

## **ANATOMIC PATHOLOGY COURSE (A.Y. 2020-2021): EXTENDED PROGRAM**

SSD: MED/08

CFU: 14

### **Course Professors**

Prof. Alò Piero Luigi (2CFU, MED/08)

EMAIL : pieroluigi.alo@unicamillus.org

Prof. Anemona Lucia (3 CFU, MED/08)

EMAIL : lucia.anemona@unicamillus.org

Prof. Bonanno Elena (3 CFU, MED/08)

EMAIL : elena.bonanno@unicamillus.org

Prof. Fattore Santeusanio Giuseppe (3 CFU, MED/08)

EMAIL : giuseppe.santeusanio@unicamillus.org

Prof. Mauriello Alessandro (3 CFU, MED/08)

EMAIL : alessandro.mauriello@unicamillus.org

### **PREREQUISITES**

Knowledge of fundamentals of Biology, Anatomy, Histology and General Pathology is required.

### **LEARNING OBJECTIVES**

The course of Anatomic Pathology (Part I) provides systematic treatment of the pathological foundations of diseases of the gastrointestinal, endocrine, breast, female and male genital apparatus.

At the end of the course, the student must be able to

- know the pathological characteristics of the main human diseases according to the program.
- Correlate the pathological framework with the related modifications that occur in other organs and systems and also with the instruments of the pathological diagnostics.
- Know the tools of cyto-histological diagnostics useful for a correct definition and / or staging of human lesions.
- Understand the the histopathological report in order to use it for patient management

Essential objectives of the course are :

- the acquisition of basic knowledge about the morphological, histopathological and biomolecular characteristics of the gastrointestinal, endocrine, breast, female and male genital systems pathologies.
- the acquisition of basic knowledge of the use of ancillary technologies such as immunohistochemistry and molecular biology, in the diagnostic paths of the 1gastrointestinal, endocrine, breast, female and male genital systems pathologies.

### **EXPECTED RESULTS:**

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

## **KNOWLEDGE AND UNDERSTANDING**

At the end of this course the student will have to know:

- Know and explain the morphological, histopathological and biomolecular characteristics of the pathology of the gastrointestinal system.
- Know and explain the morphological, histopathological and biomolecular characteristics of the pathology of the endocrine system
- Know and explain the morphological, histopathological and biomolecular characteristics of the breast pathology
- Know and explain the morphological, histopathological and biomolecular characteristics of the pathology of the female genital system.
- Know and explain the morphological, histopathological and biomolecular characteristics of the pathology of the male genital system.
- Know and explain the application of immunohistochemical and biomolecular techniques in histopathological diagnostics of the pathologies of the gastrointestinal, endocrine, breast, female and male genital systems with particular regard to typing the lesions by the study of prognostic and predictive biomarkers.

## **ABILITY TO APPLY KNOWLEDGE AND UNDERSTANDING:**

At the end of this course the student will be able to:

- Understand the fundamentals of the use of morphological, immunophenotypic and bio-molecular information for a correct diagnostic and therapeutic approach to the gastrointestinal, endocrine, breast, female and male genital systems pathology.
- Use the acquired knowledge for the autonomous study concerning the main aspects of the anatomic pathology.
- Acquire knowledge, concerning diagnostic problems, new classifications and new biomolecular technologies of diseases of the gastrointestinal, endocrine, breast, female and male genital tract by the support of texts and / or the consultation of scientific literature.

The acquisition of this knowledge will be stimulated and controlled, during the course by in itinere profit tests and verified at the end of the course by a final exam.

## **Communication skills**

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

- Use appropriate scientific terminology in the field of anatomic pathology
- Expose the arguments in an organized and consistent manner
- Use of appropriate scientific language consistent with the subject matter of the discussion

## **Making judgements**

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

- make general assessments of the specific topics of the course
- Make general assessments related to the topics covered in the following modules: Cytopathology, Histopathology, Autopsy Technique, Autopsy and Clinical Diagnosis, Digital and Molecular Pathology Techniques .

