to demonstrate independence and skills of team work.*

## **Group of animals – large animals (horse, cow)**

1. Preparation for horse's laparotomy (preparation of hands, putting-on of gloves, coat and correct usage of other necessary measures).
2. Analysis of sewing material: marking of threads meant for surgery, international standardization, usage location and meaningfulness.
3. Epidural –sacral anaesthesia for cow.
4. General anaesthesia of horse (selection of drugs needed for pre-medication, narcosis induction and maintenance, their dosage and sequence of usage).
5. Evaluation of horse teeth and performance of the necessary procedures.
6. Evaluation of horse's vision and eye condition. Comment on findings, recommendations.
7. Examination and evaluation of lachrymal secretion and lachrymal drainage system.
8. Evaluation of specialized-type reflexes with regard to horse.
9. Evaluation of non-specialized-type reflexes with regard to horse.
10. Ophthalmoscopy of horse's eye. Comment on findings.
11. Ophthalmoscopy of cow's eye. Comment on findings.
12. Anaesthesia of abdominal wall for cow.
13. Anaesthesia of cow's udder.
14. Joint-bending test for horse. Comments on the essence of manipulations.
15. Test of Wobbler syndrome in horses. Comments on the essence of manipulations.
16. Shpat test's for horse. Comments on the essence of manipulations.
17. Morphological test of limping horse (leg structures).
18. Functional test of limping horse (in motion).
19. Palpation technique of hoof. Comments on the essence of manipulations.
20. Evaluation of regularity and health of horse hoofs, giving of recommendations.
21. Evaluation of regularity and health of cattle claws, giving of recommendations.

## **Practical-laboratory tasks:**

22. Taking of sample from the horse's eye for microbiological test.
23. Analysis of X-ray of front hooves (horse).
24. Analysis of X-ray of back hooves (horse).

### ***Group of animals – small animals (dog, cat)***

1. General anaesthesia of dog (selection of drugs needed for pre-medication, narcosis induction and maintenance, their dosage and sequence of usage).
2. General anaesthesia of cat (selection of drugs needed for pre-medication, narcosis induction and maintenance, their dosage and sequence of usage).
3. Suture material in the surgery of small animals: used suture material, their sorts and calibre, usage location and meaningfulness, international standardization, explanation of package symbols.
4. Neurological examination of dog with comments on the essence of manipulations.
5. Neurological examination of cat with comments on the essence of manipulations.
6. Orthopaedic examination of dog with comments on the essence of manipulations.
7. Orthopaedic examination of cat with comments on the essence of manipulations.
8. Putting of Robert-Jones splint for dog.
9. Stabilization of transverse fracture of dog's forearm bones by plaster splint.
10. Drawer's test for dog. Comment on findings.
11. Evaluation of dog's teeth condition: comment on findings, provision of necessary manipulations.
12. Otoscopy for dog. Comment on findings.
13. Otoscopy for cat. Comment on findings.
14. Evaluation of dog's vision and eye condition. Comment on findings.
15. Evaluation of cat's vision and eye condition. Comment on findings.
16. Examination and evaluation of lachrymal secretion and lachrymal drainage system with regard to dog.
17. Ophthalmoscopy of cat's eye. Comment on findings.
18. Ophthalmoscopy of dog's eye. Comment on findings.

#### Practical-laboratory tasks:

19. Taking of sample from the dog's eye for microbiological test.
20. Analysis of body's X-ray (dog).
21. Analysis of body's X-ray (cat).
22. Analysis of limbs' X-ray (dog).
23. Analysis of limbs' X-ray (cat).

