

## 28431 - Integration: Pets

### Syllabus Information

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**Academic Year:** 2019/20

**Subject:** 28431 - Integration: Pets

**Faculty / School:** 105 - Facultad de Veterinaria

**Degree:** 451 - Degree in Veterinary Science

**ECTS:** 14.0

**Year:** 4

**Semester:** Annual

**Subject Type:** Compulsory

**Module:** ---

## 1.General information

### 1.1.Aims of the course

The general goal of this subject is learning the most important diseases which affect cats and dogs, knowing the right diagnosis protocols and choosing the right preventive and therapeutic program.

To achieve these goals, students should be able to:

- Obtain all the information that it will be required in a sick patient.
- Obtain the maximum number of symptoms, through medical history and exploration techniques, and know how to interpret its meaning.
- Define different clinical patterns that could appear in the medical history and exploration.
- Stabilize a relationship between the possible reasons that could produce the disease and compare them.
- Choose the diagnostic test that could be necessary to reach a diagnosis.
- Select the right treatment for each case.
- Make surgery procedure if they are necessary.
- Make a complete pre-operative examination
- Anesthetize and apply anesthetic monitoring.
- Be familiar with CPR procedure and be able to control the common surgery complication.
- Be able to control the postoperative pain management.
- Identify medical emergencies and treat them.
- Take care and treat hospitalized patient.
- Make preventive programs against infection and parasitic diseases.

### 1.2.Context and importance of this course in the degree

Students will study this subject in the fourth course because they should have a wide knowledge of Anatomy, Physiology, Immunology, General Pathology and Propaedeutic, Surgery, Anesthetic... The foundations of this subject are anatomical pathology, infection and parasitic diseases in dogs and cats, clinical pathology, reproductive diseases and their treatment and the most important surgery procedures. In the final year, students will complete their knowledge in this subject with the practicum.

### 1.3.Recommendations to take this course

It is highly recommended that students have coursed all the previous year's subjects and they should pass Anatomy, Physiology, Microbiology and Immunology, General Pathology and Propaedeutic, Anatomical Pathology, Surgery, Pathology of Reproductive System, Veterinary Parasitology and Diagnostic Imaging. It is necessary to have a solid knowledge in these fields to be successful in Small Animal Clinical and Pathology Diagnosis

On the other hand, it is very important that students participate actively in their compulsory practice.

## 2.Learning goals

### 2.1.Competences

On successful completion of this course, student should be able to:

- Use different kinds of medical procedures and techniques according to each case.
- Explain the results which are obtained with different procedure and using diagnose techniques
- Recognize and diagnose different kinds of injuries and be able to associate them with specific pathologies.
- Diagnose the most common disease in domestic animals.
- Be able to prescribe and dispense drugs in a safety way according to the law.
- Be able to make common surgery procedure.
- Be able to make in a safety way anesthetic procedure as general anesthetic, regional anesthetic and sedation, and control the pain.
- Be able to treat emergency situation and first aid.
- Be able to detect infectious illness.
- Use assisted animal reproduction and control the pregnancy, birth and postpartum period.
- Be able to recognize when it is necessary to do euthanasia and make it in a humanitarian way.

## 2.2.Learning goals

If students manage to complete the course, they should be able to:

1. Make a methodical, systematic and complete medical history of sick animals.
2. Know which clinical symptoms they should pay attention after a physical examination.
3. Analyse the most relevant aspects of the medical record and the physical examination to be able to identify the problem.
4. They should be able to make a list of differential diagnosis for each one of the most common symptoms in dogs and cats.
5. Know the diagnosis and prognosis of the most common diseases in cats and dogs.
6. Know the most common and frequent diseases in cats and dogs.
7. Use and understand the common diagnosis techniques to be able to identify the most common diseases in cats and dogs.
8. Use properly therapeutic protocols for each case and they ought to know the beneficial effects for each drug and their side effects.
9. Know and put into effects the most common surgical and anaesthetic procedures, taking into account the risk of each patient.
10. Take into account the different aspects of the reproductive system in cats and dogs. Also they should identify and treat the health problem that could happen in neonate animals.
11. Know and use preventive programs against the most common diseases in cats and dogs.
12. Identify and evaluate if a patient needs emergency care and they should know how to stabilize the patient.
13. Use different diagnostic procedures (ante-mortem and post-mortem), and they should be able to make medical certificates and send samples for other studies.
14. Draft correctly medical and pathological report and they should be able to explain the medical procedures.
15. Be able to manage the information sources in which the most common veterinary diseases are explained.

