### Curriculum of University of Ljubljana, Veterinary Faculty

The following curriculum contains short descriptions of the lectures, assessments and reading materials of the courses offered to exchange students by the Veterinary Faculty in Ljubljana. You can also check the workload distribution and scheduling of courses in the following document.

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<td>EQUINE SPORTS MEDICINE</td>
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# HISTOLOGY WITH EMBRYOLOGY 2

**Lecturer**  
prof. dr. Milka Vrecl

**ECTS**  
7

**Semester**  
Winter

**Type**  
Professional compulsory

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## Syllabus outline

The basic aim of the course is to introduce students to the theoretical and practical elements of the microscopic composition and differences in organ and tissue structures in various domestic animals. Lessons will allow students to gain the knowledge of the microscopic structure, embryonic formation and the development of tissues and organs by looking at the structure and function of the cardiovascular, endocrine, lymphatic, digestive, respiratory, urinary and reproductive system, as well as the early embryonal development and the origin and development of different organ systems and body parts.

## Assessment

The final mark is composed of two separate grades. After completing the practical course, students take the practical colloquium (100%). Only after successfully passing the colloquium, can students also take the oral exam. The exam is a combination of defence of the histological protocol (written description of the histological section) (30%) and an oral exam (70%).

## Literature in Slovene language:


## Literature in foreign languages:

**Syllabus outline**

The objective of the parasitology course is to introduce students to the systematics, biology, morphology and life cycles of parasites and the changes they induce in their hosts. Work is divided into theoretical lectures and practical work. Lectures will cover the effects of parasitic diseases, the role and mechanisms of the immune system, and the morphological and biological characteristics of parasites, as well as their activities in the host. The practical part will deal with sampling, practical examinations and the morphology and development stages of different parasites.

**Assessment**

Following the winter semester, students are obliged to pass the oral colloquium before sitting in the final exam (written and oral) during the prescribed exam period. The final mark is composed of the colloquium grade (20% of the final grade), written exam grade (60% of the final grade) and oral exam grade (20% of the final grade).

**Literature in Slovene language:**

5. Vergles Rataj A., CD – Mikroskopiranje, vaje paraziti, 2010

**Literature in foreign languages:**

<table>
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<tr>
<th><strong>VETERINARY PHYSIOLOGY</strong></th>
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**Syllabus outline**

The purpose of this course is to ensure students gain an understanding of general and special physiological processes in domestic and other animals treated by veterinary medicine. Course lectures will focus on the progressive development of knowledge and understanding of physiological processes associated with body organ systems (cardiovascular, digestive, urinary, respiratory, musculoskeletal, nervous, endocrine), their significance and cooperation in the maintenance of body homeostasis, as well as an understanding of nutrient and energy utilization, thermoregulation, maintenance of acid-base and water balance, lactation and egg production. Students also obtain practical skills by being introduced to analytical, diagnostic and experimental methods used in modern physiology.

**Assessment**

**Practices:** 4 written colloquiums; final grade is the mean value of all 4 colloquiums; each colloquium grade must be positive!  
**Lectures:** Possibility of 2 partial exams (written + oral): 1st partial exam after the winter semester, 2nd partial exam (for students who pass the 1st exam) after the summer semester. Final grade of the exam is the average value of both 2 partial exams (each partial exam grade must be positive)!  
**Passing of the final united exam:** students unable to pass the exam with partial exams during the course can apply to the final exam, which includes all topics covered by this course.  
**Final subject mark** is double (the exam grade and the colloquium grade)

**Readings**

*English literature:*
The main goal of this course is to present fundamental knowledge concerning the structure and characteristics of bacteria, viruses and fungi. Lessons are divided into two parts. The first one will cover general microbiology and will look at the classification, structure and growth of bacteria, viruses and fungi, and how to combat them. The second will examine clinical microbiology by looking at different bacterial phyla, pathogenic fungi, pathogenic microbes in food of animal origin, and virus infections in domestic animals. The practical work consists of working in a laboratory and practicing simple and safe methods in groups or individually.

Following the winter semester, students have to sit two exams covering all topics from the lectures and practical sessions in general microbiology.

Following the summer semester, students have to sit two exams covering all topics from the lectures and practical sessions in clinical microbiology.

The final mark is calculated separately for lectures and the practice section on the basis of individual exam results. First grade is an average of the theoretical colloquium, the second is an average of the practical colloquium.

### Literature in Slovene language:
2. Jurca J: Osnove imunologije (študenti dobijo pregled v obliki študijskih gradiv)

### Literature in foreign languages:
# PHYSIOLOGY OF ANIMAL NUTRITION

**Lecturer**
assist. prof. dr. Breda Jakovac Strajn

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## Syllabus outline

The main objective of this course is to familiarise the student with the basic knowledge of animal nutrition, feedstuffs, properties and quality of feed supplements, and nutrient requirements of different animal species and categories. Course lessons will cover the physiological rules governing animal nutrition, the form and properties of different feeds, properties and functions of individual nutritional substances and nutrient requirements for different types and intensity of animal husbandry.

## Assessment

The final mark is composed of two separate grades, a written colloquium (100%) and an oral exam (100%).