In the scientific literature, identify articles concerning technical applications of anatomic pathology  
**These expected outcomes will be measurable with the final exam.**

## **COURSE SYLLABUS:**

### **HEART AND BLOOD VESSELS**

Congenital Heart Disease  
Malformations Associated With Left-to-Right Shunts  
Malformations Associated With Right-to-Left Shunts  
Malformations Associated With Obstructive Lesions  
Ischemic Heart Disease  
Angina Pectoris  
Myocardial Infarction  
Chronic Ischemic Heart Disease  
Sudden Cardiac Death  
Valvular Heart Disease  
Calcific Valvular Degeneration  
Calcific Aortic Stenosis  
Calcific Stenosis of Congenitally Bicuspid Aortic Valve  
Mitral Annular Calcification  
Mitral Valve Prolapse (Myxomatous Degeneration of the Mitral Valve)  
Rheumatic Fever and Rheumatic Heart Disease  
Infective Endocarditis (IE)  
Noninfected Vegetations  
Nonbacterial Thrombotic Endocarditis (NBTE)  
Endocarditis of Systemic Lupus Erythematosus (Libman-Sacks Disease)  
Carcinoid Heart Disease  
Complications of Prosthetic Valves  
Cardiomyopathies  
Dilated Cardiomyopathy (DCM)  
Arrhythmogenic Cardiomyopathy  
Hypertrophic Cardiomyopathy  
Restrictive Cardiomyopathy  
Amyloidosis  
Myocarditis  
Pericardial Disease  
Pericardial Effusion and Hemopericardium  
Pericarditis  
Acute Pericarditis  
Chronic or Healed Pericarditis  
Tumors of the Heart  
Primary Cardiac Tumors  
Myxomas  
Papillary fibroelastomas  
Rhabdomyomas  
Metastatic Neoplasms  
Atherosclerosis  
Epidemiology of Atherosclerosis  
Clinicopathologic Consequences of Atherosclerosis  
Aneurysms and Dissections

Abdominal Aortic Aneurysm  
Thoracic Aortic Aneurysm  
Aortic Dissection

## **DISEASES OF HEMATOPOIETIC AND LYMPHOID SYSTEMS**

Reactive Lymphadenitis  
Chronic nonspecific lymphadenitis (Follicular, Paracortical, Sinus hyperplasia )  
Chronic specific lymphadenitis  
Cat-Scratch disease  
Kikuchi's Lymphadenitis  
Toxoplasmic Lymphadenitis  
Luetic Lymphadenitis  
Granulomatous Lymphadenitis  
SLE  
Sinus Histiocytosis with massive Lymphadenopathy (Rosai-Dorfman Disease)  
Castleman's Disease  
Lymphoid Neoplasms - Precursor B-cell and T-cell neoplasms  
Acute Lymphoblastic leukemia/lymphoma.  
Peripheral B-cell neoplasms  
Chronic Lymphocytic leukemia/Small Lymphocytic lymphoma  
Lymphoplasmacytic lymphoma  
Follicular lymphoma  
Marginal Zone Lymphoma  
Mantle Cell Lymphoma  
Diffuse Large B cell Lymphoma  
Burkitt Lymphoma  
High-grade B cell Lymphoma  
Plasma cells Neoplasms  
Multiple Myeloma  
Plasmacytoma  
Monoclonal Gammopathy of Undetermined Significance (MGUS)  
Amyloidosis  
Hodgkin Lymphoma  
Peripheral T-cell Neoplasms  
Adult T cell Leukemia/Lymphoma  
Peripheral T cell Lymphoma, NOS  
Angioimmunoblastic T-cell lymphoma  
Anaplastic Large Cell Lymphoma ALK positive and ALK negative  
Enteropathy-Associated T-cell Lymphoma  
Mycosis Fungoides and Sezary Syndrome  
Myeloid Neoplasms  
Myelodysplastic Syndromes  
Myeloproliferative Neoplasms  
Histiocytic Proliferations  
Langerhans Cell Histiocytosis  
Tumors of the Thymus  
Thymoma