#### Documents to be completed:

1. Case history.
2. Protocol of horse's anesthesia.
3. Protocol of cat's anesthesia.
4. Protocol of dog's anesthesia.



# Veterinary Obstetrics and Gynaecology

*The student has to be able:*

1. *To apply clinical and laboratory analytical methods and to be able to perform the complete clinical examination of the animal:*
    - 1.1. *To assess the condition of the female reproductive system and mammary glands (all the females).*
    - 1.2. *To determine the heat and select the optimal usage time of the female (all the females).*
    - 1.3. *To determine pregnancy (all the females).*
    - 1.4. *To diagnose reproductive disorders and to prescribe treatment reasonably (all the females).*
    - 1.5. *To assess the condition of male reproductive system (dog).*
  2. *To be able to take, store and transport properly the samples of organs and tissues for laboratory tests, and to interpret the results of laboratory test;*
    - 2.1. *To take lochia (cows, mares, bitches).*
    - 2.2. *To take milk samples (cows) for bacteriological test.*
  3. *To perform actions related to welfare restriction, and to perform them just in case of high necessity, humanely, and to demand the same from others;*
    - 3.1. *To enter catheter into uterus (cow).*
    - 3.2. *To inject medicaments into uterus, i nipple's canal (cow).*
    - 3.3. *To behave with the breeders and to create conditions for their usage (bull, stallion, dog).*
    - 3.4. *To apply artificial insemination technology of cows in practice.*
1. Improvement methods and tools of insemination (cows, heifers).
  2. Insemination physiology and development of inseminated ovule. Stages. Laboratory fertility diagnostics. ELISA principle
  3. Labour pathology (farming animals). Reasons of dystocia.
  4. Energy deficit and complications of period after labour
  5. Functional disorders of udder (hypogalactia, agalactia, milk incontinence, lack of relief).
  6. Uterine upset and prolapse, aetiology, treatment, prophylaxis
  7. Uterine diseases: metritis, endometritis, hypotonia and atonia, subinvolution, aetiology, treatment, prophylaxis
  8. Uterine torsion
  9. Gn-Rh and inducement methods of sexual function
  10. Hypocalcemia and reproduction
  11. Change of hormones in the course of female sexual cycle, neurohumoral regulation of sexual cycle
  12. Sorts of upsets, aetiology, treatment, prophylaxis
  13. Inborn pathologies of sexual organs of dogs and cats: Frenulum persistens, hypospadias, cryptorchidism
  14. Influence of various factors on spermatozooids, amount and quality of generated sperm
  15. Disease of cubs: inborn abnormalities, asphyxia neonatorum, meconium preservation, lack of anus, bleeding from navel
  16. Phases of sexual cycle of bitch and cat and their physiological peculiarities
  17. Dystocia of bitches: clinical test, diagnosis, reasons of motherly and foetal dystocia, , treatment
  18. Uterine pathologies of bitches: endometritis, CEH, piometra, mucometra, hydrometra, stump pyometra.
  19. Ovarian pathologies of bitches (cysts, tumours, syndrome of ovarian remainder).

20. Selection of insemination (copulation) time of bitches and their insemination technology
21. Pathology of period after labour of bitches and cats: bleeding, placenta's stay, acute metritis, placental subinvolution, eclampsia, post-labour pathology of mammary gland.
22. Mastitis of bitches and cats
23. Pathologies of mammary gland of bitches and cats, diagnostics and treatment
24. Transplantation technology of cow embryos. Superovulation methods of donors.
25. Infectious impact of cow rhinotracheitis and viral diarrhoea on reproduction
26. Insemination technology of cows
27. Porcine MMA
28. Ovarian cysts: sorts, clinic, aetiology and treatment methods
29. Stimulation and synchronisation of sexual cycle with the help of prostaglandins, progestogens
30. Forms and types of mastitis. (Farming animals). Aetiology, clinic, treatment, prophylaxis
31. Undesirable copulation of bitches. Pregnancy prevention and termination
32. Reasons, prophylaxis and treatment of placental stay.
33. Help in case of normal calf-dropping. Care about cub and female
34. Forms and reasons of male impotence
35. Pseudo-pregnancy
36. Amount and concentration of sperm of breeders (rams, bulls, stallions, boars)
37. Composition of sperm thinner and its meaning
38. Pathologies of canine prostate. Prostate and paraprostate cysts.
39. Pregnancy duration and diagnostics of dogs and cats. Labour physiology (periods and duration)
40. Labour signs (farming animals)

#### ***Group of animas – Farming animals***

41. Preparation of artificial vagina (bulls, rams, boars, stallions)
42. Clinical pregnancy test
43. Taking and transportation of lochia
44. Assessment of heat, selection of optimal insemination (copulation) time
45. Evaluation of udder's health
46. Taking of milk sample for bacteriological test
47. Evaluation of cow's ovaries by rectal and/or ultrasonic test
48. Defrosting of frozen sperm and evaluation of its mobility
49. Vagina's test by vaginal mirror
50. Application of medicaments into uterus: entrance of catheter into uterus

#### ***Group of animas – small animals***

51. Clinical examination of bitch with regard to reproductive diseases.
52. Clinical examination of dog with regard to reproductive diseases.
53. Sampling for cytological test of bitch's vaginal mucous membrane.
54. Dying, microscoping and evaluation of cytological test.
55. Clinical examination of mammary glands.