## 2.3.Importance of learning goals

The content of this course is essential for the student to acquire the knowledge and skills necessary to develop, in their professional life, clinical activities in the field of pets, since in this All aspects related to the application of diagnostic techniques, identification of syndromes, application of medical and surgical treatments, establishment of preventive measures, elaboration of reports will be addressed... That is to say, it brings together in a systematic way the most important knowledge around the clinic of dogs and cats.

## 3.Assessment (1st and 2nd call)

### 3.1.Assessment tasks (description of tasks, marking system and assessment criteria)

The student must demonstrate that has achieved the intended learning outcomes through the following assessment activities

- Two written tests consisting of short answer questions (50%) and multiple-choice questions (1 true choice and 3 false answers) (50%) on the content of the theoretical program. One test will be taken in January/February, and the other in the final exam in June. Theoretical tests will account for 70% of the subject grade.
- One test to assess the practical activity, solving 15 clinical problems on the sort of cases in which students have participated in clinical consultations, clinical sessions and seminars. In order to take the practical exam, a minimum of 80% of attendance is required. This evaluation will suppose 30% of the qualification of the subject.

- To pass the subject the student must obtain in the written test a minimum of 50% of the examination score and in the practical part must reach a minimum of 50% of the score.
- The score of the evaluation of the practical part will be maintained, if so requested by the student, for future calls.

### Global Test

The overall test will consist of a written part consisting of 120 questions (maximum 70% of the mark) plus the practical test score (30% of the mark).

### Marking system:

According to the national regulation Law 1025/2003, 5th of September which lays down the European system of credits and marking system for the university degree.

0-4,9: FAIL.

5,0-6,9: PASS

7,0-8,9: GOOD (NT).

9,0-10: EXCELLENT (SB).

As the article 158 of the Statutes of the University of Zaragoza lays down, provisional grades will be displayed at least for 7 days and students will be able to review them on the date, time and place provided for that purpose.

## 4.Methodology, learning tasks, syllabus and resources

### 4.1.Methodological overview

The learning process that has been designed for this subject is based on the following:

Theoretical classes, practices, case discussion seminars, papers, presentation of clinical cases

- Theoretical classes: 120 hours of theoretical classes of magisterial type will be given. They will be given in the classroom determined by the Centre, with the students divided into two groups.
- Practical classes: A total of 55 hours of practice will be given in the consulting rooms and operating theatres of the Veterinary Hospital of the UZ, in the laboratories and necropsies room of Pathological Anatomy (Classroom Building), in the teaching laboratories of Infectious Diseases and Parasitology (Hospital building, first floor, third corridor). The practices will be distributed as follows:

20 hours of Internal Medicine clinics (in consultations 1, 2, 5 and 6 of the Hospital)

\* 12 clinical hours of Surgery (in consultations 3, 4, 7 and surgical unit of the Hospital)

\* 8 clinical hours Reproduction (in consultation 8 of the Hospital)

\* 5 hours of Seminars, clinical sessions, Histopathology laboratory (in Pathological Anatomy Unit, classroom building)

\* 5 hours of seminars and discussion of cases and preventive programs of Infectious Diseases (Seminar room and infectious teaching laboratories on the first floor of the Hospital building).