## **LUNG**

Atelectasis (Collapse)  
Acute Respiratory Distress Syndrome  
Obstructive Versus Restrictive Pulmonary Diseases  
Obstructive Lung (Airway) Diseases  
Emphysema  
Chronic Bronchitis  
Asthma  
Bronchiectasis  
Chronic Interstitial (Restrictive, Infiltrative) Lung Diseases  
Fibrosing Diseases  
Granulomatous Diseases  
Smoking-Related Interstitial Diseases  
Pulmonary Diseases of Vascular Origin  
Pulmonary Embolism, Hemorrhage, and Infarction  
Pulmonary Hypertension  
Pulmonary Infections  
Community-Acquired Bacterial Pneumonias  
Community-Acquired Viral Pneumonias  
Covid disease associated features  
Chronic Pneumonias  
Tuberculosis  
Pneumonia in the Immunocompromised Host  
Pulmonary Disease in Human Immunodeficiency Virus Infection  
Lung Tumors  
Carcinomas  
Carcinoid Tumors

## **KIDNEY AND COLLECTING SYSTEM**

Glomerular Diseases  
Acute Postinfectious (Diffuse Proliferative) Glomerulonephritis  
Rapidly Progressive (crescentic) Glomerulonephritis  
Membranous nephropathy  
Minimal-change disease  
Focal segmental glomerulosclerosis  
Membranoproliferative Glomerulonephritis  
IgA nephropathy  
Chronic glomerulonephritis  
Lupus Glomerulonephritis  
Diabetic Glomerulosclerosis  
Diseases Affecting Tubules and Interstitium  
Tubulointerstitial Nephritis  
Acute Tubular Injury/Necrosis  
Cystic Diseases of the Kidney  
Autosomal Dominant (Adult) Polycystic Kidney Disease  
Autosomal Recessive (Childhood) Polycystic Kidney Disease  
Others cystic disease  
Congenital and Developmental Anomalies  
Neoplasms

Neoplasms of the Kidney  
Neoplasms of the Pelvis

## **GASTROINTESTINAL TRACT**

### **ESOPHAGUS**

Esophagitis  
Reflux Esophagitis  
Eosinophilic Esophagitis  
Barrett Esophagus  
Esophageal Tumors  
Adenocarcinoma  
Squamous Cell Carcinoma

### **STOMACH**

Gastropathy and Acute Gastritis  
Stress-Related Mucosal Disease  
Chronic Gastritis  
Helicobacter pylori Gastritis  
Autoimmune Gastritis  
Complications of Chronic Gastritis  
Peptic Ulcer Disease  
Mucosal Atrophy and Intestinal Metaplasia  
Dysplasia  
Gastric Polyps and Tumors  
Gastric Polyps  
Gastric Adenocarcinoma  
Lymphoma  
Neuroendocrine (Carcinoid) Tumor  
Gastrointestinal Stromal Tumor

### **SMALL AND LARGE INTESTINES**

Vascular Disorders of Bowel  
Ischemic Bowel Disease  
Hemorrhoids  
Diarrheal Disease  
Malabsorptive Diarrhea  
Infectious Enterocolitis  
Inflammatory Intestinal Disease  
Radiation Colitis  
Diversion Colitis  
Intestinal GVHD  
Sigmoid Diverticulitis  
Inflammatory Bowel Disease  
Colonic Polyps and Neoplastic Disease  
Inflammatory Polyps  
Hamartomatous Polyps  
Hyperplastic Polyps  
Serrated lesions  
Adenomas

