

## 28431 - Integration: Pets

### Información del Plan Docente

<b>Academic Year</b>	2017/18
<b>Faculty / School</b>	105 - Facultad de Veterinaria
<b>Degree</b>	451 - Degree in Veterinary Science
<b>ECTS</b>	14.0
<b>Year</b>	4
<b>Semester</b>	Annual
<b>Subject Type</b>	Compulsory
<b>Module</b>	---

### **1.General information**

#### **1.1.Introduction**

This subject brings together the most important knowledge which is related to common diseases in cats and dogs. It is structured in organic systems. In each part, students will learn the most common clinical symptoms of current diseases, the diagnostic tests which are necessary to reach a diagnosis, the prognosis of each disease, the medical and/or surgical treatment for them and the use of preventive programs if they are useful. Also, it will describe histopathology aspects for each disease and it draws our attention to zoonotic disease and vector-borne disease.

#### **1.2.Recommendations to take this course**

It is highly recommended that students have coursed all the subjects of the previous years of Veterinary Medicine 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.

#### **1.3.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.

#### **1.4.Activities and key dates**

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

### **2.Learning goals**

#### **2.1.Learning goals**

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To success in this subject, students should achieve the following goals:

1. They should be able to make a methodical, systematic and complete medical history of sick animals.
2. They ought to know which clinical symptoms they should pay attention after a physical examination.
3. They should analyze 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. They ought to know the diagnosis and prognosis of the most common diseases in cats and dogs.
6. They should know the most common and frequent diseases in cats and dogs.
7. They should use and understand the common diagnosis techniques to be able to identify the most common diseases in cats and dogs.
8. They should use correctly therapeutic protocols for each case and they ought to know the beneficial effects for each drug and their side effects.
9. They should know and put into effects the most common surgical and anaesthetic procedures, taking into account the risk of each patient.
10. They should 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. They should know and use preventive programs against the most common diseases in cats and dogs.
12. They should identify and evaluate if a patient needs emergency care and they should know how to stabilize the patient.
13. They should 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. They should draft correctly medical and pathological report and they should be able to explain the medical procedures.
15. They should be able to manage the information sources in which the most common veterinary diseases are explained.

### 2.2.Importance of learning goals

### 3. Aims of the course and competences

#### 3.1. Aims of the course

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

To achieve these goals, students should be able to:

- Obtain all the information that it will be required of the sick patient.
- Obtain the maximum number of symptoms, using only the medical history or other techniques, and explain the meaning of them.
- Define different pathologist 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.

#### 3.2. Competences

- 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

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- 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.

### **4. Assessment (1st and 2nd call)**

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

### **5. Methodology, learning tasks, syllabus and resources**

#### **5.1. Methodological overview**

#### **5.2. Learning tasks**

#### **5.3. Syllabus**

#### **PROGRAMM**

#### **Skin diseases (11h)**

1. *General approach to diagnosis in skin diseases*

2. *Pruritic skin diseases parasitic origen: Sarcoptic mange, trombicula, Notoedrex mange, Cheyletiella. Clinical aspects, diagnosis and treatment*

3. *Canine and feline demodicosis. Clinical aspects, diagnosis and treatment.*

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4. *Dermatophytoses. Clinical aspects, diagnosis and treatment.*
5. *Atopic dermatitis, food hypersensibility, contact allergy. Clinical aspects, diagnosis and treatment.*
6. *Flea allergy, Insect bite hypersensibility and ticks. Clinical aspects, diagnosis and treatment.*
7. *Canine alopecia. Clinical presentations, diagnosis and treatment.*
8. *Superficial and deep pyoderma. Clinical aspects, diagnosis and treatment.*
9. *Immunemediated dermatosis. Penphigus complex, Cutaneous lupus, Clinical aspects, diagnosis and treatment.*
10. *Otitis externa. Diagnostic approach ant treatment*
11. *Ablation of the bulla, otohematoma 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.*
2. *Changes in the eye discharge: keratoconjunctivitis sicca, conjunctivitis, uveitis . Epiphora .*
3. *Painful eye: superficial, deep and descemetocoles corneal injury. Uveitis.*

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4. Red eye: *conjunctivitis, uveitis, corneal neovascularization, glaucoma.*

5. 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 and Odontostomatology. (16 hours)

