UNICAMILLUS

Degree Course in Medicine and Surgery

Course: **Anatomic Pathology II**
SDS: **MEDS-04/A**

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Total CFU: **8**

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PREREQUISITES

Although there are no prerequisites, a knowledge of basic elements of chemistry, biology, anatomy, histology, microbiology, biochemistry and general pathology is necessary.

LEARNING OBJECTIVES

- Knowledge of the role of Anatomic Pathology in all clinical settings
- Knowledge of the procedures and the tools for carrying out a macroscopic examination
- Understanding of the principles that are the basis of a cytological and histological diagnosis

Students are expected to work towards meeting the following objectives:

- Knowledge and understanding (Dublin 1): To recognize morphological and functional differences between normal and pathological tissues and to understand, from a structural, morphological and functional perspective, the different types of pathological lesions.
- Applying knowledge and understanding (Dublin 2): Students will be able to interpret data originating from a laboratory of histopathology, to apply principles of diagnostic pathology. Students will be able to recognize the morphological characteristic of different pathological tissue and they will be introduced to the modern concept of personalized therapy
- Making judgments (Dublin 3): Students will be able to integrate pathological findings with clinical manifestations of diseases and to understand the mechanisms underlying signs and symptoms of diseases.
- Communication skills (Dublin 4): To become familiar with essential terminology related to human diseases and to the concepts of disease etiology, pathogenesis, morphological characteristics
- Learning skills (Dublin 5): Students will learn the morphological and functional alterations that pathogens and aberrant stimuli can induce in molecules, cells and tissues and their consequences for the entire organism as well as the basic defensive mechanisms in response to them.
- Knowledge of the role of Anatomic Pathology in clinical settings related to organ disease.

- Knowledge of the procedures and the tools for carrying out a macroscopic examination in the above- mentioned clinical settings.
- Knowledge of the pre-analytical and analytical procedure for processing the material in the above-mentioned clinical settings.
- Understanding of the principles on which the histological and cytological diagnosis is based in the above-mentioned clinical settings.

LEARNING OUTCOMES

The expected learning outcomes are consistent with the general provisions of the Bologna Process and the specific provisions of Directive 2005/36 / EC. They are found within the European Qualifications Framework (Dublin descriptors) as follows:

Knowledge and understanding

The student will have to be able to identify the main anatomic-histological changes caused by the disease in the different organs and systems at the macroscopic, microscopic, ultrastructural and genetic/molecular level.
The student must be able to correlate the anatomic-histological pictures to specific semeiological and clinical pictures.

Applying knowledge and understanding

At the end of the course, the student will be able to identify the professional contribution of the pathologist in the diagnostic and therapeutic process of diseases.
Identify the interdependence between Pathological Anatomy, the general / specialist clinic and the diagnostic-instrumental disciplines (Radiology, Immunology, Clinical Chemistry, etc.) and communicate their requests with pathological clinical colleagues, modulating the type of cyto / histopathological analysis based on the clinical pictures of the patients.

Communication skills

At the end of the course, the student must know:

- how to use a specific scientific terminology in a manner consistent with the various contexts of the pathological anatomy laboratory;
- how to orally expose the arguments in an organized and coherent way;
- how to use a scientific language that is adequate and consistent with the topic of the discussion.

Making judgements:

At the end of the course, the student must know:

- how to carry out general assessments relating to the topics covered;
- how to distinguish the specific applications of Pathological Anatomy in articles of scientific literature;
- how to recognize the importance of a thorough knowledge of the topics consistent with an adequate medical education;
- how to identify the fundamental role of a correct theoretical knowledge of the subject in clinical practice.

Learning skills

At the end of the integrated teaching, the student will acquire skills useful to deepen and expand

their knowledge in the field of the course, also through the consultation of scientific literature, databases, and specialized websites.

SYLLABUS

Introduction to Pathological Anatomy: activities of Pathological Anatomy; type of exams, definitive and intraoperative; specimen management; histological and cytological techniques including the various ancillary techniques with hints of molecular techniques.

Pathology of the upper and lower respiratory tract: Neonatal hyaline membrane disease - Pulmonary edema - Pulmonary embolism - Pulmonary emphysema - Pulmonary hypertension - Diffuse alveolar damage (DAD) and acute respiratory failure - Bacterial pneumonia and bronchopneumonia - Pulmonary tuberculosis - Interstitial pneumonia; pulmonary fibrosis - Bronchial asthma; extrinsic allergic alveolitis - Lung neoplasms - Pneumoconiosis - Pathology of the pleura.

Pathology of oral cavity: Notions of embriology and histology- Oral Inflammatory Lesions- Diseases of teeth and supporting structures- Bacterial/Viral/Mycotic lesions- Leukoplakia and Erythroplakia- Benign and malignant epithelial and soft tissue tumors of the oral cavity- Oral melanocytic lesions and oral melanoma- Tumors of the tongue- Odontogenic lesions- Inflammatory lesions of teeth and peri-odontal structures- Ondotogenic cysts- Benign and malignant odontogenic tumors- Role of immunohistochemistry in oral cavity lesions.