Familial Syndromes

Adenocarcinoma

## **APPENDIX**

Acute Appendicitis

Tumors of the Appendix

## **LIVER**

Normal Histology and General Features of Liver Disease

Mechanisms of Injury and Repair

Liver Failure

Infectious Disorders

Viral Hepatitis

Autoimmune Hepatitis

Drug- and Toxin-Induced Liver Injury

Alcoholic and Nonalcoholic Fatty Liver Disease

Alcoholic Liver Disease

Nonalcoholic Fatty Liver Disease

Inherited Metabolic Liver Diseases

Hemochromatosis

Wilson Disease

Chronic Cholestatic Diseases

Primary Biliary Cholangitis

Primary Sclerosing Cholangitis

Circulatory Disorders

Impaired Blood Flow Into the Liver

Impaired Blood Flow Through the Liver

Hepatic Venous Outflow Obstruction

Passive Congestion and Centrilobular Necrosis

Nodules and Tumors

Focal Nodular Hyperplasia

Benign Neoplasms

Malignant Neoplasms

Liver Pathology in Pregnancy

## **GALLBLADDER**

Gallstone Disease

Cholecystitis

Acute Calculous Cholecystitis

Acute Acalculous Cholecystitis

Chronic Cholecystitis

Carcinoma of the Gallbladder

## **PANCREAS**

Congenital Cysts

Pancreatitis

Acute Pancreatitis

Chronic Pancreatitis

Pancreatic Neoplasms

Cystic Neoplasms  
Pancreatic Carcinoma

**MALE GENITAL SYSTEM AND LOWER URINARY TRACT  
TESTIS AND EPIDIDYMIS**

Cryptorchidism and Testicular Atrophy  
Inflammatory Lesions  
Vascular Disturbances  
Testicular Neoplasms

**PROSTATE**

Prostatitis  
Benign Prostatic Hyperplasia  
Carcinoma of the Prostate

**URINARY BLADDER**

Cystitis  
Tumors of the Urothelial Tract

**FEMALE GENITAL SYSTEM**

**CERVIX**

Neoplasia of the Cervix  
Squamous Intraepithelial Lesion (SIL, Cervical Intraepithelial Lesion)  
Invasive Carcinoma of the Cervix

**UTERUS**

Endometritis  
Adenomyosis  
Endometriosis  
Proliferative Lesions of the Endometrium and Myometrium  
Endometrial Hyperplasia  
Endometrial Carcinoma  
Leiomyoma  
Leiomyosarcoma  
Endometrial stromal sarcoma

**OVARIES**

Tumors of the Ovary  
Serous Tumors  
Mucinous Tumors  
Endometrioid Tumors

**BREAST**

Benign Epithelial Lesions  
Stromal tumors  
Fibroadenoma  
Phyllodes tumors  
Epithelial neoplasia  
In situ and invasive carcinoma





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## **ENDOCRINE SYSTEM**

### **PITUITARY**

Clinical Manifestations of Pituitary Disease

Hyperpituitarism

Hypopituitarism

Pituitary Adenomas

Lactotroph Adenoma

Somatotroph Adenoma

Corticotroph Adenoma

Other Anterior Pituitary Tumors

Gonadotroph (LH-producing and FSH-producing) adenomas

Thyrotroph (TSH-producing)

Null cell adenomas

Pituitary carcinoma

Posterior Pituitary Syndromes

Diabetes insipidus

Syndrome of inappropriate ADH (SIADH) secretion

Hypothalamic Suprasellar Tumors

Craniopharyngioma

### **THYROID**

Hyperthyroidism

Hypothyroidism

Cretinism

Myxedema

Thyroiditis

Hashimoto Thyroiditis

Subacute Lymphocytic (Painless) Thyroiditis

Granulomatous Thyroiditis

Riedel Thyroiditis

Graves' Disease

Diffuse and Multinodular Goiter

Diffuse Nontoxic (Simple) Goiter

Multinodular Goiter

Thyroid Neoplasms

Adenomas

Carcinomas

Papillary Carcinoma and Variants

Noninvasive Follicular Thyroid Neoplasm With Papillary-like Nuclear Features (NIFT-P)

Follicular Carcinoma

Poorly Differentiated and Anaplastic (Undifferentiated) Carcinoma

Medullary Carcinoma

Secondary tumors



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## **PARATHYROID GLANDS**

Hyperparathyroidism  
Primary Hyperparathyroidism  
Secondary Hyperparathyroidism  
Tertiary hyperparathyroidism.  
Parathyroid adenomas  
Parathyroid carcinomas  
Hypoparathyroidism  
Pseudohypoparathyroidism

## **ADRENALS GLANDS**

Adrenal Cortex  
Adrenocortical Hyperfunction (Hyperadrenalism)  
Hypercortisolism (Cushing Syndrome)  
Primary Hyperaldosteronism  
secondary hyperaldosteronism  
Adrenogenital Syndromes  
Adrenocortical Insufficiency  
Primary Acute Adrenocortical Insufficiency  
Waterhouse-Friderichsen Syndrome  
Primary Chronic Adrenocortical Insufficiency (Addison Disease)  
Secondary Adrenocortical Insufficiency  
Adrenocortical Neoplasms  
Adrenocortical adenomas  
Adrenocortical carcinomas  
Other Adrenal Lesions  
Adrenal myelolipomas  
Adrenal Medulla  
Pheochromocytoma

