



FVM – THREE ORIENTATIONS ON THE INTEGRATED STUDY OF VETERINARY MEDICINE

WHAT IS ORIENTATION?

Orientation is part of the study program in that students enroll in one part of their studies (as a special group of subjects). The orientation is not an integral part of the name of the study program and is not specified in the permit. Students are issued a unique diploma and a supplement to the diploma by the name of the study without indicating the direction and with the associated common competencies for all orientations. The differences can be seen in the list of passed subjects.

GOAL AND PURPOSE OF ORIENTATIONS?

When enrolling in the fifth year of study, the student chooses mandatory electives and Subjects from the chosen field of study. The basic feature of the aforementioned courses is the raising of expertise in the field that the student has chosen himself. In such a way that the student has the possibility to choose one of the three offered orientations, the greatest attention is given to the student's personal development so that the student can strategically direct his potential with the breadth of his knowledge and an active attitude towards the acquisition of knowledge.

SKILLS

The chosen field of study provides students with key theoretical knowledge and all essential practical information and skills in each of the selected segments of veterinary activity, as well as related activities. In this way, the structure was established a study that will

enable more successful mastering of the skills necessary for future work with small animals, work in a large practice and in the field of hygiene and technology of food of animal origin and veterinary public health.

SELECTION PROCEDURE IN ONE OF THREE ORIENTATIONS

The choice of study orientation is based on the student's wishes and the number of places available per orientation. Students are oriented in such a way that in the ninth semester they choose primary and alternative orientations. If more candidates apply for the study program than the number of available places, then more successful students have priority for enrollment in the primary program. Success is determined on the basis of achieved ECTS points and grade point average until enrollment in the tenth semester.

1. ANIMAL FOOD HYGIENE AND TECHNOLOGY AND VETERINARY PUBLIC HEALTH

AS SHOWN:

Total number of hours for compulsory, compulsory elective subjects and elective subjects of the Hygiene and Technology of Animal Foods and Veterinary Public Health.

LEARNING OUTCOMES

See the learning outcomes after successfully mastering the subjects from orientation.

SPECIFIC GOAL OF ORIENTATION

The special goal within the framework of the above-mentioned courses is to train students for independent professional work, the application of scientifically proven standards of hygiene and technology in the framework of veterinary supervision, and the assessment of food hygiene and quality.

2. FARM ANIMALS AND HORSES

AS SHOWN:

Total number of hours for compulsory, compulsory elective subjects and elective subjects of orientation Farm animals and horses.

LEARNING OUTCOMES

See the learning outcomes after successfully mastering the subjects from orientation.

SPECIFIC GOAL OF ORIENTATION

The acquired knowledge will enable the students to correctly interpret the findings, and with knowledge of general prophylaxis, they will have the knowledge necessary to implement disease control and prevention measures. Orientation courses allow the student to apply selected expert knowledge that will facilitate his activities in the field of employment. The acquired knowledge will enable them to correctly interpret the findings, and general prophylactics will have the knowledge necessary to implement measures to control and prevent diseases in farm animals and horses.

3. SMALL COMPANION ANIMALS

AS SHOWN:

The total number of hours for compulsory, compulsory elective subjects and elective subjects of orientation Small companion animals.

LEARNING OUTCOMES

See the learning outcomes after successfully mastering the subjects from orientation

SPECIAL COAL OF ORIENTATION

The knowledge and skills acquired in this course make students qualified to work in institutions that deal with maintaining the health of dogs, cats, birds and exotic animals.

HOW TO CHOOSE ORIENTATION?

This brochure directs you to information, instructions and tools that lead you to information about the courses offered in the fifth year of the Integrated Undergraduate and Graduate University Studies in Veterinary Medicine. All the available information will help you choose a path for self-assessment of your own interests and competences and thus facilitate the choice of directions that are most appropriate to your professional interests.

LITERATURE:

1. ECTS – Informational package 2022./2023. – *Course catalogue*
2. Catalog of knowledge and skills with learning outcomes for mandatory optional subjects of integrated undergraduate and graduate studies in veterinary medicine
3. Catalog of knowledge and skills with learning outcomes of optional subjects of integrated undergraduate i graduate study of veterinary medicine
4. SELF EVOLUTION REPORT (SER) University of Zagreb, Faculty of Veterinary Medicine, Zagreb, June 10-14, 2013.