\* 5 hours of interactive seminars on cases and preventive programs of Parasitic Diseases (Seminar room of the teaching unit of Parasitic Diseases first floor of the Hospital building)

### 4.2.Learning tasks

Theoretical classes, practices, case discussion seminars, papers, presentation of clinical cases

### 4.3.Syllabus

#### THEORETICAL PROGRAMME 120 Hours

##### Skin diseases (12h)

##### 1. General approach to diagnosis in skin diseases

1. **Pruritic skin diseases parasitic origen:** Sarcoptic mange, trombicula, Notoedrex mange, Cheyletiella. Clinical aspects, diagnosis and treatment.
2. **Canine and feline demodicosis.** Clinical aspects, diagnosis and treatment.
3. **Dermatophytoses.** Clinical aspects, diagnosis and treatment.
4. **Atopic dermatitis, food hypersensitivity, contact allergy.** Clinical aspects, diagnosis and treatment.
5. **Flea allergy,** Insect bite hypersensitivity and ticks. Clinical aspects, diagnosis and treatment.
6. **Canine alopecia.** Clinical presentations, diagnosis and treatment.
7. **Superficial and deep pyoderma.** Clinical aspects, diagnosis and treatment.
8. **Immunemediated dermatosis.** Penphigus complex, Cutaneous lupus, Clinical aspects, diagnosis and treatment.
9. **External Otitis.** Diagnostic approach ant treatment.
10. Ablation of the bulla, otophematoma and surgery of the skin folds.

## Ophthalmology (5 hours)

1. **Ophthalmology patient approach.** Main disorders in a diseased eye. Basic eye examination. Diagnostic methods.

Changes in eyeball appearance: Exophthalmos, enophthalmos, eyeball prolapse, neoplasias, retrobulbar abscesses.

1. **Changes in the eye discharge:** keratoconjunctivitis sicca, conjunctivitis, uveitis. Epiphora.
2. **Painful eye:** superficial, deep and descemetocoeles corneal injury. Uveitis.
3. **Red eye:** conjunctivitis, uveitis, corneal neovascularization, glaucoma.
4. **Loss of vision, blindness:** Glaucoma, Causes of blindness due to passage problems of light (Keratitis, neoplasia, cataracts, retinal causes of blindness and extraocular causes).

## Gastroenterology (14 hours)

1. **Mouth-esophagus:** clinical aspects, diagnosis and treatment.
2. **Lip and tongue pathology:** Lip folds, lip and tongue surgery. Dental pathology: Periodontal disease, fistulas. Dental fractures Cavities. Retention of baby teeth. Dental extractions vs. Conservative treatment. Inflammatory diseases of the cat oral cavity. Salivary glands: Sialoceles.
3. **Diseases of the esophagus and dysphagia.** Megaesophagus, foreign bodies, perforations, narrowings, obstructions, diverticula, fistulas. Hiatal Hernias Diagnosis, prognosis and treatment.
4. **Esophageal resection and anastomosis techniques.** Resolution of fistulas, diverticula, restrictions and hiatus hernias. Forced feeding. Pharyngostomy tube Postoperative care and complications of esophageal healing.
5. **Stomach diseases.** Vomiting: etiology, diagnosis and treatment. Gastritis, foreign bodies.
6. **Surgical resolution of dilation-** torsion, gastric syndrome. Gastrectomy. Surgical techniques.
7. **Bowel diseases.** Acute and chronic diarrhea: etiology, diagnosis and treatment. Inflammatory
8. **Enterotomies.** Resolution of intestinal obstructions. Aftercare and complications.
9. **Anorectal diseases.** Stool retention, proctitis, perineal hernias, foreign bodies, fistula.
10. **Liver pathology,** liver and gallbladder disorders. Feline hepatic lipidosis. Portosystemic
11. **Liver and gallbladder surgery.** Liver biopsy and hepatectomy, portosystemic communications
12. **Pancreas diseases. Acute and chronic pancreatitis; exocrine pancreatic insufficiency (IPE**
13. **Peritonitis.** Etiology, diagnosis and treatment.
14. **Hernias.** Inguinal, umbilical, abdominal, ventral. Symptoms, diagnosis and surgical treat
15. **Dog and cats differential diagnosis of most common necropsy lesions in: mouth, esophagus, stomach, intestine and peritoneum**
16. **Dog and cats differential diagnosis of most common necropsy lesions in liver and pancreas.**

## Urinary diseases (9 hours)

1.-Introducion to structural pathology of renal pathology.