## **Infectious Diseases**

*The student has to know etiology of infectious diseases, epidemiologic data, clinical signs, diagnosis and treatment; application of means for disease control liquidation and prevention; to collect, analyze and assess various epidemiologic data of infectious diseases; to be able to plan and carry out the epidemiologic tests of infectious diseases; able to plan and carry out the examination and liquidation of outburst of infectious diseases.*

*The student has to be able to interpret test results, to base them on theoretical knowledge, and to give recommendations to the animal's owner, if necessary.*

### ***Group of animals – large, small animals and birds***

1. Infectious diseases of cattle and small ruminants, and interpretation of epidemiologic data.
2. Infectious diseases of birds and interpretation of epidemiologic data.
3. Infectious diseases of pigs and interpretation of epidemiologic data.
4. Infectious diseases of horses and interpretation of epidemiologic data.
5. Infectious diseases of dogs and interpretation of epidemiologic data.
6. Infectious diseases of cats and interpretation of epidemiologic data.
7. Infectious diseases of rabbits and interpretation of epidemiologic data.
8. Zoonotic diseases and interpretation of epidemiologic data.
9. Examination of herd with regard to infectious diseases.
10. Vaccination of dog.
11. Vaccination of (tom)cat.
12. Vaccination of rabbits.
13. Examination of outburst of infectious disease.
14. Preparation of observation plan.
15. Liquidation of disease centre.

### **Practical-laboratory tasks:**

1. Determination of antibodies/antigens by express test from blood serum and interpretation of results.
2. Determination of antibodies/antigens by express test from excrement and interpretation of results.
3. Smear test to differentiate agents of bacterial and fungal diseases.
4. Interpretation of serologic tests of infectious diseases.

## **Veterinary Pathology**

*The student has to be able to perform pathological anatomic examination of the carcass, to determine the pathological anatomic changes, to form the final pathological anatomic (nosological) diagnosis, to complete the expanded act of pathological anatomic examination of the carcass, to make independent decisions about samples needed from the carcass and for what tests, to record and pack them properly, to fill in the bill of lading and to send them to the laboratory.*

*The student has to be able to interpret the results of pathological anatomic examination, to substantiate them with theoretical knowledge, and to give recommendations to the animal's owner or sender.*

*The student has to be able fill in the documents related to pathological anatomic examination.*

*The student has to know and apply practically the requirements of biosafety and hygiene in the place of carcass's pathological anatomic examination, and how to dispose safely of carcasses and waste of animal origin.*

### **Topics to be repeated:**

1. Preparation for pathological anatomical examination of the carcass, collection of anamnesis, clothing, knowledge of biosafety requirements.
2. Pathological anatomical examination (external inspection, dissection technique of carcass, pathological anatomic examination of organs and tissues, cadaverous changes, determination of the animal's death time) of the carcass (horse, cow, small ruminants, pig, carnivore (dog, cat, mink), rabbit, bird), putting in order of the examination place, its disinfection, disposal mode of carcasses.
3. Evaluation of pathological anatomical changes of organs and tissues.
4. Sampling of pathological material for histopathological, cytological, bacteriological, virological and toxicological tests.
5. Diseases of horses and their pathomorphological diagnostics.
6. Diseases of ruminants and their pathomorphological diagnostics.
7. Diseases of pigs and their pathomorphological diagnostics.
8. Diseases of carnivores and their pathomorphological diagnostics.
9. Diseases of rabbits and their pathomorphological diagnostics.
10. Diseases of birds and their pathomorphological diagnostics.

### **Documents to be completed:**

1. Act of pathological anatomic examination of carcass.
2. Bill of lading (invoice) of the carcass meant for pathological anatomic examination of pathological substance.
3. Bill of lading (invoice) of pathological substance, biopsy for histopathological, cytological test.
4. Bill of lading (invoice) of pathological substance for bacteriological, virological and toxicological tests.
5. Bill of lading (invoice) of the carcass meant for disposal at "Rietavas Veterinary Sanitation" Ltd.

# **Veterinary Parasitology**

*On the basis of anamnesis, the student has to be able to make decisions about samples needed from the animal and for what tests, to take them properly, to prepare the samples, to carry out parasitologic tests, to identify the parasites present in certain sample, to form diagnosis and to apply treatment.*

*The student has to be able to interpret the results of parasitologic tests, to substantiate them with theoretical knowledge, and to give recommendations to the animal's owner regarding prevention and control of parasitic diseases.*

## ***Group of animals – large animals (ruminants (cow, sheep, goat, etc.), horse, pig)***

1. Parasitic diseases of horses, their diagnostics, prophylaxis and treatment.
2. Parasitic diseases of large ruminants, their diagnostics, prophylaxis and treatment.
3. Parasitic diseases of small ruminants, their diagnostics, prophylaxis and treatment.
4. Parasitic diseases of pigs, their diagnostics, prophylaxis and treatment.

## ***Group of animals – small animals, birds***

5. Parasitic diseases of dogs, their diagnostics, prophylaxis and treatment.
6. Parasitic diseases of cats, their diagnostics, prophylaxis and treatment.
7. Parasitic diseases of rabbits, their diagnostics, prophylaxis and treatment.
8. Parasitic diseases of birds, their diagnostics, prophylaxis and treatment.