Pathology of head and neck: Inflammatory lesions of the nose, sinuses and naso-pharynx- Benign and malignant tumors of the upper air-ways- Inflammatory lesions and tumors of the ear- Inflammatory, reactive, benign and malignant tumors of the larynx; Inflammatory, benign and malignant disease of Salivary Glands- Branchial clefts- Thyroglossal duct cyst- Paraganglioma.

Pathology of the Skin: Normal histology of the skin and sub-cutaneous soft tissues- Acute and Chronic Inflammatory dermatoses- Psoriasis- Benign and malignant tumor of the skin- pathology of melanocytic lesions- soft tissue tumors.

Cardiovascular pathology: Ischemic heart disease - Myocarditis - Pericarditis - Endocarditis - Primary cardiomyopathies - General information on cardiac malformations - Atherosclerosis - Aneurysms - Arteritis.

Breast pathology: General - Non-carcinoma pathology - Breast proliferative disease - Breast cancer - General - Macroscopic and microscopic types - Screening methods - Prognostic factors - Morphological and Immunohistochemical.

Pathology of the digestive system: Pathology of the esophagus - Non-neoplastic pathology of the stomach - Gastrointestinal polyps - Tumors of the stomach - Non-neoplastic pathology of the intestine with particular regard to inflammatory bowel diseases - Intestinal tumors - Histopathological diagnostic parameters of the liver - Acute and chronic hepatitis - Cholestatic pathology and alcoholic liver disease - Cirrhosis and hepatic carcinoma - Pathology of the transplanted liver - Pathology of the gallbladder and extra-hepatic biliary tract - Non-neoplastic pathology of the pancreas - Pancreatic tumors - Amyloidosis.

Pathology of gynecologic tract: Vulvar pathology (infection, benign and malignant tumor, precursor lesion)- Cervical Pathology(infection, benign and malignant tumor, precursor lesion)- Endometrium (inflammatory disorders, benign and malignant tumor, precursor lesions, molecular classification of endometrial tumor), mesenchymal tumor, adnexal tumor.
Pathology of the central nervous system: Hypertension - Vascular diseases - Trauma - Inflammation & infections - Degenerative diseases - Neoplasms.

Endocrine pathology: Pathology of the adenohypophysis: Pituitary adenomas - Lymphocytic adenohypophysitis - Rathke's cyst - Craniopharyngioma. Pathology of the adrenal gland: malformations, vascular pathology, inflammatory / infectious pathology. Adrenocortical disorders: Congenital hyperfunction - Primary hyperfunction - Macronodular hyperplasia - Myelolipoma - Adenomas - Carcinomas - Secondary hyperfunction - Hypofunction - Neoplastic pathology of the adrenal medulla: pheochromocytoma, neuroblastoma. Thyroid pathology: Malformations - Goiter -Tumors - Thyroiditis.

Soft tissue pathology: Liposarcoma, Fibroblastic/myofibroblastic tumors, Rhabdomyosarcoma.

COURSE STRUCTURE

The course is divided into two complementary parts (Pathological Anatomy 1 and Pathological Anatomy 2) in two consecutive academic semesters (1st and 2nd semester of the 3rd year).
The teaching is structured in lectures on selected topics proposing a study method that the student will also use in the activities of self-learning; constant attendance at lessons and integration through study on a systematic pathological anatomy text are strongly recommended.
Exercises will also be carried out on macroscopic pathological anatomy topics (autopsy findings) and on microscopic pathological anatomy topics on histological preparations chosen to cover various examples of organ pathology.

COURSE GRADE DETERMINATION

The verification of the students' preparation will take place with a written exam followed by an oral test. The written test will consist of 30 questions with multiple choice answers and each correct answer will be awarded one point. To access the oral exam, the student must have scored at least a minimum of 18 points. During the oral exam, the examining commission will evaluate the student's ability to apply the knowledge and make sure that the skills are adequate to know and correctly apply all that has been learned in pathological anatomy.
The following will also be assessed: making judgments, communication skills and learning skills as indicated in the Dublin descriptors.
In the assessment, knowledge and understanding have a weight of 40%, applied knowledge and understanding of 40% and independent judgment of 20%.

Hence, the whole examination will be evaluated as it follows:

Failed: severe poor knowledge of the subject, very limited skill in the analysis of specific items.

18-20: knowledge of the subjects of sufficient quality characterized by frequent imperfections. Analysis and reasoning skills of sufficient quality.

21-23: standard knowledge of the specific subject; analysis and reasoning skill of acceptable quality.

24-26: good knowledge of the subjects and good analysis and reasoning skills; arguments are expressed in a rigorous way.

27-29: very good knowledge of the specific scientific subjects, valid analysis and reasoning skills, significant skill in making judgements.

30-30L: outstanding knowledge of the specific knowledge of the scientific tasks. Exceptional analysis, reasoning and making judgments skills.

READING MATERIALS

- ROBBINS AND COTRAN, Pathologic Bases of Disease, Tenth Edition, Elsevier, 2024.
- ROBBINS AND COTRAN, Atlas of Pathology, Fourth Edition, Elsevier, 2015.
- ROBBINS AND COTRAN, Review of Pathology, Fifth Edition, Elsevier, 2021.
- Rubin's Pathology: Mechanisms of Human Disease, Eighth edition, Wolters Kluwer, 2019
- Lippincott's Illustrated Q&A Review of Rubin's Pathology, Second edition, Wolters Kluwer, 2011