1. Glomerulonephritis and nephrotic syndrome: symptoms, differential diagnosis of glomerular
2. Chronic kidney disease (CKD): symptoms and diagnosis. Prognostic factors and treatments.
3. Polyuria polydipsia syndrome: approach to diagnosis and treatment protocol.
4. Dog?s urinary tracts infections: Clinical manifestations. Diagnosis and treatment. Differe
5. Feline lower urinary tract disease (FLUTD): Forms, diagnosis, treatment and prevention. Fe
6. Urinary Incontinence: congenital and acquired forms. Differential diagnosis and treatment.
7. Surgery of the urinary system

## Endocrinology and metabolic diseases (5 hours)

1. Disturbances posterior **hypothalamic-pituitary axis.** Canine diabetes insipidus. Diagnosis a
2. **Adrenal cortex?s disorders.** Canine Hypoadrenocorticism and Hyperadrenocorticism. Diagnosi
3. **Disturbances of the thyroid and parathyroid glands.** Canine and feline hyperthyroidism hypo
4. **Pancreas endocrine disorders.** Canine and feline diabetes mellitus. Diabetic ketoacidosis.

5. **Obesity.**Primary and secondary obesity.Evaluation of body condition, treatment and preve

## Clinical Reproduction and obstetrics (12 h)

1. **Dog and cat reproduction.** Selection and management of future males and breeding females fo

## 2. Male and female sterilization. Sterilization methods in non-breeding, canine and feline s

1. **Assisted reproduction.** Seminal collection, evaluation and processing for artificial insemination
2. **Male and female infertility.** Diagnosis, decision making, treatment options.
3. **Gestation.** Pregnancy diagnosis in dog and cat. Recommendations during pregnancy. Noninfect

## 7. Birth.Preparation and delivery care. Dystocia resolution. Programming a cesarean section.

1. **Dog and cat reproductive pathology.** Dog Pseudopregnancy, feline mammary hypertrophy, ovar
2. **Female genital tract surgery.** Ovarian, uterine and mammary tumors. Vaginal polyps. Episiot
3. **Male reproductive pathology.** Scrotum pathology, cryptorchidism, orchitis, epididymitis,

## Cardiology and Respiratory diseases (10 hours)

1. Disorders of the upper respiratory tract. Runny nose, sneezing and rales. Laryngitis, rhinitis, tracheal collapse: diagnosis, treatment. Brachycephalic dog syndrome.
2. Surgical management of obstructive lesions in nostrils, sinuses and upper respiratory tract. Surgical treatment of

brachiocephalic syndrome.

1. Bronchopulmonary diseases. Acute and chronic bronchitis. Acute and chronic pneumonias. Pleural effusions. Etiology, diagnosis, treatment and prevention. Parasitic bronchopneumonia
2. Pathology of pleural cavity: pneumothorax, chylothorax, diaphragmatic hernias. Pathology of the mediastinum. Diagnosis and treatment.
3. Pathological anatomy of the respiratory system

6 Heart rhythm disorders and cardiac impulse conduction: types, diagnosis, treatment. Prevention.

1. Congestive heart failure. Causes, diagnosis and treatment. Prevention. Cardiomyopathies.
2. Valvular heart disease: valvular endocardiosis, bacterial endocarditis. Pericardial disease. Types, causes, diagnosis and treatment.
3. Congenital cardiovascular diseases. Diagnosis and surgical treatment of the most common congenital malformations. 10- Pathological anatomy of the circulatory system.