### **Practical-laboratory tasks:**

1. Taking of parasitologic sample to diagnose internal parasites of large/small animal in the excrements, urine, blood, and collection of anamnesis.
2. Taking of parasitologic sample to diagnose external parasites of large/small animal and collection of anamnesis.
3. Preparation of native smear method from the animal's excrement, microscoping, diagnostics, identification and treatment of internal parasites.
4. Preparation of floatation method from the animal's excrement, microscoping, diagnostics, identification and treatment of internal parasites.
5. Preparation of McMaster method from the animal's excrement, microscoping, diagnostics, identification and treatment of internal parasites.
6. Preparation of sedimentation method from the animal's excrement, microscoping, diagnostics, identification and treatment of internal parasites.
7. Preparation of compressor method from the sample of animal's muscles, microscoping, diagnostics, identification and treatment of muscular parasites.
8. Taking of skin's shaves from the animal's skin, microscoping, identification and treatment of parasites.
9. Blood-taking from the animal's vein, preparation of smear, microscoping, identification and treatment of parasites.

### **Documents to be completed:**

1. Act of animal's parasitologic test.
2. Bill of lading of animal's sample for parasitologic test.

# **Hygiene of Food Products**

*The student has:*

- to understand and explain production technologies of various food raw materials and products, and the related risk factors;*
- to know the principles of self-control systems based on the evaluation of risk;*
- to be able to assess the package of food raw materials and products, labelling information, and compliance with the quality class;*
- to be able to carry out the sensual test of food raw materials and products, and to assess their suitability for usage,*
- to know the classical research methods of safety, composition and quality of food raw materials and products;*
- to be able to take and send the samples of food raw materials and products for laboratory tests, to analyze the received results, to evaluate the quality and safety of food raw materials and products;*
- to be able to carry out the post-slaughter test of cattle and pigs and to give recommendations regarding suitability of slaughtering products for human food;*
- to be able to carry out the trichinellosis test and to give recommendations regarding suitability of meat and its products for usage,*
- to know the documents regulating food safety and quality and to know, how to use them.*

## **General hygiene:**

1. Labelling evaluation of food products.
2. System of risk factors and key management points and its application in food production companies.
3. Evaluation of food product's suitability for usage (package, labelling information, sensual test).

## **Meat and eggs hygiene:**

4. Evaluation of meat's freshness (sensual and laboratory test).
5. Test of eggs (compliance with quality class, labelling evaluation, determination of freshness).
6. Post-slaughter inspection of cattle (head, internal organs, intestines, sexual organs, carcass).
7. Post-slaughter inspection of pigs (carcass, internal organs, intestines, sexual organs).
8. Trichinellosis test by compressor and digestive method.

## **Milk hygiene:**

9. Taking of samples of milk and milk products.
10. Determination of primary indexes of milk quality (sensual characteristics, temperature, density, clearness, acidity, neutralizing substances).
11. Determination of indexes of milk composition (dry, dry non-fatty substances, fats, proteins, lactose). Clarification of milk's naturalness.
12. Determination of milk quality (bacterial contamination, somatic cells, inhibitor substances, milk freezing temperature).
13. Evaluation of compliance of milk products with standard requirements.

## **Fish hygiene:**

14. Sensual test of fish.

15. Determination of vitality of piscine parasites and evaluation of production.
16. Parasitologic test of fish muscles and evaluation of production.

**Hygiene of vegetal products:**

17. Determination of quality class of fruits, berries, vegetables, evaluation criteria, evaluation of defects.
18. Quality test of honey (sensual evaluation, determination of water content, acidity, diastase).

**Food microbiology:**

19. Evaluation of production conditions of crushed meat through determination of number of aerobic colonies (testing, evaluation and analysis of results).
20. Taking of samples of environmental outwash, their examination and evaluation of results.
21. Taking of food samples and their sending for microbiological tests.
22. Determination of microbiological criteria of food safety (salmonella, campilobacteria), evaluation and analysis of results.

## **State Veterinary and Public Health**

***Student has:***

1. *To know the structure and functions of the regional State Food and Veterinary Service.*
2. *To know the veterinary legal acts guided by doctors of veterinary medicine.*
3. *To know the work organization and spectrum of performed functions by private veterinary clinics, diagnostic cabinets and private veterinary doctors.*
4. *To know the procedures and terms of accountability for State Food and Veterinary Service that applies to private veterinary clinics, diagnostic cabinets and private veterinary doctors*
5. *To know the requirements and applied infringements of biological safety.*
6. *To know the requirements for animal welfare.*
7. *To be able to fill in correctly the documents approved by the State Food and Veterinary Service.*

***Practical tasks:***

1. To fill the document of veterinary accounting.
2. To indicate the biosafety implements (tools) in the given assignment (clinic, cabinet, farm, zoo, vivarium, etc.)
3. To record the act of formalization of the infringement of animals' welfare.
4. To fill in the sampling act for test.
5. To fill in the vaccination act.
6. To fill in the disinfection act.