



UNIVERSIDADE FEDERAL RURAL DE PERNAMBUCO
PRÓ-REITORIA DE PESQUISA E PÓS-GRADUAÇÃO
PROGRAMA DE PÓS-GRADUAÇÃO EM BIOCÊNCIA ANIMAL

COURSE OUTLINE

IDENTIFICATION

COURSE: THE PATHOLOGIC BASIS OF DISEASES IN ANIMAL SCIENCE

CODE: PGBA

LEVEL: MASTER/DOCTORATE

MANDATORY: NO

LECTURER: Prof. Dr. Fábio de Souza Mendonça

DEPARTMENT:

AREA:

NUMBER OF CREDITS: 4

WORKLOAD: THEORY: 45

PRACTICAL: 15

TOTAL: 60h

OBJECTIVES

- To focus on the principles and patterns of animal pathology using examples of specific diseases for illustrative purposes.
- To understand and learn the pathological changes that occur in tissues and organ systems and how such changes provide the basis for clinically manifested diseases.
- To understand and learn the occurrence, development, and progression of pathological changes in body systems and individual organs, and to relate their morphology at gross (macroscopic) and microscopic levels to clinically recognizable functional defects and disease states.

SUMMARY

The Cell as a Unit of Health and Disease, Cell Injury, Cell Death, and Adaptations, Inflammation and Repair, Hemodynamic Disorders, Thromboembolic Disease, and Shock, Genetic Disorders, Diseases of the Immune System, Neoplasia and Tumor Biology, Mechanisms of Microbial Infections, Environmental and Nutritional Diseases.

ASSESSMENT

1. Written Exam 85 %, Coursework 15 %, Practical Exam 0 %

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COURSE DESCRIPTION

1. The Genome, Cellular Housekeeping, Cellular Metabolism and Mitochondrial Function, Cellular Activation, Growth Factors and Receptors, Extracellular Matrix, Maintaining Cell Populations; 2. Overview of Cellular Responses to Stress and Noxious Stimuli, Reversible Cell Injury, Cell Death, Mechanisms of Cell Injury, Adaptations of Cellular Growth and Differentiation, Intracellular Accumulations, Pathologic Calcification, Cellular Aging. 3. Acute Inflammation, Chronic Inflammation, Systemic Effects of Inflammation, Tissue Repair. 4. Edema and Effusions, Hyperemia and Congestion, Hemostasis, Hemorrhagic Disorders, and Thrombosis, Embolism, Infarction, Shock. Genetic. 5. Mendelian Disorders, Complex Multigenic Disorders, Chromosomal Disorders, Single-Gene Disorders with Nonclassical Inheritance, Molecular Genetic Diagnosis. 6. The Normal Immune Response, Hypersensitivity: Immunologically Mediated Tissue Injury, Autoimmune Diseases, Rejection of Tissue Transplants, Immunodeficiency Diseases, Amyloidosis. 7. Characteristics of Benign and Malignant Neoplasms, Epidemiology of Cancer, Molecular Basis of Cancer: Role of Genetic and Epigenetic Alterations, Carcinogenic Agents and Their Cellular Interactions, Clinical Aspects of Neoplasia. 8. General Principles of Microbial Pathogenesis, Viral Infections, Bacterial Infections, Fungal Infections, Parasitic Infections, Sexually Transmitted Infections, Emerging Infectious Diseases. 9. Toxicity of Chemical and Physical Agents, Nutritional Diseases.

WORK METHODOLOGY AND LEARNING OUTCOMES

The methodological foundation of the course will be based on the use of andragogy to optimize adult learning. The basic principles of andragogy to be followed for efficient learning will be based on 4 aspects: 1. Adults need to know why they are learning a certain topic; 2. Adults need to learn through experiences; 3. Adults learn through practical problem solving; 4. Adults assimilate knowledge when the topic has immediate value for their profession/area of knowledge.

Formal lectures - this course includes a series of 25 lectures, and 5 practical classes in gross pathology - student exposure to fresh and fixed pathological specimens (from necropsies and abattoir specimens).

At the end, the student must understand and learn the occurrence, development, and progression of pathological changes in body systems and individual organs, and to relate their morphology at gross (macroscopic) and microscopic levels to clinically recognizable functional defects and disease states.

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REFERENCES
Kumar V, et al. Robbins and Cotran Pathologic Basis of Disease. 10th ed. Zachary JF. Pathologic Basis of Veterinary Disease. 7th ed. Cheville NC. Ultrastructural Pathology: The Comparative Cellular Basis of Disease. 2nd ed. Haschek WM, Rousseaux CG, Wallig MA. Fundamentals of Toxicologic Pathology. 3rd ed.
Journals: Toxicon Journal of Toxicology Veterinary Research Veterinary Pathology Journal of Veterinary Diagnostic Investigation Pesquisa Veterinária Brasileira

Issue Date

30/04/2023

Lecturer: Prof. Dr. Fábio de Souza Mendonça