### Literature in Slovene language:

2. Vengušt A. Prehrana prežvekovalcev, konj in exotov – material za študente, 2011

### Literature in foreign languages:

11. Domačinović M. Hranidba domaćih životinja, Poljoprivredni fakultet u Osijeku 2006
HISTORY OF VETERINARY MEDICINE

Lecturer: prof. dr. Andrej Pengov

ECTS: 3

Semester: Summer

Type: Professional elective

Prerequisites: /  

Syllabus outline: The aim of this course is to present a short overview of the history of veterinary medicine from the prehistoric era until the present time. Lectures will thus examine the domestication and treatment of animals in prehistory, then move to veterinary medicine in Ancient Greece and Rome, as well as in other non-European nations at that time, jump to the Middle Ages and then to the foundation of the first veterinary school in the Renaissance and examine the formation of veterinary medicine in the modern scientific era.

Assessment: Oral exam (100%).

Readings:
### PATHOPHYSIOLOGY

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<th>prof. dr. Robert Frangež</th>
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**Syllabus outline**

The aim of this course is for students to obtain basic knowledge of disease-induced physiological mechanisms and functional alterations in the living organism. To gain this knowledge, lessons will cover homeostasis disturbances and the reaction of organisms to such events, their etiology, changes that occur in organs and bodily fluids, as well as disease and death. This course also contains a practical component with laboratory practices.

**Assessment**

Students must successfully pass the colloquium in order to sit the final written exam (100%). If needed, an additional oral exam can be taken.

**Literature in Slovene language:**

**Literature in foreign languages:**

**Readings**
Epizootiological studies provide students with the basic knowledge of preventive veterinary medicine and the tools to improve animal health and welfare, especially in case of epizooties. Lectures will start with general epizootiology and its research methods, then move on to infections, the epizootiological factors, prevention and treatment of animal diseases. They will also examine epizootiological data analysis and models of infection, as well as the measures, cases and prevention of most prevalent diseases. Lessons will be complemented with exercises simulating cases of epizooties.

**Syllabus outline**

The main objective of the course is to familiarise students with clinical animal nutrition, especially as concerns possible mistakes in the nutrition, contamination of feed with substances hazardous to the health of animals, and improper management in intensive production. Lessons will begin by examining the relation between nutrition, production, health status and reproduction of animals, then look at faults in feed quality and delivery, the impact of improper feed on all aspects of animal health, the hygienic unsuitability of feed contaminated with toxic or naturally harmful substances and supplements, as well as the effects of radionuclides on animal feed and how to deal with them. Students gain additional experience through case studies and laboratory practice.

This course gives students two separate grades. The first one from a written colloquium that is composed of a written part (85%) and a paper (15%). The second grade is obtained from an oral exam (100%). In order to be allowed to take the colloquium, students must be present during practical exercises (two absences allowed, including excused), must give in their reports at the end of each exercise and must present their paper. In order to be allowed to take the final exam, students must be present at at least 50% of the lectures and passing the colloquium.

**Literature in Slovene language:**

**Literature in foreign languages:**
2005. (Selected chapters).
**Syllabus outline**

The objective of this course is to allow students to understand the need for an interdisciplinary approach and its importance for successful field-specific and research work when using drugs in veterinary medicine. Lessons are divided into general and special pharmacology. The former will examine choice and dose of treatment, the effects of drugs and poisons in animal organisms and the external and internal factors that determine that effect, as well as dealing with poisons and toxicity in animals. The latter will take a specific look at the mechanisms and field-specific rules of using antibiotics and antimicrobial chemotherapy, local anaesthetics, and the pharmacology and toxicology of different body systems.

**Assessment**

The final mark is composed of two separate grades. The first comes from two written colloquia (50% + 50%) as part of course exercises in the Summer semester, with the final grade an average of both colloquia. The second grade is obtained with an oral exam, with 80% coming from the student’s knowledge of the subject matter and 20% from a paper.

After completing the Winter semester, it is possible to sit a partial exam (general pharmacology and organo-pharmacology).

**Literature in Slovene language:**


**Literature in foreign languages:**

# SURGERY AND OPHTHALMOLOGY

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<th>assist. prof. Vladimira Erjavec</th>
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## Syllabus outline
The goal of this course is to make certain students are qualified for independent work within the scope of general surgery, and obtain the knowledge of the basics of anaesthesiology and ophthalmology. Lessons will be provided on how to ensure a sterile surgical environment, on the examination and treatment of wounds, on surgical instruments and equipment and on the basics of different types of surgery. Students get to practice their theoretical knowledge during practical work in small groups of students and individual clinical work.

## Assessment
Students must take a written colloquium on anaesthesiology and written and oral/practical colloquium on surgery. The average of these two provides the first grade. After successfully passing both colloquia, students can sit the written exam, which gives them their second grade. The final mark is composed of these two separate grades.

## Readings
Since clinical examination is of major importance for establishing the health status of animals, this course will focus on teaching students practical clinical diagnostic skills. The study process is problem-oriented, with lectures ensuring that students take into account the disease history of an individual animal, the herd and the environment; that they are familiar with diagnostic methods, reasoning, technique, and laboratory methods; can provide a clinical assessment of the patient, can handle different types of animals and can examine the individual organic systems in domestic animals. In addition, practical work is also performed on patients in the examination clinical theatre and barn of the Clinic for ruminants, Clinic for horses, Institute for the health care of pigs and Clinic for surgery and small animals, as well as in the Clinical laboratory of the Clinic for ruminants.

**Assessment**

Written (20%) and practical colloquium (80%); oral exam (100%). The practical course and the oral exam each give students separate grades.