## **CENTRAL NERVOUS SYSTEM**

Cerebrovascular Diseases  
Hypoxia, Ischemia, and Infarction  
Intracranial Hemorrhage  
Other Vascular Diseases  
Central Nervous System Trauma  
Traumatic Parenchymal Injuries  
Traumatic Vascular Injury  
Infections of the Nervous System  
Epidural and Subdural Infections  
Meningitis  
Parenchymal Infections  
Diseases of Myelin  
Multiple Sclerosis  
Tumors  
Gliomas  
Neuronal Tumors  
Embryonal (Primitive) Neoplasms  
Other Parenchymal Tumors  
Meningiomas  
Metastatic Tumors

## **SKIN**

Acute Inflammatory Dermatoses  
Chronic Inflammatory Dermatoses  
Psoriasis  
Lichen Planus  
Lichen Simplex Chronicus  
Infectious Dermatoses  
Bacterial Infections  
Fungal Infections  
Verrucae (Warts)  
Blistering (Bullous) Disorders  
Dermatitis Herpetiformis  
Tumors of the Skin  
Benign and Premalignant Epithelial Lesions  
Malignant Epidermal Tumors  
Melanocytic Proliferations

## **AUTOPSY**

Autopsy definition  
Post-mortem changes

## **COURSE STRUCTURE**

ANATOMIC PATHOLOGY course consists of 14 CFU for a total of 140 hours structured in frontal teaching, exercises and evaluation of learning. Attendance is mandatory. The teaching is carried out by five Professors. The teaching will be carried out through lectures, exercises and practical activities.

Frontal teaching will be carried out with lessons divided into theoretical lessons of 2 hours based on the academic calendar. The teacher uses didactic tools such as presentations organized in powerpoint files with explanatory diagrams, illustrations, macroscopic and microscopic images and in films and animations. At the beginning of each lesson there will be a summary of the previous lesson in order to verify the correct understanding by the students. At the end of the theory relating to each topic, theoretical-practical examples will follow that will illustrate their application in practice.

## **COURSE GRADE DETERMINATION**

Students' preparation will be verified by oral interview. During the oral test the Examining Committee will evaluate:

autonomy of judgement (making judgements), communication skills and learning skills of the student according to the Dublin descriptors.

"knowledge and understanding skills" will have a weight of 40%, "applied knowledge and understanding skills" of 40% and "autonomy of judgment" of 20%.

The examination grade, expressed in thirtieths, will be established according to the following criteria:

Rejected: important lacks and/or inaccuracy in the knowledge and understanding of the topics; limited ability to analyze and synthesize the themes, frequent generalizations.

18-20: Just sufficient knowledge and understanding of the topics.

21-23: Discreet knowledge and understanding of the topics.

24-26: Good knowledge and understanding of the topics.

27-29: Complete knowledge and understanding of the topics.

30-30L: Very good level of knowledge and understanding of the topics.

### **SUPPORT ACTIVITIES**

Practical integrative activity, such as laboratory exercises, will be communicated and planned during the course.

### **EXAMINING COMMISSION**

President: Prof. Fattore Santeusanio Giuseppe ([giuseppe.santeusanio@unicamillus.org](mailto:giuseppe.santeusanio@unicamillus.org))

Component: Prof. Alò Piero Luigi ([pieroluigi.alo@unicamillus.org](mailto:pieroluigi.alo@unicamillus.org))

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### **READING MATERIALS**

Recommended textbooks:

-Robbins & Cotran Pathologic: Basis of Disease Vinay Kumar, Abul K. Abbas, Jon C. Aster, 10th Ed (2021), Elsevier

- Rubin's Pathology: Clinicopathologic Foundations of Medicine 7th Ed., Editor David S. Strayer and Emanuel Rubin, 2015, Wolters Kluwer Health

The student will be received additional didactic material, such as presentations and scientific articles.

### **STUDENT RECEPTION**

The teachers will reply to all booking requests that will arrive via e-mail. Receive by appointment.