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ORIENTATION: ANIMAL FOOD HYGIENE AND TECHNOLOGY AND VETERINARY PUBLIC HEALTH

Table 1. - X and XI. semester – (Compulsory Subjects)

COURSE STATUS	COURSE NAME	From to semester	TOTAL HOURS				NUMBER OF ECTS POINTS
			L	S	P	F	
OBLIGATORY	Food Hygiene and Quality Control	10.	11	4	24	6	3.5
OBLIGATORY	Veterinary Legislation and Food Safety Control	10.	28	17	0	0	3.5
OBLIGATORY	Veterinary public health	11.	52	14	12	12	7

Table 2. – Elective courses XI. semester

COURSE STATUS	COURSE NAME	From to semester	TOTAL HOURS				NUMBER OF ECTS POINTS
			L	S	P	F	
ELECTIVE Minimum of 3 and maximum of 6 ECTS points to be selected	Autochthonous Meat Products	10.	5	15	6	0	2
	Autochthonous Dairy Products	10.	6	13	5	6	2
	Hygienic Quality of Game Meat	10.	11	10	5	0	2
	Hygiene and Quality of Poultry Meat	10.	4	8	14	0	2
	Carcass Quality at the Slaughter Line	10.	8	10	8	0	2
	Hygiene and Quality of Fish Meat	10.	9	12	6	0	2
	Poisonous plant toxicology	10.	12	0	9	0	1.5
	-	-	-	-	-	-	-
	Diseases of Honeybees in Contemporary Production (25)	10.	6	2	2	5	1
	Fishery(20)	10.	3	4	0	8	1
Total			64	74	55	19	15.5

Table 2. – Elective courses XI. semester

COURSE STATUS	COURSE NAME	From to semester	TOTAL HOURS				NUMBER OF ECTS POINTS
			L	S	P	F	
ELECTIVE 5 ECTS minimal, maximum 6 ECTS	Organic Poultry and Game Birds Production	11.	10	10	4	6	2
	Liability in the Veterinary Profession	11.	10	5	0	0	1
	Technology in Poultry Production	11.	6	4	5	0	1
	Management and Marketing in Veterinary Practice	11.	10	0	20	0	2
	Veterinary Cytology	11.	10	0	20	0	2
	Total			46	19	49	6

In addition to the general goal and tasks, in the education of the Doctor of Veterinary Medicine, a special goal within the aforementioned subjects is to train students for independent professional work, the application of scientifically verified standards of hygiene and technology in the framework of veterinary supervision, and evaluation of food hygiene and quality. Of course, this is only possible through education in the field of application of process methods (technology) in the production of hygienically correct and high-quality products (hygiene), all in the context of improving veterinary public health.

In courses from the study area and in optional courses, acquired knowledge and skills are deepened up to specialist knowledge in the field of food safety and train students for independent work in the control and supervision of biological, chemical and physical pollutants in raw materials and products and in the food chain. In addition, students are introduced to production control concepts (HACCP) and prerequisite programs. Students also connect knowledge from the fields of animal hygiene, animal husbandry, and feeding, and put them in the context of the food chain. Special attention is paid to the control of zoonoses and the monitoring of residues of veterinary drugs in food of animal origin. Specifically, after successfully mastering the compulsory course "**Hygiene and Food Technology**", which is followed by all students at the Faculty, the student will be capable of the following:

- ⊗ Treatment of animals in transport and slaughterhouse according to welfare principles.
- ⊗ Supervised and controlled slaughterhouse processing of animals.
- ⊗ Inspection of meat and organs on the slaughterhouse processing line, assessment of correctness.
- ⊗ Evaluating the freshness of meat by physicochemical examination procedures.
- ⊗ Meat sampling for laboratory analysis
- ⊗ Bacteriological examination of meat, interpretation of findings, and writing of opinions.
- ⊗ Inspection of meat for the presence of the parasite *Trichinella* sp.
- ⊗ Keeping records, labeling, and reporting on veterinary supervision in meat production and trade.
- ⊗ Categorization and grading of meat on the slaughterhouse processing line. Marking of meat.
- ⊗ Evaluation of fat quality by physical-chemical procedures.
- ⊗ Sensory examination of animal products (food).
- ⊗ Determining the natural composition of milk. Density, amount of milk fat, dry and fat-free dry matter.
- ⊗ Proof of adulteration and determination of milk freshness.
- ⊗ Demonstration of pasteurization and sterilization of milk.
- ⊗ Determination of somatic cells in milk.
- ⊗ Bacteriological examination in the control of milk quality and plant hygiene.
- ⊗ Evidence of hygienic correctness of milk devices, swabs and rinses.
- ⊗ Demonstration of antibiotics, disinfectants and other harmful substances in milk.
- ⊗ Determining the quality of condensed milk, cream, butter, milk-acid products, cheeses, ice cream.
- ⊗ Getting to know the technological process of production in the dairy.
- ⊗ Veterinary control and supervision at the market and fish market.
- ⊗ Evaluation of the quality of meat, fish and egg products.
- ⊗ Implementation of sanitation in the food industry.
- ⊗ Solving problems with teamwork, working in small groups, presenting analysis results.

