FACULTY OF STOMATOLOGY

STUDY PROGRAM STOMATOLOGY 0911.1

DEPARTMENT OF MORPHOPATHOLOGY

APPROVED
at the meeting of the Commission for Quality Assurance and Curriculum Evaluation of the Faculty of Stomatology
Minutes No.___ of _____

Chairwoman, PhD., assoc. prof.
Stepco Elena_____

APPROVED
at the meeting of the Faculty Council of Stomatology
Minutes No.___ of _____

Dean of Faculty PhD, DMD, Univ. Prof.

Ciobanu Sergiu_____

APPROVED

approved at the meeting of the morfopathology department

Minutes No.___ of _____

Head of the department Doctor Habilitatus in Medical Sciences,

associate professor Melnic Eugen _____

SYLLABUS

DISCIPLINE **MORPHOPATHOLOGY**

Integrated studies

Type of course: **Mandatory discipline**

Chișinău, 2019

I. PRELIMINATIONS

- **General presentation of the discipline: place and role of the discipline in the formation of the specific competences of the professional / specialty training program.**

The morphopathology course is an important component of preclinical and clinical education, the main objective is to study the material substrate of the disease, forming the subject of nosology. Expects to know the necessary etiology and pathogenesis to understand the essence of the theoretical and practical bases of medicine, for a more in-depth study of the clinical and morphological manifestations of the disease and the use of this knowledge in the physician's daily practice.

Morphopathology is a discipline studied at the 3rd year of Faculty of Dentistry, whose analytical program correlates with a large number of preclinical disciplines (anatomy, embryology, histology, cell and molecular biology, pathophysiology), and dental clinic programs. It includes the notions needed to understand the background of diseases, thus linking the fundamental sciences and dental practice.

Mission of the curriculum (aim) in professional training

One of the main objectives of the course is to substantiate the knowledge of general and special pathological anatomy necessary for the understanding of the pathological processes in accordance with the etiology, the mechanisms of disease production and the acquisition of macroscopic and microscopic aspects of different categories of lesions. Knowledge and understanding of how to produce, develop and complete injuries. Defining and identifying lesions according to macroscopic and histopathological aspects. Understanding the need to recognize injuries in the general context of the disease. Learning the technique of macroscopic and histopathological examination of organs and tissues.

Knowledge obtained from a study of pathology will be included with other courses to provide methods of assessment and diagnosis of patients.

Language (s) of the course: Romanian, Russian, English;

- **Beneficiaries**: students of the III rd. year, faculty of dentistry, Dentistry specialty

I. MANAGEMENT OF THE DISCIPLINE

Code of discipline		**F. 04.O.043 / F. 05.O.061**	
Name of the discipline		**Morphopathology**	
Person(s) in charge of the discipline		PhD., assoc. prof., Doctor Habilitatus in Medical Sciences Eugen Melnic	
Year	**II, III**	Semester/Semesters	**IV,V**
Total number of hours, including:			**90/60**
Lectures	**17/17**	Practical work	**17/17**
Seminars	**34/17**	Self-training	**22/9**
Form of assessment	**C/E**	Number of credits	**3/2**

II. TRAINING AIMS WITHIN THE DISCIPLINE

✓ ***At the level of knowledge and understanding***

- Acquiring a specific language of pathological anatomy, needed in dialogue with representatives of various medical specialties.
- Correlation of these notions with those presented in other clinical or preclinical disciplines.
- Correlation of clinical manifestations of diseases with macroscopic and microscopic changes.
- Formulation of a suitable differential diagnosis of lesions present in a given patient.
- Establishing the role of the anatomo-pathological examination in establishing the diagnosis.
- Establishing a correct diagnosis with clinical and anatomo-pathological data.
- Knowledge of the main lesions from anatomo-pathological point of view and understanding of the main histological changes as well as the mechanisms of their production.

✓ ***At the level of application:***

- To properly use disease-specific terminology.
- Be able to describe and comment from the anatomo-pathological point of view the diseases studied in the clinic.
- To be able to interpret a histopathological analysis bulletin.
- To sensitize future clinicians for the decisive importance of histopathological diagnosis for medical practice.

