

VETERINARY GENERAL PATHOLOGY AND PATHOPHYSIOLOGY OF DOMESTIC ANIMALS (5 CREDITS) 60 hours: 50 theoretical and 10 (x4) practical work)

Course Objectives: At the end of the course the student acquires knowledge about changes in the homeostasis of the organism and pathogenic mechanisms leading to the onset of alterations. The theoretical learning is supported on a practical basis by the observation of histopathological lesions.

LECTURES

| Topics and acquired skills  | Topics   | Specific content  | Hrs  |
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| <b>1. CELLULAR ADAPTATION, CELL INJURY AND CELL DEATH (Tot. 14 HRS)</b> | <b>Atrophy</b>   | Atrophy types (numeric, degenerative etc..)   | 1  |
|   |  | Cellular swelling   | 1/2  |
|   |  | Protein accumulation  | 1  |
|   |  | Lipid accumulation  | 2  |
|   |  | Mucopolysaccharidosis   | 1  |
|   |  | <b>Necrosis and apoptosis</b>   | Causes and Classification of necrotic lesions  |
|   | Apoptosis. Causes and morphology. Intrinsic and extrinsic apoptosis. Role of apoptosis in disease. |   | 2  |
|   | <b>Hypertrophy and hyperplasia</b>   | Causes of the increase in volume and number of cells in a tissue  | 1/2  |
|   | <b>Calcification and pigments</b>  | Idiopathic ectopic calcification, dystrophic and metastatic calcifications. Esogenous and endogenous pigments: Lipofuscin, ceroid, melanin and hemosiderin. Anthracosis. Jaundice | 3  |
|   |  | <b>Hyperemia</b>  | Acute local active hyperemia. Acute local passive hyperemia. Chronic local passive hyperemia. Chronic generalized passive hyperemia. Aspect of hyperemia |

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| <b>2.</b><br><b>DISTURBANCES OF BLOOD FLOW AND CIRCULATION (12 HRS)</b> | <b>Hemorrhage</b>                                   | Causes, pathogenesis, classification and resolution of hemorrhages                                  | 2     |
|   | <b>Edema</b>  | Pathophysiology and classification of edema.  | 1     |
|   | <b>Ischemia and infarction</b>                      | Etiopathogenesis of ischemic lesions  | 1     |
|   | <b>Thrombosis</b>                                   | Etiopathogenesis of thrombosis. Types and localization of thrombi and their evolution.              | 2     |
|   | <b>Embolism</b>                                     | Etiopathogenesis of embolism. Types of emboli.  | 1     |
|   | <b>Lymphatic disturbances</b>                       | Lymphedema and lymphangectasis  | 1/2   |
|   | <b>Shock</b>  | Shock etiopathogenesis. Types and Stages of shock.  | 2     |
|   | <b>Anemie</b>                                       | Hemolytic anemias, blood loss and impaired red cell production                                      | 2     |
| <b>3. CONNECTIVE TISSUE ALTERATIONS (TOT. 3 HRS)</b>                    | <b>Metabolic conditions</b>                         | Aging, dermatosparaxis, cutaneous asthenia.   | 1/2   |
|   | <b>Extracellular hyaline and Fibrinoid necrosis</b> | Etiopathogenesis of extracellular hyaline and fibrinoid necrosis. Differential criteria             | 1+1/2 |
|   | <b>Amyloidosis</b>                                  | Etiopathogenesis of amyloidosis   | 1     |
| <b>4. INFLAMMATION (TOT. 7 HRS)</b>                                     | <b>Inflammation in general</b>                      | Nomenclature of inflammatory reactions. Severity, duration and distribution of inflammatory lesions | 1     |
|   | <b>Acute inflammation</b>                           | Pathogenesis of acute inflammation. Types of inflammatory exudates                                  | 2     |
|   | <b>Chronic inflammation</b>                         | Chronic inflammation  | 1     |
|   |   | Granulomas  | 2     |

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| <b>5. HEALING AND REPAIR<br/>(TOT. 1 HR)</b>                         | <b><i>Tissue regeneration and repair.<br/>Fibrosis</i></b>             | Labile, stable and permanent cells. Healing by parenchymal regeneration and by connective tissue replacement. Hepatic, pulmonary and renal fibrosis. | 1 |
| <b>6. RENAL PATHOPHYSIOLOGY<br/>(TOT.5 HRS)</b>                      | <b><i>Acute kidney failure</i></b>                                     | Etiopathogenesis of conditions affecting tubules and interstitium, and glomerular diseases. Urinary tract obstruction                                | 3 |
|  | <b><i>Chronic renal failure and renal syndromes</i></b>                | Etiopathogenesis of chronic renal diseases and renal syndromes   | 2 |
| <b>7.DIGESTIVE SYSTEM PATHOPHYSIOLOGY<br/>(TOT. 4 HRS)</b>           | <b><i>Maldigestion/malabsorption syndrome</i></b>                      | <i>Etiopathogenesis of maldigestion/malabsorption syndrome</i>   | 1 |
|  | <b><i>Etiopathogenesis of diarrhea</i></b>                             | <i>Osmotic, secretory and inflammatory diarrhea. Enterocolic syndrome</i>  | 1 |
|  | <b><i>Hepatic failure</i></b>  | Etiopathogenesis of hepatic alterations, hepatic encephalopathy, hepato-renal and hepato-cutaneous syndrome.   | 2 |
| <b>8. PATHOPHYSIOLOGY OF THE RESPIRATORY SYSTEM<br/>(TOT. 3 HRS)</b> | <b><i>Pulmonary failure: defects of the respiratory membrane</i></b>   | Etiopathogenesis of respiratory membrane defects (alveolar, interstitial and vascular alterations)   | 1 |
|  | <b><i>Pulmonary failure: ventilation deficit</i></b>                   | Etiopathogenesis of pulmonary and extra-pulmonary conditions   | 1 |
|  | <b><i>Pulmonary failure: oxygen defects due to blood transport</i></b> | Etiopathogenesis of cardiocirculatory disorders. Hemoglobin defects.   | 1 |
| <b>9. PATHOPHYSIOLOGY OF THE HEART<br/>(TOT. 2 HRS)</b>              | <b><i>Etiopathogenesis of the cardiac failure</i></b>                  | Systolic and diastolic dysfunction   | 2 |

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| <b>10. PATHOPHYSIOLOGY OF THERMOREGULATION (TOT. 2 HRS)</b> | <b>Active and passive hyperthermia</b>                          | Active and passive hyperthermia.   | 3          |
| <b>11. ACID-BASE BALANCE</b>                                | <b>Outlines</b>   | Examples of acid and base disturbances   | 1          |
| <b>Practical work</b>                                       |   |  |            |
| <b>Topics and acquired skills</b>                           | <b>Topics</b>   | <b>Specific contents</b>   | <b>Hrs</b> |
| <b>ABILITY TO OBSERVE, DEDUCT AND ASSESS (TOT. 10 HRS)</b>  | <b>THE TOPICS ARE THE SAME AS THOSE OF THE THEORETICAL PART</b> | Vision of histological slides for all of the pathological processes related to the topics covered during the course. Kahoot for self-evaluation. |            |