After successful completion of the mandatory elective course from the direction "**Veterinary Public Health**", the student will be capable of the following:

- ⊗ Creation of a HACCP plan.
- ⊗ Assessment of animal production systems with regard to risk factors.
- ⊗ Interpretation of data on the genetic basis for the yield and quality of products (food) of breeding animals.
- ⊗ Assessment of the danger to human health from pollutants (contaminants) and undesirable residues of chemical substances from foodstuffs (food) of animal origin.
- ⊗ Interpretation of the findings of objective diagnostic procedures.
- ⊗ Procedures for the general prophylaxis of the occurrence and spread of food-borne zoonoses.
- ⊗ Application of disinfection measures and control of harmful insects and rodents in the public area of healthcare.
- ⊗ Taking material for parasitological examination.
- ⊗ Identification of parasites, parasite parts, and developmental stages in different samples.
- ⊗ Parasite isolation and determination.

After successfully mastering the mandatory optional subject "**Quality and hygiene control food safety**" in the orientation, the student will be capable of the following:

- ⊗ Determining the microbiological quality of food.
- ⊗ Determination of the basic chemical composition of food.
- ⊗ Determination of nitrates, nitrites, and polyphosphates in food.
- ⊗ Determining the type of meat in the food.
- ⊗ Carrying out the sensory evaluation of food.

After successful completion of the mandatory optional subject "**Veterinary Legislation and Supervision in Food Safety**" in the specialization, the student will be capable of the following:

- ⊗ Implementation of regulations.
- ⊗ Writing sampling records.
- ⊗ Writing findings.
- ⊗ Writing opinions.

After successfully mastering the optional subject "**Autochthonous dairy products**", the student will be capable of:

- ⊖ Determination of microbiological quality of fresh milk from OPG.
- ⊖ Determination of the chemical composition of indigenous dairy products.
- ⊖ Sensory evaluation of autochthonous fermented dairy products.
- ⊖ Sensory evaluation of autochthonous cheeses.

After successfully mastering the optional subject "**Autochthonous meat products**", the student will be capable of:

- ⊖ Determination of the microbiological quality of autochthonous meat products.
- ⊖ Determination of the chemical composition of autochthonous meat products.
- ⊖ Sensory evaluation of autochthonous meat products.

After successfully mastering the optional subject "**Hygienic Quality of Game Meat**", the student will be able to:

- ⊖ Determining the microbiological quality of game meat.
- ⊖ Determination of the chemical composition of game meat and game products.
- ⊖ Sensory evaluation of game meat products.
- ⊖ Evaluation of the freshness of game meat.

After successfully mastering the optional subject "**Hygiene and Quality of Poultry Meat**", the student will be able to:

- ⊖ Determination of the microbiological quality of poultry meat.
- ⊖ Determination of the chemical composition of poultry meat.
- ⊖ Sensory evaluation of poultry meat products.
- ⊖ Rating of freshness of poultry meat.

After successfully mastering the optional subject "**Carcass Quality at the Slaughter Line**", the student will be capable of:

- ⊖ Classification and categorization of slaughterhouse-processed cattle carcasses.
- ⊖ Classification and categorization of slaughterhouse-processed pig carcasses.
- ⊖ Classification and categorization of slaughterhouse-processed sheep/lamb carcasses.