1. Mouth: *clinical aspects, diagnosis and treatment.* 2. Labial and lingual Pathology: *labial folds, lips and tongue surgery. Dental disease: periodontal disease, fistulas. Dental fractures. Decay. Retention primary tooth. Extractions vs. Conservative treatment. Cat's inflammatory diseases of the oral cavity. Salivary Glands: Sialoceles.* 3. Tooth extraction techniques and malocclusions resolution. *Postoperative complications and prevention measures.* 4. Esophagus diseases and dysphagia. *Megaesophagus, foreign bodies, perforations, strictures, obstructions, diverticula, fistulas. Hiatus hernia. Diagnosis, prognosis and treatment.* 5. Esophageal resection and anastomosis techniques. *Resolution of fistulas, diverticula, restrictions and hiatus hernia. Gavage. Pharyngostomy tube. Aftercare and complications of esophageal healing.* 6. Stomach diseases. *Vomiting: etiology, diagnosis and treatment. Gastritis, foreign bodies, Ulcers: Diagnosis and treatment. Dilation- torsion gastric syndrome.* 7. Surgical resolution of dilation- torsion, gastric syndrome. *Gastrectomy. Surgical techniques, postoperative complications and prevention measures.* 8. Bowel diseases. *Acute and chronic diarrhea: etiology, diagnosis and treatment. Inflammatory bowel disease (IBD). Intestinal obstruction. Constipation, intussusception, volvulus: Clinic, diagnosis and treatment.* 9. Enterotomies. *Resolution of intestinal obstructions. Aftercare and complications.* 10. Anorectal diseases. *Stool retention, proctitis, perineal hernias, foreign bodies, fistulas, anal sacs Clinical presentation, diagnosis and treatment. Surgical treatment of prolapses, perianal fistulas, strictures and hernias. Aftercare and complications.* 11. Liver pathology, liver and gallbladder disorders. *Feline hepatic lipidosis. Portosystemic shunts. Clinic, diagnosis and treatment.* 12. Liver and gallbladder surgery. *Liver biopsy and hepatectomy, portosystemic communications. Colostomy and cystotomy. Aftercare and complications.* 13. Pancreas diseases. *Acute and chronic pancreatitis; exocrine pancreatic insufficiency (IPE): Etiology, symptoms, diagnosis and medical and surgical treatment.* 14.- Peritonitis. *Etiology, diagnosis and treatment.* 15. Hernias. *Inguinal, umbilical, abdominal, ventral. Symptoms, diagnosis and surgical treatment.* 16. Dog and cat's differential diagnosis of most common necropsy lesions in: mouth, esophagus, stomach, intestine and peritoneum. *Pathogenetic mechanisms (Interpretation of gastrointestinal biopsies). . Congenital malformations, degenerations, circulatory disorders and inflammation.* 17. Dog and cat's differential diagnosis of most common necropsy lesions in liver and pancreas. *pathogenetic mechanisms. Congenital malformations, degenerations, circulatory disorders and inflammation.*

### Urinary diseases (9 hours)

1.-*Introducion to structural pathology of renal pathology.* 2. *Glomerulonephritis and nephrotic syndrome: symptoms , differential diagnosis of glomerular diseases, treatment and monitoring. Acute renal failure: symptoms, risk factors and differential diagnosis of their types. Renal failure treatment. Risk patient's control* 3. *Chronic kidney disease (CKD): symptoms and diagnosis. Prognostic factors and treatments.* 4. *Polyuria polydipsia syndrome: approach to diagnosis and treatment protocol.* 5. *Dog's urinary tracts infections: Clinical manifestations. Diagnosis and treatment. Differential diagnosis of hematuria.* 6. *Feline lower urinary tract disease (FLUTD): Forms, diagnosis, treatment and prevention. Feline Interstitial Cystitis: triggers, diagnosis, treatment and prevention.* 7. *Urinary Incontinence: congenital and acquired forms. Differential diagnosis and treatment.* 8. *Surgery of the urinary system*

### Endocrinology and metabolic diseases (5 hours)

1. *Disturbances posterior hypothalamic-pituitary axis. Canine diabetes insipidus. Diagnosis and treatment.* 2. *Adrenal cortex's disorders. Canine Hypoadrenocorticism and Hyperadrenocorticism. Diagnosis and treatment. Feline hyperaldosteronism. Diagnosis, monitoring and treatment. Addisonian crisis.* 3. *Disturbances of the thyroid and parathyroid glands. Canine and feline hyperthyroidism hypothyroidism. Diagnosis, monitoring and treatment. Differential diagnosis of hypercalcemia and hypocalcemia.* 4. *Pancreas endocrine disorders. Canine and feline diabetes mellitus. Diabetic ketoacidosis. Canine insulinoma. Diagnosis and treatment.* 5. *Obesity. Primary and secondary obesity. Evaluation of body*