## Neurology (5 hours)

1. Diagnostic Approach to the neurological patient.
2. Convulsive syndrome. Symptoms, diagnosis and treatment.
3. Vestibular syndrome. Symptoms, diagnosis and treatment.
4. Meningoencephalitis and other disorders that affect the brain. Symptoms, diagnosis and treatment.
5. Ataxia and problems affecting the spinal cord. Symptoms, diagnosis and treatment.
6. Pathology of the peripheral nervous system and diseases of the neuromuscular junction and muscle. Symptoms, diagnosis and treatment.
7. Differential diagnosis of the more frequent injuries at necropsy of the central and peripheral nervous system. Pathogenetic mechanisms. Pathological anatomy of congenital malformations, degenerations, circulatory disorders and inflammation. Most common injuries in neuroendocrine ductless glands.

## Behavioral (3 hours)

- 1.- Behavior problems in dogs and cats. Approach, diagnosis and treatment of canine and feline aggression.
  1. Separation Anxiety fears and phobias in dogs and cats. Symptoms, diagnosis and treatment.
  2. Inappropriate urination problems in dogs and cats. Approach, diagnosis and treatment.

## Traumatology (7 hours)

1. Traumatology examination. Traumatic lameness vs. non-traumatic lameness.

2. Head fractures. Maxillary fracture. Palate fracture. Broken jaw. Paratrooper cat syndrome.
3. Traumatic lameness. Muscle, tendon and ligament injuries. Hip dislocation. Elbow dislocation. Fractures: treatment, decision making of fractures, fractures in young animals.
4. Non-traumatic lameness. Non-traumatic forelimb lameness: osteochondritis dissecans shoulder, elbow dysplasia, medial scapular humeral dislocation, bicipital tenosynovitis. Calcification supraspinatus tendon. Non-traumatic hindlimb lameness:

knee and hock OCD, hip dysplasia, Legg-Calvé-Perthes disease. Patellar luxation. Torn anterior cruciate knee ligament. Other non-traumatic lameness: panosteitis, osteoarthritis, bone tumors.

1. Spine. Herniated discs. Discospondylitis. Vertebral fractures and dislocations.
2. Differential diagnosis of the most common injuries in bone and muscle. Developing bone disease. Fibrous osteodystrophy. Hypertrophic osteopathy. Osteochondrosis. Chronic degenerative joint disease. Immune-mediated joint diseases. Biopsies and muscle diseases.

## Hematology and Oncology (9 hours)

1.- General diagnostic procedures, therapeutic modalities and care of the cancer patient.

1. Soft tissue sarcomas of dog and cat. Neoplasms of fibrous origin; fibrohistiocytic; peripheral nerves; adipose tissue; muscle; vascular and lymphatic: Incidence and risk factors and disease, clinicopathological most relevant aspects, diagnosis, staging and treatment guidelines.
2. Skin Neoplasms. Neoplasms round cells: mastocytoma, histiocytoma, lymphosarcoma. Squamous cell carcinomas. Papillomas. Neoplasms of the hair follicle. Melanomas. Clinico-pathological most relevant aspects. Diagnosis, staging and treatment guidelines.
3. Neoplasms genital tract and breast. Ovarian, uterus and vagina neoplasms; testicles; breast. Clinico-pathological most relevant aspects. Diagnosis, staging and treatment guidelines.
4. Lymphoid Neoplasms. Lymphomas. Lymphoid leukemias. Plasma cell neoplasms. Clinico-pathological most relevant aspects. Diagnosis, staging and treatment guidelines.
5. Other neoplasms of importance in the dog and cat: Osteosarcomas, Gastrointestinal, Respiratory, endocrine, central nervous system and others. Clinico-pathological most relevant aspects. Diagnosis, staging and treatment guidelines.
6. Clinical evaluation of anemia (diagnosis and treatment). Clinical evaluation of erythrocytosis (diagnosis and treatment) . Hemostasis disorders: Clinical evaluation of thrombocytopenia. von Willebrand disease (could be removed). Hereditary and acquired coagulopathies. Clinical evaluation and treatment of disseminated intravascular coagulation (DIC). Systemic immune-mediated diseases.
7. Blood type and selection of a donor patient. Transfusions. Methodology transfusion. Indications for the use of blood products. Spleen disease.