After successfully mastering the optional subject "**Hygiene and Quality of Fish Meat**", the student will be able to:

- ⊖ Evaluation of fish freshness.
- ⊖ Microbiological examination of fish.
- ⊖ Determination of the chemical composition of fish meat
- ⊖ Parasitological examination of fish - parasites important for public health



ORIENTATION: FARM ANIMALS AND HORSES

Table 4. - X. and XI. semester – (Obligatory courses)

COURSE STATUS	COURSE NAME	semester	TOTAL HOURS				NUMBER OF ECTS POINTS
			L	S	P	F	
OBLIGATORY	Equine medicine	10.	9	36	45	0	7
OBLIGATORY	Farm Animal Medicine	11.	13	30	47	0	7

Table 5. - X. semester – (elective courses)

COURSE STATUS	COURSE NAME	semester	TOTAL HOURS				NUMBER OF ECTS POINTS
			P	S	V	T	
ELECTIVE minimal 3, maximum 6 ECTS points	Animal Dietetics	10.	5	5	20	0	2
	Poisonous plant toxicology	10.	12	0	9	0	1.5
	-	-	-	-	-	-	-
	Diseases of Honeybees in Contemporary Production (25)	10.	6	2	2	5	1
	Fishery (20)	10.	3	4	0	8	1
	Sport and working animals	10.	8	4+2	16	0	2
	Total			34	15+2	47	13

Table 6. Elective courses XI. semester

COURSE STATUS	COURSE NAME	semester	TOTAL HOURS				NUMBER OF ECTS POINTS
			L	S	P	F	
ELECTIVE minimal 5 and maximum 6 ECTS points	Organic Poultry and Game Birds Production	11.	10	10	4	6	2
	Liability in the Veterinary Profession	11.	10	5	0	0	1
	Technology in Poultry Production	11.	6	4	5	0	1
	Management and Marketing in Veterinary Practice	11.	10	0	20	0	2
	Emerging Infectious Diseases	11.	28	0	2	0	2
	Zoonoses	11.	24	4	2	0	2
	Veterinary Cytology (35)	11.	10	0	20	0	2
	Assisted Reproduction in Veterinary Medicine	11.	5	10	15	0	2
	Total			103	33	68	6

(L- lectures, S – seminars, P – practicals, F – field trips)

General and special knowledge acquired during orientation:

OBSTETRICS

1. Ultrasound monitoring of follicular dynamics in mares, hormonal status, and endometrial biopsy. UO in mares with fresh, diluted, and deep-frozen sperm, different regimens of hormonal preparations (light regimes, gestagens, prostaglandins, GnRH, hCG) - advantages and disadvantages;
2. Method and time of sampling, procedure with mare and sample, method of sending and analysis according to EU conditions, sampling, preparation and assessment of cytological smear, endoscopic examination of the uterus;
3. Specifics of andrological examination of stallions, special spermiology, procedure with obtained i canned stallion semen;
4. Management of normal childbirth and puerperium, placental abruption in mares, uterine atony, and puerperal infections;
5. Pubic operations (Castick episiotomy), perineal reconstruction, perineal transection, surgical treatment of the vagina, surgical treatment of injuries caused during childbirth, ovarian surgery, and uterus (cesarean section, uterine torsions, and ruptures, uterine and ovarian tumors);
6. Early ultrasound and laboratory diagnosis of foaling, use of doppler in monitoring fetal development, diagnosis and reduction of twins, diagnosis and monitoring of high-risk pregnancy;
7. Congenital and acquired irregularities in the structure of the sexual organs. Embryonic mortality, miscarriages, twins, endometritis and endometriosis, functional disorders of ovarian function and ovulation;
8. Determining foal vitality after birth (APGAR), intensive care of foals and artificial feeding of foals without a mother, procedures with weakly vital newborn foals, procedures with with a prematurely born foal, preventive procedures and specifics of newborn treatment;
9. Meconium retention, septicemia, diarrhea, neonatal isoerythrolysis and others