**Literature in Slovene language:**

**Literature in foreign languages:**
### ANATOMY OF LABORATORY AND EXOTIC ANIMALS

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<th>assist. prof. dr. Valentina Kubale Dvojmoč</th>
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**Syllabus outline**

This course is clinically and applicative oriented. The objective is to introduce or expand the theoretical and practical knowledge of morphological features in laboratory and captive exotic animal species. Lessons will begin by covering the evolutionary morphology of vertebrates, then move on to the anatomy with basics of embryology of mammals, birds, reptiles and amphibians, as well as look at anatomical specificities of fishes and invertebrates frequently encountered in aquaculture and terrariums. Students also get to practice during laboratory exercises, which include demonstrations, dissection and microscopic examination, as well as go on visits to the zoo, a laboratory animal breeding centre and terrarium or aviary centres.

**Assessment**

Students obtain their first grade by sitting a written exam that will cover both lectures and practical work. Second grade is obtained by writing a paper. The final mark consists of two separate grades.

**Readings**

**MICROBIOLOGY PRACTICAL COURSE**

**Lecturer**
prof. dr. Andrej Pengov

**ECTS**
3

**Semester**
Summer

**Type**
Professional elective

**Prerequisites**
Students must pass the exam in Microbiology with immunology.

**Syllabus outline**
The aim of this course is to give students the knowledge and skills that are necessary for diagnosing and preventing infectious diseases in domestic animals. During the lectures, students will be taught how to use sterile work techniques and how to protect themselves and the environment from infection/contamination, how to recognise important microorganisms and how to perform a complete microbiological examination from sampling to final diagnosis. Students also get to visit farms that experience animal health problems that could be a result of pathogenic microorganisms. There they get to put into practice what they learnt during the lectures.

**Assessment**
Students use scientific literature to prepare a paper on a microbe that they identified. This paper must then be presented to fellow students. The presentation determines the final grade.

**Readings**
3. Bergey's manual of systematic bacteriology vol 1, Williams & Wilkins, Baltimore 1984, (Selected chapters).
### REPRODUCTION OF DOMESTIC ANIMALS WITH OBSTETRICS

<table>
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<th>prof. dr. Marjan Kosec</th>
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#### Syllabus outline
The objective of this course is for students to acquire basic knowledge of animal reproduction and get them fully familiarised with the structure, function and position of the reproductive organs. Content of the lessons will deal comparatively with the development, structure and function of reproductive organs in all domestic animals; reproductive behaviour that is specific for individual species of domestic animals and possible deviations caused by pathological changes; fertilisation, embryo development, pregnancy and parturition for individual species; and all possible forms of reproduction and the frequency at which a specific type of reproduction is used in a specific species of domestic animals.

#### Assessment
The final mark is composed of two grades. The first one is obtained with an oral exam, which is composed of a winter midterm (40%) and summer midterm (60%) exam with questions pertaining to the theoretical part of the course; the second is gained by passing the colloquium (100%), which is composed of a written exam, oral defence and a practical part.

#### Readings
**DISEASES AND HEALTH CARE OF EQUINES**

<table>
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<th>Lecturer</th>
<th>assist. prof. Peter Kruljc</th>
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**Syllabus outline**

The goal of this course is to familiarise students with the issues associated with identifying diseases, their course and the methods of medical treatments and health care in horses. Lessons are divided into a theoretical and practical part. The former will examine infectious diseases and equine internal diseases, how to identify them and provide treatment, while the latter includes the implementation of theory in clinical practice, the monitoring of diagnostic procedures and methods, and a follow up on the success of specific treatment.

**Assessment**

Students have to successfully pass a seminar and colloquium (15%) in order to be allowed to take the final written exam and oral advocacy (85%) after the end of Summer semester.

**Readings**

The aim of this course is to theoretically and practically teach students all about pig diseases and the health care of pigs. The content covered by the lessons will include pig production in the world and in Slovenia, terminology associated with pig production, highly infectious viral diseases, multisystem diseases, diseases of different bodily systems, poisoning, congenital anomalies, ethopathies and parasitical diseases, zoonosis and the welfare of pigs. Students also perform clinical and field practices.

Students obtain two separate grades for this course. First grade is the final exam (100%); second grade is composed of a seminar and colloquium (100%).

**Literature in Slovene language:**

**Literature in foreign languages:**
DISEASES AND HEALTH CARE OF POULTRY

<table>
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<tr>
<th>Lecturer</th>
<th>prof. dr. Olga Zorman Rojs</th>
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<td>Syllabus outline</td>
<td>This course provides students with the theoretical knowledge and practical experience on diseases and preventative measurements in health care of poultry. Lectures will look at production technology and management of different poultry species, viral, bacterial and parasitic diseases, and the metabolic disorders and intoxications in poultry. The practical part will enable students to use their theoretical knowledge under laboratory, clinical and field conditions, which is where they will try out different diagnostic procedures, different methods of medical treatment and vaccination on practical cases.</td>
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| Assessment        | • Practical part: practical, written and oral mid-term (colloquium) (50%+50%)  
• Oral exam (100%)  
The final mark consists of two grades. |

**Literature in Slovene language:**
3. Veljavná zakonodaja na področju kužnih bolezni perutnine.

**Literature in foreign languages:**
The goal of this course is to familiarise students with modern technologies of animal breeding that take into account animal health, animal welfare and environmental protection. Lectures will cover the following major topics: introduction to ecology, environmental aspects of animal production, animal breeding technology, animal welfare, including animal transport, handling of animal by-products, basic elements of air pollution from animal production and biosecurity. In addition to theoretical lessons, students will also undertake laboratory and field exercises, simulations (modelling) and discussion hours after lessons.