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condition, treatment and prevention. **Clinical Reproduction and obstetrics (12.h)** 1. Dog and cat reproduction. *Selection and management of future males and breeding females for the canine and feline species. Dog and the cat special features of the sexual cycle. Determination of fertile period through vaginal cytology, vaginoscopy, ultrasound and interpretation of reproductive hormones levels. Natural mating control in small animals.* 2. Male and female sterilization. *Sterilization methods in non-breeding, canine and feline species. Advantages and disadvantages of temporary methods vs. definitive methods. Inhibition of heat. Surgical sterilization.* 3. Assisted reproduction. *Seminal collection, evaluation and processing for artificial insemination. Refrigeration and freezing seminal. Semen doses transport systems and regulations. Artificial insemination techniques in dog and cat.* 5. Male and female infertility. *Diagnosis, decision making, treatment options.* 6. Gestation. *Pregnancy diagnosis in dog and cat. Recommendations during pregnancy. Noninfectious abortions. Indications and Methods for interrupting pregnancy.* 7. Birth. *Preparation and delivery care. Dystocia resolution. Programming a cesarean section. Cesarean section. Puerperal review of dog and cat. Puerperal tetany. Weaning and milk secretion control. Mastitis. Postpartum endometritis and other complications. Immediate care and newborn care. Congenital disorders diagnosis.* 8. Dog and cat reproductive pathology. *Dog Pseudopregnancy, feline mammary hypertrophy, ovarian cysts, Pyometra, vaginal hyperplasia, vaginitis and female genital tract tumors. Anestro diagnosis and induction of estrus during it.* 9. Female genital tract surgery. *Ovarian, uterine and mammary tumors. Vaginal polyps. Episiotomy. Ovarian remnant syndrome. OHT by pyometra. Stump pyometra.* 10. Male reproductive pathology. *Scrotum pathology, cryptorchidism, orchitis, epididymitis, testicular degeneration, balanopostitis, canine transmissible venereal tumor, phimosis, paraphimosis. Prostate pathology: benign prostatic hypertrophy (BPH), prostatitis, abscesses, prostate and paraprostatic cysts, prostatic squamous metaplasia and male genital tract tumors. Medical and surgical treatments.*

### Cardiology and Respiratory diseases (12 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.*

3. *Bronchopulmonary diseases. Acute and chronic bronchitis. Acute and chronic pneumonias. Pleural effusions. Etiology, diagnosis, treatment and prevention. Parasitic bronchopneumonia*

4. *Pathology of pleural cavity: pneumothorax, chylothorax, diaphragmatic hernias. Pathology of the mediastinum. Diagnosis and treatment.*

5. *Pathological anatomy of the respiratory system*

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

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7. *Congestive heart failure. Causes, diagnosis and treatment. Prevention. Cardiomyopathies.*

8. *Valvular heart disease: valvular endocardiosis, bacterial endocarditis. Pericardial disease. Types, causes, diagnosis and treatment.*

9. *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.*



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### Behavioral (3 hours)

- 1.- *Behavior problems in dogs and cats. Approach, diagnosis and treatment of canine and feline aggression.*
2. *Separation Anxiety fears and phobias in dogs and cats. Symptoms, diagnosis and treatment.*
3. *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.*
5. *Spine. Herniated discs. Discospondylitis. Vertebral fractures and dislocations.*
6. *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.*

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2. *Soft tissue sarcomas of dog and cat. Neoplasms of fibrous origin; fibrohistiocytic; peripheral nerves; adipose tissue; mus= $\leq$  vascular and lymphatic: Incidence and risk factors and disease, clinicopathological most relevant aspects, diagnosis, staging and treatment guidelines.*

3. *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.*

4. *Neoplasms genital tract and breast. Ovarian, uterus and vagina neoplasms; testicles; breast. Clinico-pathological most relevant aspects. Diagnosis, staging and treatment guidelines.*

5. *Lymphoid Neoplasms. Lymphomas. Lymphoid leukemias. Plasma cell neoplasms. Clinico-pathological most relevant aspects. Diagnosis, staging and treatment guidelines.*

6. *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.*

7. *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.*

8. *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.*

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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.*

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2. *Parasitic diseases transmitted by vectors. canine visceral leishmaniasis.*

3- *Vector-borne parasitic diseases. canine and feline dirofilariasis.*

4. *Protozooses: Giardiasis and Coccidiosis.*

5. *Hemintosis roundworm: Ascariosis, Ancilostomosis, strongiloidosis.*

6. *Parasitic bronchopneumonia: Angiostrongylos and others.*

### **Intensive take care and emergencies (6 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.*

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*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.*

### **5.4.Course planning and calendar**

### **5.5.Bibliography and recommended resources**