SURGERY, ORTHOPEDICS AND OPHTHALMOLOGY

The course "Diseases and Treatment of Horses" is a continuation and expanded program of undergraduate and graduate courses in Internal Diseases and Surgery, Orthopedics, and Ophthalmology. In the practical part of the course, students try to train themselves to approach an injured horse and repair various types of injuries in field conditions. The student should also familiarize himself with the forms of sedation, general intravenous, and local anesthesia in field conditions. By teaching abdominal surgery, students acquire a routine in recognizing colic restlessness in horses, applying diagnostic methods (probing, rectal examination, abdominal puncture) and treating colic in field conditions, as well as making a decision to refer a horse with a severe form of colic to a referral clinic for surgical treatment. It is very important for students to know how to use certain medications to suppress pain and damage to the intestines during vomiting. Students will also get an insight into postoperative patient care. When meeting an orthopedic patient, students must recognize the affected limb, especially in the case of low-intensity lameness. For the purpose of diagnosis of lameness, they will get acquainted with the methods of surgical propaedeutics, diagnostic anesthesia, and specialist methods of lameness diagnosis (ultrasound, CT, magnetic resonance, arthroscopy, tenoscopy, and scintigraphy). They must also master the pathogenesis, diagnosis, and treatment of soft limbs with an emphasis on flexor tendons, especially in sports horses. Likewise, students will encounter the pathology and therapy of joint diseases, including osteochondrosis (OCD). Hoof diseases represent a special part of the program with which students will be familiar, and the pathogenesis and treatment of hoof corium diseases are important here. Within the scope of ophthalmology, students will be presented with the most important eye diseases and the use of medications in the treatment of the most common eye diseases. Since the horse increasingly belongs to the category of pet animals, it is important that students acquire a routine of understanding psychological moments in the owner-patient relationship. As part of equine dentistry, students will learn about the physiology of equine teeth, performing prophylactic dental correction in field conditions, and treating basic dental pathology. Surgery, orthopedics, and ophthalmology as part of the course "Diseases and treatment of farm animals" include diagnostic procedures and treatment methods determined by the specific problems that arise in the conditions of farm keeping and the limitations of feasibility and financial profitability of treating surgical diseases of farm animals. Since farm animals are rarely the subject of treatment in the conditions provided by the Clinic for Surgery, Orthopedics and Ophthalmology, students will primarily be introduced to diagnostic and treatment methods that are feasible in the regional field veterinary institution or on the farm itself. Some of the elective procedures, especially those related to the general anesthesia of farm animals, will be presented in the working conditions at the Clinic. Students will master the clinical approach to farm animals, primarily in field conditions, in order to protect their health and have a beneficial effect on the patient's health. They will master sedation methods and all forms of local anesthesia since general anesthesia in field conditions is most often risky for the health of the patient (especially ruminants). The basics of ophthalmic and orthopedic diagnostics, which can be carried out in field conditions, will enable students to correctly assess the condition of the sick patient and make a correct assessment of the treatment that can be carried out. With previously acquired knowledge about internal diseases of the digestive system of farm animals, they will be able to make the correct decision on the selection and performance of surgery on the abdomen of farm animals. We will also enable them to acquire the necessary knowledge and skills for processing external and internal injuries and treating the consequences of localized infections observed in farm animals. And, finally, it is important that they acquire the necessary knowledge to independently perform elective procedures that are not directly related to the disease states of farm animals, but primarily have economic significance, but it is necessary that they¹³ are performed by a doctor of veterinary medicine.



INTERNAL DISEASES

In this course, students will master knowledge and skills about internal diseases in horses in a more detailed way than in the previous classes. Thus, more important units from gastrointestinal diseases, diseases of the respiratory system, diseases of the cardiovascular system, diseases of the blood and blood-forming organs, urological diseases, and dermatological and neurological diseases will be worked on. Endoscopy of the gastrointestinal tract, diagnostic and therapeutic approach to colic in horses and tracheal aspirate - indications, technique, interpretation, and bronchoalveolar lavage will be covered in particular.

Furthermore, after-acquired knowledge and skills, the expert are capable of carrying out clinical procedures and interpreting clinical and laboratory data, thus diagnosing the most common internal diseases of farm animals, as well as identifying conditions that need to be referred for further specialist treatment. The knowledge and skills acquired in this course make him qualified to work in institutions that deal with maintaining the health of farm animals. This knowledge provides a good basis for following further education in specialist areas that are carried out within the framework of continuing education.

INFECTIOUS DISEASES

After the acquired knowledge, students will gain knowledge about the frequency of infectious diseases in horses and the possibilities of diagnosis. During the exercises, they will specialize in sampling the materials needed for the objective diagnosis of equine infectious diseases and will become familiar with authorized diagnostic laboratories where the objective diagnosis is performed. The acquired knowledge will enable them to correctly interpret the findings, and with knowledge of general prophylaxis, they will have the knowledge necessary to carry out disease control and prevention measures. Acquired knowledge about vaccination programs for equine infectious diseases will enable them to carry out immunoprophylaxis with the aim of preventing the occurrence of equine infectious diseases.