Assessment

Theoretical part: Either a final written exam worth 100% of this grade, or two partial written exams after each semester (40% + 60%). Students can take an oral exam if they are between grades or want to improve it.

Practical part: 10% oral defence of paper, 90% oral colloquium.

Readings


Students can access reading materials at the Institute and in the Veterinary Faculty library.
# 4th Year Electives

## SURGERY PRACTICAL COURSE

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<th>assist. prof. dr. Vladimira Erjavec</th>
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### Syllabus outline

The course is organised for the purpose of improving and deepening the knowledge of students in specialised surgery and for preparing them for the use this knowledge in practice at veterinary clinics. The course is carried out as clinical work in small groups of students and individually; and will cover topics such as suturing materials, surgical knots and sutures, laparotomy, cystotomy, tracheotomy, oesophagostomy, feeding tube insertion, enterotomy, splenectomy, gastropexy, oophorectomy, neutering, surgery of fingers, tail and extremities, surgery of salivary glands, surgery of brachycephalic syndrome, reconstruction techniques, surgery of the eye, orthopaedic examination of dogs and cats and approaches to the joints and bones.

### Assessment

Written and practical exam. Students obtain two grades, one from each exam.

### Readings

### PATHOMORPHOLOGICAL PRACTICE

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<tr>
<th><strong>Lecturer</strong></th>
<th>assist. prof. dr. Tanja Švara</th>
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<tr>
<td><strong>ECTS</strong></td>
<td>3</td>
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<tr>
<td><strong>Semester</strong></td>
<td>Summer</td>
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<tr>
<td><strong>Type</strong></td>
<td>Professional elective</td>
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<tr>
<td><strong>Prerequisites</strong></td>
<td>Passed a course on Pathology.</td>
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#### Syllabus outline
The course of pathomorphological practise familiarises veterinary students with the duties of a veterinary pathologist – establishing the cause of death or determining the etiology and course of a disease. Before working in the necropsy room and the laboratory, students are made well acquainted with the necessary safety measures. During this course, students will perform a dissection of one carnivore (dog or cat), a pig, an adult ruminant or horse and a small ruminant or cattle. Samples of tissues and organs are taken for additional diagnostic procedures. In the laboratory, students will be acquainted with the laboratory equipment and methods that are used in histopathologic diagnostics. For diagnostic cytopathology, written instructions for the Giemsa staining method and preparation of smears is given to students.

#### Assessment
Each group of 3 students chooses on their own one of the dissected cases and prepares a necropsy record. All necropsy records are orally presented and discussed during the final lecture. The grade they receive is determined by the quality of the necropsy record, its presentation and given responses to the questions on the presented case. Students actively collaborate in discussion and evaluation. Each student receives two grades.

#### Readings
Students taking this course use the same literature as in courses of pathology, pathophysiology, clinical courses, and forensic and administrative veterinary medicine.
The goal of this course is to convey to students the knowledge of the role and status of the dog in the animal system, as well as in human society, and present the important aspects of its serving roles (police, army, help to the disabled, search and rescue dogs, etc.). Lectures will examine the origin of the dog and its relatives, its development and behaviour, aging and cognitive disease, behavioural problems and disturbances, human impact on behaviour, and the predisposition of certain breeds for specific diseases. Students also obtain practical skills by participating in behavioural therapy and basic learning with the help of positive motivation, as well as by visiting and being demonstrated the work of police and search and rescue dogs.

**Assessment**
Written exam (100%).

**Readings**
1. Domanjko-Petrič, Aleksandra. Course notes
4. Web pages
   http://www.upei.ca/~cidd/intro.htm
   http://www.webtrail.com/petbehavior/
   http://www.webtrail.com/petbehavior/dogthink.html
# ECOTOXICOLOGY IN VETERINARY MEDICINE

<table>
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<tr>
<th><strong>Lecturer</strong></th>
<th>prof. dr. Silvestra Kobal</th>
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<td><strong>Prerequisites</strong></td>
<td>Passed a course on Pharmacology with toxicology.</td>
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## Syllabus outline

This course aims at ensuring students understand the causes and consequences of environmental pollution with veterinary medicinal products and other chemicals, as well as understand the analytical methods and techniques used for qualitative and quantitative identification of these environmental pollutants. Lessons will examine animal intoxication due to environmental pollution, toxicokinetics and toxicodynamics of drugs and chemicals, basics of ecotoxicology, sampling, laboratory analysis and interpretation of results, advantages and disadvantages of specific methods and possible measures for treatment and environmental remediation. Students get to expand their knowledge with practical work in laboratories, seminars using problem-based learning and field experiments.

## Assessment

Students obtain a single grade, made up from a paper (30%) and an oral exam (70%).