✓ ***At the level of integration:***

- Be able to evaluate the place and role of morphopathology in the preclinical training of the medical student.
- Be competent to use the knowledge and methodology of pathological anatomy in the ability to explain the nature of pathological processes;
- Be able to make a connection between structure and function at molecular → cellular → tissue → organ level.
- Be able to deduce the possible causes of the suffering of the pathological processes and their consequences on the cell, the tissue, the body as a whole.
- Be able to implement the knowledge gained in the work of a researcher.
- Be competent to use critical and reliable scientific information obtained using the new information and communication technologies.
- Be able to use multimedia technology to receive, evaluate, store, produce, present and exchange information, and communicate and participate in networks via the internet.
- Being able to learn, this will contribute to the management of the professional route.

III. PRELIMINARY CONDITIONS AND REQUIREMENTS

Student of the2nd and 3rd year requires the following:

• knowledge of the language of teaching;
• competences confirmed in the disciplines of previous years of studies;
• digital competences (use of the Internet, document processing, electronic tables and presentations, use of graphics programs);
• ability to communicate and team work;

• qualities - tolerance, compassion, autonomy.

III. THEMES AND ESTIMATE ALLOCATION OF HOURS

A. ***Courses (lectures):***

Nr. d/o	Theme	Hours
1.	Reversible and irreversible cell lesions. The process of cellular injury, the morphology of reversible cell lesions. Intracellular accumulations due to metabolic disorders: lipids, proteins, glycogen, pigments. Hyalinosis. Pathological calcification. Necrosis and apoptosis. Cellular organism's response to cellular damage. Blood and lymphatic circulation disorders. **Morphological changes in edema, hyperaemia and congestion. Hemorrhage. Thrombosis. Embolism**: pulmonary and systemic thromboembolism, lipid embolism, amniotic fluid embolism, gastric embolism. **Acute and chronic ischemia. Infarction** - Infarct Types. **Morphological damage of the shock**.	2
2.	Adaptation and compensatory processes. Regeneration of tissues. Cellular adaptive responses of growth and differentiation: atrophy, hypertrophy, hyperplasia, metaplasia. Aspects of cell growth (regeneration). Connective tissue repair (angiogenesis, fibrosis). Wound healing. Inflammation. **Acute inflammation**: changes in acute inflammatory focus, Classification of exudative inflammation. Serous, fibrinous, purulent inflammation. Possibilities of evolution of acute inflammation. Abscess and cellulitis, septicaemia. **Chronic inflammation.** Cellular changes in chronic non-specific inflammation. **Granulomatous inflammation**. General and classification. Tuberculosis, syphilis, leprosy, cat claw disease, toxoplasmosis, granulomatous foreign body reaction, sarcoidosis.	2
3.	Tumours: General Aspects. **Nomenclature. The general characters of benign and malignant neoplasms. Carcinogenesis.** Biology of tumour development. Tumour angiogenesis. Clinical-pathological changes in tumours. Grading and staging of malignant neoplasms. Morphological diagnosis in cancer.	2
4.	**Hematogenous bone pathology: morphology of anemia, polycythemia. Leukemias and myeloproliferative diseases:** acute leukaemia, chronic myeloid leukemia. **Pathology of lymph nodes: acute and chronic nonspecific lymphadenitis.** **Lymphoid tumour proliferation:** lymphomas and leukaemia of lymphocyte B, lymphomas and leukaemia of T and NK lymphocytes, Hodgkin's lymphoma. **Spleen pathology:** the morphological substrate of splenomegaly**.** **Pathology of thymus:** hyperplasia, tumours.	2
5.	**Pathology of arteries: Atherosclerosis. Vascular morphological changes in arterial hypertension. Aneurysms: classification, types of aneurysms. Aortic Dissection.** **Vein pathology: thrombophlebitis, phlebo-thrombosis. Varicose veins.** **Heart lesions: acute and chronic ischemic heart disease. Changes in heart rate in systemic arterial hypertension. Valvulopathy:** Valvular degenerative changes (mixomatous degeneration of mitral valve, mitral valve prolapses). Calcified aortic stenosis, calcification of the mitral valve ring. Acute and Chronic **Rheumatic fever. Endocarditis. Primary cardiomyopathies** (dilatation, hypertrophy, restrictive) **and**	2