Students will expand their knowledge about differential and objective diagnosis of infectious diseases of cattle acquired during basic education. They will acquire the knowledge necessary to interpret the findings of objectively diagnosed infectious diseases using methods that are officially implemented in the Republic of Croatia, as well as the possibilities of access to general prophylaxis and immunoprophylaxis in intensive cattle breeding. Students will expand their knowledge about differential and objective diagnosis of infectious diseases of sheep and goats acquired during basic education. They will acquire the knowledge necessary to interpret the findings of objectively diagnosed infectious diseases using the methods that are officially implemented in the Republic of Croatia, as well as the possibilities of access to general prophylaxis and immunoprophylaxis in intensive sheep and goat farming. Students will expand their knowledge about differential and objective diagnosis of infectious diseases of pigs acquired during basic education. They will acquire the knowledge necessary to interpret the findings of objectively diagnosed infectious diseases using methods that are officially implemented in the Republic of Croatia, as well as the possibilities of access to general prophylaxis and immunoprophylaxis in intensive pig farming.



RENDGENOLOGY, ULTRASOUND AND PHYSICAL THERAPY

After the acquired knowledge, students will be trained to independently record the extremities in horse and X-ray diagnosis. Students will also be trained in the correct performance of x-rays of the eyelids and the interpretation of the most common pathological changes.

PARASITOLOGY

After the acquired knowledge and skills, the students were introduced to the development, morphology, and determination of endoparasites as an etiological factor in the emergence of clinical signs in the most common invasive diseases of horses. They are also trained to perform a parasitological search and determine the most common horse parasites, for which prevention and treatment is an integral part of animal health care. In the case of invasive diseases for which diagnosis is possible in a specialized laboratory, they are trained to correctly take the material and deliver it to the specialized laboratory with all the necessary data after a suspicion has been raised. Students would know how to properly take excrement samples and search them for the presence of developmental forms of parasites in farm animals. They would know how to perform a skin search and properly take the material for the search. They would master the techniques of different ways of applying antiparasitics in farm animals.



SELECTED CHAPTERS FROM PATHOLOGY

During the class, students will learn more about the issue of horse breeding in a practical way, in the form of exercises. In this way, they will become familiar with the technique of dissection and pathomorphological changes in diseases that are relatively common in horses and foals, i.e. those diseases that do not or rarely affect other types of animals. Special emphasis will be placed on acquiring knowledge by which certain diseases can be distinguished (differential diagnosis) and which samples must be taken for histopathological examination and other diagnostic tests that must be performed in order to objectively prove a certain disease.

Through practical work, students will become more familiar with the issue of breeding farm animals. In this way, they will become familiar with the pathomorphological changes in more significant and frequent diseases of cattle, pigs, sheep, and goats and the way in which individual diseases can be distinguished and which tissues must be excluded and sent for additional tests in order to establish a final diagnosis.



PHARMACOLOGY AND CLINICAL TOXICOLOGY IN HORSES

Within the Clinical Pharmacology of Horses, which is designed as a seminar, students will learn about the typical diseases of this noble species of animals and the possibility of their treatment. After acquired knowledge and skills, students will be trained to recognize poisoning, treat a poisoned animal, evaluate the success of the treatment, and appropriately sample material for diagnostic tests, primarily for toxicological analysis. Also, they will be able to assess possible wider adverse consequences caused by poisoning and evaluate the results of chemical-toxicological tests in the case of residues ("Regulations").

PHARMACOLOGY AND CLINICAL TOXICOLOGY (FARM ANIMALS)

At the very end of formal higher education, students will master the treatment of some diseases of farm animals, especially since they will be able to see much of what they learned during their studies in a more comprehensive way (it will be easier to "put together the mosaic"). In particular, they will learn how to properly dose drugs that are used in group therapy of animals (pigs, poultry) through food and drinking water, and what are the pharmacotherapeutic bases for controlling and treating certain diseases that often appear in certain types of animals. In the part of toxicology, after acquired knowledge and skills, students will be trained to recognize poisoning, treat a poisoned animal, evaluate the success of the treatment and appropriately sample material for diagnostic tests, primarily for toxicological analysis. Also, they will be able to assess possible wider harmful consequences caused by poisoning and evaluate the results of chemical-toxicological tests in the case of residues ("Regulations").