## Readings

4. Online sources (access to articles and other literature):
   - IVIS (http://www.ivis.org/)
   - CAB Abstracts
# DISEASES AND HEALTH CARE OF RUMINANTS

<table>
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<tr>
<th><strong>Lecturer</strong></th>
<th>assist. prof. dr. Jože Starič</th>
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The goal of this subject is to teach and equip students with the necessary skills to be able to independently perform well in a clinical practice in the entire field of the health care of ruminants (internal medicine and surgery). Students acquire an in-depth knowledge base of diseases and welfare issues that appear when dealing with ruminants. They are also taught the correct handling and restraining of animals, the most frequent interventions (technical, nursing, surgical), the use of some special diagnostic procedures (including computer assisted), and reasons for the effectiveness of preventive measures. Students get to reinforce their knowledge in the practical part of the course. Training is performed “hands-on” on patients in the clinic, as well as on various cattle and sheep farms. Laboratory practice is performed at the Clinical laboratory. A field excursion will be conducted to allow the analysis of the health and productivity in herds raised with intensive production methods.

| **Assessment** | a) Partial exam after the 9th (winter) semester  
b) Partial exam after the 10th (summer) semester  
Attendance at practical exercises, successfully passed exam for the 9th and 10th semester and seminar assignment presented are prerequisites to be eligible to take final oral exam.  
Grading: 1 – 5 negative; 6 – 10 positive in compliance with the University statute.  
Final grade is single. |

**Literature in foreign languages:**
2. Smith BP. Large Animal Internal Medicine, 5th edition Mosby, St. Louis 2014. (Selected chapters)
3. The veterinary clinics of North America: Food animal practice – tematske revije s preglednimi članki (Selected chapters)
# SMALL ANIMALS INTERNAL MEDICINE AND SURGERY

<table>
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<tr>
<th>Lecturer</th>
<th>prof. dr. Zlatko Pavlica</th>
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## Syllabus outline

The objective of this course is to ensure students obtain the theoretical knowledge of disease etiology and pathogenesis, clinical signs and diagnostic procedures, conservative and surgical treatment of different diseases in dogs and cats, as well as disease prevention and suppression. Lessons will examine in detail the topics of veterinary internal medicine (gastrointestinal, renal, urinary tract, cardiovascular, respiratory diseases and endocrine disorders), canine and feline emergency medicine and special surgical treatments, canine and feline oncology, canine and feline dermatologic diseases and general division of infectious diseases and algorithms of diagnostic procedures.

## Assessment

Students are obliged to pass:
- written exam which includes 60 questions with multiple (5) choice answers,
- practical examination (clinical cases),
- oral exam that includes 5 questions on diseases of different organ systems where extensive descriptive answers are assessed.

Partial exams on general small animal medicine and first aid are possible after the Winter semester.

## Readings

The objective of this course is to teach students the anatomy and physiology of fish, the biology of the honeybee society, the role of fish and honeybees in preserving nature and their importance for contemporary agriculture. Lectures will comprise the basics of pathophysiology and immunology of fish and honeybees, infectious and non-infectious diseases and the anomalies in their development. Special focus will be given to the epizootiology in an open area and the disease prevention. In the practical part, the course will deal with the anatomy of fish and honeybees and with basic diagnostic procedures. Through fieldwork, students will get an insight into aquaculture, beekeeping, and the selection, reproduction, treatment and prevention of diseases.

Two-part oral examination;
The diseases and the hygiene of breeding of fish after the Winter semester.
The diseases and the hygiene of breeding of honeybees after the Summer semester.

In both parts of the exam, students must be able contribute their own opinion in addition to theoretical knowledge, as well as be able to solve a real-life practical problem.

The final mark is a combination of the grades received for the fish and honeybee exams; however both of them should be positive. First grade is an evaluation of the knowledge of anatomy, physiology, biology, fish and bees and of the basic knowledge of the aquaculture and apiculture. The second grade is an evaluation of the knowledge of fish and honeybee diseases and health management and the ability to solve a practical problem.

Obligatory readings:

Recommended readings:

HYGIENE AND CONTROL OF MILK, MILK PRODUCTS AND FOOD OF VEGETABLE ORIGIN

**Lecturer**
prof. dr. Andrej Kirbiš

**ECTS**
5

**Semester**
Winter

**Type**
Professional compulsory

**Prerequisites**
Introduction to food hygiene.

**Syllabus outline**
This course introduces students to health suitability and quality of milk products and selected foods of plant origin. Lessons will look at the chemical composition of milk, judgement of hygienic suitability, microbiological contamination, heat treatment, hygiene in milk production, milk transport and sale, veterinary control in dairies and transport, technological process for single types or groups of milk products, their spoilage, quality and judgement of wholesomeness. The same level of examination will be provided of foods of plant origin and their presence in different products. During practical classes, students will conduct microbiological, chemical and sensory examination of milk, milk products and food of plant origin; and during fieldwork, they will survey a dairy factory and examine its technological processes.

**Assessment**
Final mark is composed of two grades: a written exam (100%) and two colloquia (final grade is the mean value of the two results).

**Readings**
7. Pravilnik o monitoringu reziduov. Ur.l. RS, št. 139/2006
8. Pravilnik o splošnem označevanju predpakiranih živil. Ur.l. RS, št. 50/2004
10. Uredba o izvajanju Uredbe Evropskega parlamenta in Sveta ( ES ) o mejnih vrednostih ostankov pesticidov v ali na hrani in krmih rastlinskega in živalskega izvora Ur.l. RS, št. 16/2009
13. Uredba ( ES ) št. 882/2004 Evropskega parlamenta in Sveta z dne
29. aprila 2004 o izvajanju uradnega nadzora, da se zagotovi preverjanje skladnosti z zakonodajo o krmi in živilih ter s pravili o zdravstvenem varstvu živali in zaščiti živali. UL L 191, 28.5.2004, str. 1
**HYGIENE CONTROL OF MEAT, FISH AND PRODUCTS**

<table>
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<tr>
<th>Lecturer</th>
<th>prof. dr. Andrej Kirbiš</th>
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**Prerequisites**
The basic purpose of this course is to familiarise students with elements of health suitability and quality control of meat, fish, eggs, honey and products. During the lectures, students will examine categories, structure, composition, deterioration, hygienic irrevocability and quality assessment, control during production and transport, defects, spoilage and falsification and storage and durability of meat, poultry meat, fish, crabs, clams, turtles, frogs and snails, eggs, honey and their products. In addition, students will conduct microbiological, chemical and sensory examination of said foodstuffs during practical classes. A fieldwork part of this course will also be organised, with a visit to meat-processing plants, where students will observe different technologies of meat processing.