## Infectious diseases (11 hours)

1. Feline Leukemia. Etiology, epidemiology. Pathogenesis and clinical summary. Diagnostic tests and interpretation. Prevention and control plans.
2. Feline immunodeficiency. Etiology, epidemiology. Pathogenesis and clinical summary. Diagnostic tests and interpretation. Prevention and control plans.
3. Feline infectious peritonitis. Etiology, epidemiology. Pathogenesis and clinical summary. Diagnostic tests and interpretation. Treatment, prevention and control plans
4. Canine distemper. Etiology Epidemiology. Pathogenesis and clinical summary. Diagnostic tests and interpretation. Prevention and control plans.
5. Rabies and pseudorabies. Etiology and epidemiology. Pathogenesis and clinical summary. Diagnostic tests and interpretation. Prevention and control plans.
6. Leptospirosis, brucellosis and other bacterial diseases of the dog and cat. Etiology and epidemiology. Pathogenesis and clinical summary. Diagnostic tests and interpretation. Prevention and control plans.
7. Intestinal dog-Virus (parvovirus, coronavirus, rotavirus) and cat (feline panleukopenia, coronavirus, rotavirus). Etiology, epidemiology and transmission. Pathogenesis and clinical summary. Plans diagnosis treatment, prevention and control.
8. Canine Infectious Hepatitis. Etiology and epidemiology. Pathogenesis and clinical summary. Diagnostic tests and interpretation. Prevention and control plans.
9. Canine infectious respiratory complex (parainfluenza, Bordetella, mycoplasma ..). Infectious canine tracheobronchitis. Etiology, epidemiology. Pathogenesis and clinical summary. Diagnosis. Plans treatment, prevention and control.

10. Feline infectious respiratory complex. Etiology, epidemiology (Includes: Feline calicivirus, feline herpesvirus, Chlamydomphila felis). Pathogenesis and clinical summary. Diagnostic tests and interpretation. Plans treatment, prevention and control.
11. Systemic mycosis of dog and cat. Etiology and epidemiology. Pathogenesis and clinical summary. Diagnostic tests and interpretation. Prevention and control plans.

## **Parasitic diseases (9 hours)**

1. Vector-borne parasitic diseases. Babesiosis and Theileriosis.
2. Parasitic diseases transmitted by vectors. canine visceral leishmaniasis. 3- Vector-borne parasitic diseases. canine and feline dirofilariasis.
3. Protozooses: Giardiasis and Coccidiosis.
4. Hemintosis roundworm: Ascariosis, Ancilostomosis, strongiloidosis.
5. Parasitic bronchopneumonia: Angiostrongylos and others.

## **Intensive take care and emergencies (8 hours)**

1. General Approach canine and feline emergency. The A-B-C in emergencies. Initial assessment of the patient.
2. Approach to respiratory distress patient. Diagnosis, evaluation, stabilization.
3. Approach to patients with acute abdomen. Differential diagnosis and treatment.
4. The intoxicated patient. Main poisoning in dogs and cats. Rodenticides. Insecticides. Ethyleneglycol. Others.
5. The traumatized patient. Outrages. paratroopers cats. Bites. Hunting accidents. Other trauma.
6. The hospitalized patient. Maintenance of the internal environment: diagnosis and treatment of acid-base, electrolyte water imbalances. Inpatient nutrition (enteral and parenteral). Assessment and treatment of pain in hospitalized patients. Surveillance and hospital care.
7. Guidelines anesthetic in dogs and cats. Analgesia in the dog and cat. Specifications in different patients (cardiac patients, epileptics, geriatrics, pediatrics, ..)
8. Euthanasia. Recognition of the need for euthanasia. Appropriate methods for performing euthanasia. Disposal methods of cadavers.

### **4.4.Course planning and calendar**

Keys dates of this subject will be described in detail in the webpage (<https://veterinaria.unizar.es/>).

### **4.5.Bibliography and recommended resources**

<http://psfunizar7.unizar.es/br13/egAsignaturas.php?codigo=28431>