NUTRITION AND DIETETICS

An acquaintance of future veterinarians with nutrition as an important factor in the prevention of the occurrence of a significant number of diseases and as a possible auxiliary therapy in the treatment of sick horses. Students will learn about the prevention of feeding errors, which are common causes of metabolic diseases, and about the peculiarities of therapeutic feeding in farm animals.



POULTRY

Acquiring knowledge about the method of production of all age and production categories of poultry with the aim of health protection.



ORIENTATION: SMALL COMPANION ANIMALS

Table 7.: X. and XI. semester – (Obligatory courses)

COURSE STATUS	COURSE NAME	semester	TOTAL HOURS				TOTAL ECTS POINTS
			L	S	P	F	
Obligatory	Diseases and Treatment of Dogs and Cats I	10.	0	0	45 (PK L)	0	3.5
Obligatory	Diseases and Treatment of Dogs and Cats II	11.	0	15	30 (KL)	0	3.5
Obligatory	Diseases of Pet Birds, Exotic and Laboratory Animals	11.	50	10	30 (22KL+4 PKL+4PK)	0	7

Table 8.: X. semester – (Elective courses)

COURSE STATUS	COURSE NAME	semester	TOTAL HOURS				TOTAL ECTS POINTS
			L	S	P	F	
ELECTIVE 7 ECTS-a* (minimal 7, maximum 10 ECTS)	Animal Dietetics	10.	5	5	20	0	2
	Poisonous plant toxicology	10.	12	0	9	0	1.5
	/	/	/	/	/	/	/
	Diseases of Honeybees in Contemporary Production	10.	6	2	2	5	1
	Fishery(5)	10.	3	4	0	8	1
	Total			26	11	31	13

Table 9.: XI. semester – (Elective courses)

COURSE STATUS	COURSE NAME	semester	TOTAL HOURS				TOTAL ECTS POINTS
			L	S	P	F	
ELECTIVE 2 ECTS-a (minimal 2, a maximum 4 ECTS)	Organic Poultry and Game Birds Production	11.	10	10	4	6	2
	Organic Poultry and Game Birds Production	11.	10	5	0	0	1
	Technology in Poultry Production	11.	6	4	5	0	1
	Management and Marketing in Veterinary Practice	11.	10	0	20	0	2
	Emerging Infectious Diseases	11.	28	0	2	0	2
	Zoonoses	11.	24	4	2	0	2
	Veterinary Cytology	11.	10	0	20	0	2
	Total			98	23	53	6

(L- lectures, S – seminars, P-practicals, F – field trips)

General and special knowledge acquired during orientation:

SURGERY, ORTHOPEDICS AND OPHTHALMOLOGY

Students in X and XI. semester, they deepen their knowledge of ophthalmology acquired in VIII. semester of study. They focus on special eye examinations (tonometry, biomicroscopy, and fundoscopy). During the course of their studies, students encounter the dentistry of dogs and cats for the first time, so they begin with the basics of anatomy and physiology of the oral cavity, after which they are introduced to dental instruments and equipment. Then comes the diagnosis of oral cavity disease. After completing the dentistry classes, students were introduced to marking teeth and performing an oral cavity examination. They are trained to recognize certain diseases of the oral cavity, primarily tartar, periodontitis, and gingivitis. They are also familiar with the basics of their treatment. They will also be familiar with the basics of tooth extraction. After listening to anesthesiology in VII. semester, students deepen their knowledge of veterinary anesthesiology with a special focus on the peculiarities of anesthesia in dogs and cats. They also learn about the basics of emergency patient anesthesia. After the acquired knowledge, students will be able to perform less demanding anesthesia in dogs and cats. In orthopedics classes, students practically get to know the basic principles of using alantesis for the surgical treatment of fractures. The knowledge and skills acquired in this course provide a good basis for following further education in specialist areas that are carried out within the framework of continuing education. After acquiring knowledge and skills, the expert is capable of diagnosing the most common surgical diseases of dogs and cats encountered in a small practice and performing surgical procedures with the necessary technical-technological support and is also educated in maintaining the health of small animals. Acquired knowledge is sufficient for regular follow-up through permanent training or attending specialist or doctoral studies, and in this connection also for serving professional and scientific research areas of professional and scientific organizations in which surgical knowledge and skills are needed.