**Syllabus outline**

**Assessment**
Final mark is composed of two grades: a written exam (100%) and two colloquia (final grade is the mean value of the two results).

**Readings**
HYGIENE OF FOOD PRODUCTION PLANTS

Lecturer: prof. dr. Martin Dobeic
ECTS: 3
Semester: Winter
Type: Professional compulsory
Prerequisites: /

Syllabus outline: The goal of this subject is to inform students about modern hygienic demands and standards found in food production plants. Lessons will cover epidemiological and epizootiological aspects of raw material and animal by-products processing, water provision, air pollution prevention, sewage treatment, sanitation and disinfection supervision, worker personal hygiene, food processing plan location, and sanitary-technical conditions for food processing, meat processing, dairy processing operations and other food plants, and the control of hygiene operation and animal by-product processing.

Assessment: Students obtain a single grade by sitting a written exam. They can also take an oral exam if they are between grades or want to improve it.

Readings:

Students can access reading materials at the Institute and in the Veterinary Faculty library.
This course aims at providing students with the theoretical and practical knowledge of the clinical signs, pathogenesis, pathology, diagnostic procedures, treatment and control of the most important and prevailing diseases of pigeons and cage birds, rodents, rabbits and other companion animals. One of the objectives is to teach students about nutrition and husbandry requirements of different animal species. Additional emphasis is put on different ways of protecting veterinarians from mechanical injuries and zoonotic agents. Lectures will look at the specific methods employed during the examination of different animal species and at the systems of both treatment and prevention, as well as the characteristics, breeds, impact of husbandry on health and different diseases of pigeons, cage birds, rodents, rabbits, as well as of free-living and exotic animals.

Students will obtain two grades, one for the oral exam (100%) and another for the practical part (100%) comprised of a colloquium with either a presentation of a case report or a paper.

8. Online sources:
Pubmed
5th Year Electives

ETHOLOGY IN ANIMAL HEALTH CARE

Lecturer prof. dr. Martin Dobeic
ECTS 3
Semester Summer
Type Professional elective
Prerequisites /

Syllabus outline
The goals of this course are to inform students and make them aware of the factors that can change animal behaviour and have an impact on their welfare. As such, this course focuses on describing and presenting only those conditions for animal breeding and keeping that ensure their well-being and good health. Lessons will begin with an introduction to ethology, then move on to examine behavioural genetics, adaptation syndrome, technopathies, injuries resulting from different breeding systems, stable design that takes into account animal needs, the consequences of using unsuitable stables and technology, the owner-companion animal relationship, as well as the use of ethological findings when breeding cattle, pigs and poultry, and in the transport of animals and in companion animals.

Assessment Oral exam (100%).

Readings
3. Lynch JJ. The behaviour of sheep, Biological principles and Implications for Production, CAB International, 1992. (Selected chapters).

Students can access reading materials at the Institute and in the Veterinary Faculty library.
This course aims at providing instruction and hands-on experience in the reproduction of domestic animals. This includes the diagnosis and treatment of infertility and management of reproduction. Topics covered during the lectures will be reinforced with extensive experience in assisted reproductive technologies and will examine the estrum synchronisation programmes; induction of ovulation; collection, the cooling and cryopreservation of gametes; multiple ovulation and embryo transfer; how to determine breeding soundness in male animals; the ultrasonography of normal and pathological changes in genital organs; the sampling, processing and shipping of samples to the laboratory; basic treatment protocols for infertility or STIs; examine the monitoring and maintenance of reproductive efficiency in large herds or flocks; and basic reproductive surgical procedures.

Assessment

Oral exam (100%).

Basic readings:
1. E. S. E Hafez: Reproduction in farm animals, 1992; Lea & Febiger, Philadelphia.

Recommended readings:
REARING CONDITIONS AND HEALTH CARE OF RABBITS

<table>
<thead>
<tr>
<th>Lecturer</th>
<th>prof. dr. Olga Zorman Rojs</th>
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Syllabus outline
This course intends to provide students with the theoretical and practical knowledge of rearing conditions and health problems association with the management, nutrition and the reproduction of rabbits, including common viral, bacterial and parasitic diseases, their treatment, prevention and control. Lessons will examine the principal characteristics of different rabbit breeds, production systems and breeding hygiene, rabbit nutrition and nutritional disorders, specific reproductive diseases and disorders, respiratory diseases, intestinal diseases and disorders and infectious diseases of rabbits, as well as their prevention and control.

Assessment
Students must successfully finish the practical part and give a presentation of a paper (20%), and take an oral exam (80%).