SELECTED CHAPTERS FROM PATHOLOGY

Students will become more familiar with the most common dermatological conditions (diseases) and tumors in dogs and cats and will become familiar with the role of histopathological and cytological diagnostics in establishing a final diagnosis, thus also providing a prognosis for the outcome of the process and the effectiveness of therapy. It is of particular importance to acquaint students with the correct sampling of material for the above tests because without it there is no quality diagnosis.

INFECTIOUS DISEASES OF DOGS AND CATS

The student's knowledge of differential diagnosis and treatment of infectious diseases of dogs and cats, acquired through basic education, is expanded. He acquires the knowledge necessary for objectively diagnosing infectious diseases using methods that can be implemented in a veterinary clinic, learns about the possibilities of treatment using different drugs and medicinal preparations, and acquires the knowledge necessary for an individual approach to general prophylaxis and immunoprophylaxis.



RENDGENOLOGY, ULTRASOUND DIAGNOSTICS AND PHYSICAL THERAPY

After the acquired knowledge and skills, the student will be able to independently diagnose the most common pathologies of the bone system and the pathology of the chest and abdominal cavity using X-ray and ultrasound.



CLINICAL PHARMACOLOGY

At the very end of formal higher education, students will master the treatment of some diseases of dogs and cats that they heard little about during the Pharmacology course and will learn the importance of rational use of drugs, especially antimicrobial and antiparasitic ones. In particular, they will learn that cats as so-called bottlenecks of evolution are subject to a special pharmacotherapeutic regime, at least when it comes to some groups of drugs.

INTERNAL DISEASES

After acquiring knowledge and skills, the expert is capable of performing clinical procedures and interpreting clinical and laboratory data, thus diagnosing the most common internal diseases of dogs and cats and is also capable of recognizing conditions that require further specialist treatment. The knowledge and skills acquired in this course make him qualified to work in institutions dealing with the maintenance of the health of dogs and cats. This knowledge provides a good basis for following further education in specialist areas that are carried out within the framework of continuing education.

NUTRITION AND DIETETICS

After attending the class, students will have the knowledge to assess the nutritional status of the animal, food, and the feeding process, and will become familiar with the possibilities of meal correction. Additionally, they will be trained to correct meals (diet) in the case of diseases of individual organ systems, as well as to plan a feeding program for old animals and young animals.



OBSTETRICS

After acquiring knowledge and skills, the expert is capable of diagnosing and treating gynecological diseases in dogs and cats. Also, the specialist is capable of performing common gynecological operations. With the acquired knowledge, he is able to maintain the health of pets. The acquired knowledge is sufficient for further education through specialist or doctoral studies.

PARASITOLOGY

After acquiring knowledge and skills, the future expert is familiar with the algorithm of proof or exclusion, and the determination of ecto- or endoparasites as an etiological factor in the emergence of clinical signs in the most common invasive diseases of dogs and cats. He is also qualified to perform a parasitological search and determine the most common parasites of dogs and cats, in which prevention and treatment are an integral part of caring for the health of animals, as well as people. In the case of invasive diseases where the diagnosis is possible in a specialized laboratory, they are trained to correctly take the material and deliver it to the specialized laboratory with all the necessary data after a suspicion has been raised.

CLINICAL TOXICOLOGY

After acquiring knowledge and skills, the student will be able to recognize poisoning, treat a poisoned animal, assess the success of the treatment, and appropriately sample material for diagnostic tests, primarily for toxicological analysis.

DISEASES AND TREATMENT OF BIRDS - PETS, EXOTIC AND LABORATORY ANIMALS

As part of this course, the student will learn about diseases and treatment of birds - pets, laboratory animals, reptiles, and aquarium and terrarium diseases.



ALL THE DATA PRESENTED IS JUST INFORMATIONAL AND CAN BE CHANGED OR DIFFERENT FOR THE ENROLLMENT TO ORIENTATION (OBLIGATORY AND ELECTIVE COURSES DATA). PLEASE TAKE A LOOK AT THE INFORMATIONAL PACKAGE ON THE FACULTY WEB PAGE LINK:

https://www.vef.unizg.hr/wp-content/uploads/2022/09/za-web_informacijski_ENG_22_23-MARTINA.pdf

FOR FURTHER ASSISTANCE PLEASE CONTACT STUDENT'S OFFICE.