Readings
**REARING CONDITIONS AND HEALTH CARE OF REPTILES AND OTHER EXOTIC ANIMALS**

<table>
<thead>
<tr>
<th>Lecturer</th>
<th>prof. dr. Alenka Dovč</th>
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<td>Prerequisites</td>
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**Syllabus outline**

The aim of this course is to familiarise students with the basic breeding conditions and diseases of exotic animal species, especially reptiles. Special focus is given to highly protected species, whose trade is controlled by CITES. Students will spend a large part of the lectures on basic knowledge of health care of reptiles and exotic species of animals. They will also get basic knowledge on how to handle such animals, what living conditions and diet they have to offer them and how to protect themselves and others from possible bites or transmission of infectious diseases. In addition to the mandatory screening of keeping such animals in captivity, lectures will especially emphasise the basics of clinical diagnostics and treatment, because of the different physiological processes of these species in comparison with more familiar types of domesticated animals. At the end of the course, students will also be familiar with legislation in the field of exotic animal species in Slovenia and Europe.

**Assessment**

The final mark is composed of two grades. The first is obtained by passing the written and oral colloquium (100%), then second by taking the oral exam (100%).

**Readings**


Material for study (literature, sources) is accessible in Veterinary Faculty library and the Institute for the Health Care of Poultry.
# CLINICAL PRACTICE 1

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<tr>
<th>Lecturer</th>
<th>assoc. prof. dr. Modest Vengušt</th>
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## Syllabus outline

The goal of this course is to introduce students to independent clinical work. Practical courses take place in the clinics and institutes of the Veterinary Faculty for big and farm animal under the supervision of tenured professors and their co-workers. Students will have to deal with the admittance of sick large animals to a clinic, determine their medical history (anamnesis), perform a clinical exam of large animals, collect samples (blood, urine, stool, etc.) for laboratory analyses, perform roentgen or ultrasound examination of patients, laboratory analysis of samples, and form a diagnosis and treatment plan. Students also learn how to advise the owners of animals, and how to deal with protocols and data entry.

## Assessment

Students receive a single grade, which is determined by the quality of the medical diary that they keep, their defence of the choice of treatment and the ability to solve problems that arise during their work in the Clinics.

## Readings

**Online links:**
- www.ivis.org
- http://www.vet.cornell.edu/consultant/Consult.asp
- Veterinary literature dealing with such cases and herd health is available in the library of the Veterinary Faculty.
The goal of this course is to introduce students to independent clinical work. Practical courses take place in the Clinic for small animals and in its laboratory, and in the ambulant for exotic animals under the supervision of tenured professors and their co-workers. Students will have to deal with the admittance of sick dogs, cats or exotic animal species to the clinic, determine their medical history (anamnesis), offer first aid, perform a clinical exam of the animals, collect samples (blood, urine, stool, etc.) for laboratory analyses, perform roentgen or ultrasound examination of patients, laboratory analysis of samples, form a diagnosis and treatment plan, and provide urgent, intensive, general and special treatment of patients. Students also learn how to advise the owners of animals, and how to deal with protocols and data entry.

Students receive a single grade, which is determined by the quality of the medical diary that they keep, their defence of the choice of treatment and the ability to solve problems that arise during their work in the Clinics.

The use of literature is determined for each specific clinical case. Veterinary literature dealing with such cases on the basis of individual organ system and their treatment is available in the library of the Veterinary Faculty.

**Online links:**
www.ivis.org
http://www.vet.cornell.edu/consultant/Consult.asp
PROFESSIONAL PRACTICE

Lecturer  
assoc. prof. dr. Modest Venguš

ECTS  
24

Semester  
Winter, Summer

Type  
Professional compulsory

Prerequisites  
NOTICE: Because this is an extra-mural course, students are required to find on their own the clinics where they will work. Students gain practical experience by working inside existing veterinary services and veterinary-sanitary control and are familiarised with the type of work done in different veterinary institutions across Slovenia. A traineeship at the Infrastructure Centre for Sustainable Recultivation Vremščica introduces students to sustainable cultivation and veterinary-sanitary control in the production of milk products. A traineeship in the laboratories of the National Veterinary Institute (NVI) at the Veterinary Faculty allows students to familiarise themselves with the procedures for collecting samples, diagnosis of specific causes of infectious diseases and determine the wholesomeness of foodstuffs of animal origin and animal feed, as well as the procedures used for reporting the results of specific tests. In some of the units at the NVI, students get first-hand experience of the role of veterinarians in the breeding and health care of fish and honeybees. Clinics present at the Veterinary Faculty also allow students to obtain additional knowledge in the health care of animals at a secondary level. Work at a certified veterinary clinic at home or abroad enables students to gain a practical clinical experience and viewpoint of veterinary medicine.

Assessment  
Students must submit a work diary after the end of their traineeship, which must be signed off by the work unit or organisation they worked at. The course is graded pass/fail.

Readings  
Students find the literature they need.
6th Year Electives

**CLINICAL LABORATORY PRACTICAL COURSE**

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<tr>
<th>Lecturer</th>
<th>prof. dr. Martina Klinkon Ogrinec, assist. prof. Jožica Ježek</th>
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<td>ECTS</td>
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<td>Type</td>
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<tr>
<td>Prerequisites</td>
<td>The students need knowledge from other professional subjects (Diseases and health care of ruminants, carnivores, horses, pigs, poultry)</td>
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**Syllabus outline**

The objective of this course is to give students the theoretical and practical knowledge in the field of clinical laboratory diagnostics (Clinical pathology) and to teach them how to use this knowledge in practice when diagnosing diseases and assessing the health status of animals. During lessons, students will learn how to prepare laboratory material and equipment, how to collect, send or preserve samples, about intra- and inter-laboratory control of work, how to prepare and examine blood samples, about the biochemical examination of blood serum, the metabolic profile and milk profile tests, the examination of urine and urine sediment, and about the selection of parameters regarding to clinical signs and the interpretation of results in different species of domestic animals.

**Assessment**

Oral exam (100%).

**Readings**

**ANAESTHESIOLOGY, REANIMATION AND INTENSIVE THERAPY**

<table>
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<tr>
<th><strong>Lecturer</strong></th>
<th>assist. prof. Alenka Seliškar</th>
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**Syllabus outline**

The objective of this course is to qualify students for independent work within the scope of anaesthesia, reanimation and intensive therapy with an emphasis on companion animals. Lectures will start with an introduction to the terminology, then examine the premedication and different types of anaesthetics, breathing circuits and equipment, monitoring, and cardiopulmonary resuscitation, as well as intensive therapy and special anaesthesia for small, large and exotic animals. Practical lectures take the form of individual clinical work.

**Assessment**

The final mark is composed of two grades. Students need to take the oral colloquium (seminar presentation of a case report, familiarity with anaesthetic equipment and drugs, successful solution to real clinical situations and mastery of basic technical skills at practical lectures) (100%) and after successfully passing the colloquium, an oral exam (100%).

**Readings**

### CLINICAL ONCOLOGY IN VETERINARY MEDICINE

<table>
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<tr>
<th><strong>Lecturer</strong></th>
<th>prof. dr. Nataša Tozon</th>
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#### Syllabus outline
The aim of this course is for students to obtain in-depth theoretical and practical knowledge about oncology in veterinary medicine. Lecture contents will be separated into several chapters, such as cancer biology, principles of clinical diagnostic of cancer diseases, principles of treatment in veterinary oncology, selected most frequent cancer diseases in dogs and cats, practical work through clinical diagnostics and examination of patients with selected most frequent cancer diseases, and treatment of cancer diseases with a demonstration of radiotherapy.

#### Assessment
The final mark is composed of two separate grades. The first is gained by sitting a written exam on the theoretical part of the course (100%), the second by presenting a paper (100%). Students must successfully present the paper before being allowed to sit the written exam.

#### Readings
The primary objective of a health and production management programme for herds of food-producing animals is to maintain animal health and productivity at a level that is highly efficient and provides maximal economic returns to the owner. In order to achieve this, students will be introduced to the methods and goals of herd health programmes, the factors that influence the health status and productivity of farm animals, to nutrition management, housing conditions, reproduction and replacement of the herd, to diseases of the mammary gland and claws, to how to keep records and perform data analysis, and to how to choose and implement necessary corrective measures.

Compilation of the final report that includes all observations made during the farm visit, as well as to improve production and health parameters.

Readings

### Syllabus outline
This course aims to teach students about the pathogenesis, clinical features and therapy of skin diseases of dogs and cats. The lessons will examine the pathogenesis of skin diseases in dogs and cats, then move on to specific types of diseases, such as parasitic, bacterial, fungal, immune mediated, hormonal, nutritional, congenital and hereditary skin diseases. Students will then learn about diagnostic and therapeutic methods used in treating skin diseases in dogs and cats, and gain first-hand experience with case studies in the Clinic for small animals.

### Assessment
Written exam on theoretical knowledge (100%), solving a clinical case in the dermatology department for a grade in the practical part of the course (100%).

### Readings
# CARDIOLOGY OF DOGS AND CATS

<table>
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<tr>
<th><strong>Lecturer</strong></th>
<th>prof. dr. Aleksandra Domanjko Petrič</th>
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## Syllabus outline

The goal of this course is to provide students with in-depth knowledge of the diseases and therapy of the cardiovascular system in dogs and cats. Students are also familiarised with the practical use of diagnostic methods and their interpretation. Lessons will cover causes and management of heart failure, cardiac arrhythmias and medicine used to manage them, degenerative valvular diseases and infectious endocarditis, cardiomyopathy, congenital heart diseases, pericardial diseases, systemic diseases that cause heart pathology, dirofilariasis and vascular diseases.

## Assessment

Students must sit a written exam that includes ECG examples, while in the practical part, students must interpret a radiograph and/or an echocardiographic reading and provide solutions to a real-life case by using a problem-oriented approach.

## Readings

### Syllabus outline

The goal of this course is to deepen students' knowledge of nutrition, nutrient composition, the nutritional needs of different categories of animals and their nutritional habits. Lectures will cover nutrient requirements of different categories of animals, look at practical ways of feeding them, the dietetic and clinical nutrition of dogs and cats, explain why metabolic disease arise as a result of feeding error, present health disorders that are a consequence of improper feeding, and look at the content of hazardous substances in animal feed and at the hygienic unsuitability of food.

### Assessment

The final mark is composed of two separate grades, a written paper and oral presentation, and an oral exam.

### Readings

3. Online sources
**Syllabus outline**

This course aims to familiarise students with the physiological characteristics of horses used in sports, with the horse sport industry, with the medical problems that often occur in such a setting, as well as inform students about the use of illegal substance (doping) in sports that use horses. During lectures, students will examine the athletic capabilities of horses, the physiological model of a sport horse, the difference between trained and untrained horses, how such horses are properly fed, the medical problems they encounter for each specific sport, how to provide treatment and what forbidden pharmacological substances (doping) are used in sports involving horses.

**Assessment**

Written exam (100%).

**Books:**

**Articles:**

**Online databases** (PUBMED, IVIS,...)