	secondary. Myocarditis. Pathology of the pericardium: pathological pericardial fluids. **Congenital angiocardiopathies. Heart failure.**	
6.	**Pathology of the respiratory tract:** rhino pharyngeal, laryngitis, tracheitis and bronchitis. **Respiratory distress syndrome in adults and children**. **Atelectasis**. **Pulmonary infections:** Lobular pneumonia. Bronchopneumonia. Interstitial pneumonia (primary atypical pneumonia). Suction bronchopneumonia. Pulmonary abscesses. **Chronic pulmonary pathology: Obstructive chronic bronchopneumopathy. bronchial asthma, pulmonary emphysema, chronic bronchitis, bronchiectasis. Broncho-pulmonary tumours:** bronchogenic carcinoma, paraneoplastic syndromes, bronchiolo-alveolar carcinoma, neuroendocrine tumours, pulmonary metastases. **Pleural pathology:** Inflammatory pleural effusions and accumulation of pathological fluids in the pleural cavity. Pneumothorax. Primary and secondary pleural tumours.	2
7.	Primary, secondary, progressive tuberculosis. Extrapulmonary tuberculosis. Syphilis.	2
8.	Head and neck pathology. Fine Needle Aspiration of the Head and Neck. Anomalies in the development of oral cavity and teeth. Odontogenic and non-odontogenic lesions of the oral cavity. Oral mucosa pathologies: causes, pathogenic mechanisms, classification, macro- and microscopic changes, consequences and complications.	2
9.	Benign and Non-Neoplastic Diseases of the Oral Cavity and Oropharynx. Non-infectious Vesiculoerosive and Ulcerative Lesions of the Oral Mucosa. Causes, pathogenetic mechanisms, classification, macro- and microscopic changes, consequences and complications. Pathology of jaws: inflammatory diseases (osteitis, osteomyelitis), odontogenic and non-odontogenic cysts, pseudotumoral disorders (fibrosis dysplasia, cherubism, histiocytosis X)	2
10.	Premalignant and malignant lesions of the Oral Cavity. Odontogenic and non-odontogenic jawbones tumours: causes, pathogenetic mechanisms, classification, macro and microscopic changes, consequences and complications of the hard tissues, pulp and periapical tissue of the tooth.	2
11.	Salivary gland pathology: salivary gland development abnormalities Causes, pathogenetic mechanisms, macro and microscopic changes, consequences and complications of the following diseases: • Salivary cysts (mucilages, retention cysts, ramifications, lymphoepithelias) • Salivary lithiasis (sialalytic) • Primary acute and secondary sialadenitis (epidemic parotitis, cytomegalovirus) • Chronic unspecified and specific (tuberculosis, actinomycosis) • Sjogren syndrome Salivary gland tumours: classification and theories of the development of salivary gland tumours: benign and malignant epithelial tumours, benign and malignant mesenchymal tumours, lymphomas, secondary tumours.	2
12.	**Gastrointestinal pathology:** Diseases of the esophagus: malformations, esophagitis, stenosis-dilation, tumours. Stomach diseases: gastritis, gastro-duodenal ulceration, gastric mucosal hyperplasia, benign and malignant tumours of the stomach, congenital malformations. **Intestinal pathology:** circulatory disorders, lumen changes (megacolon, diverticula), enterocolitis, inflammation of some intestinal segments (appendicitis, proctitis), specific inflammation (Crohn's disease, ulcerative colitis), benign and malignant tumours. Hernias, intestinal occlusion, peritoneal diseases. Intestinal infections: dysentery, salmonellosis, typhoid fever, cholera.	2

13.	**Liver Pathology:** Jaundice and cholestasis. Acute and chronic viral infectious hepatitis. Bacterial, parasitic and helminthic infections. Autoimmune hepatitis. Drug and Toxic Induced Hepatitis: Alcoholic Liver Disease. Non-alcoholic steatosis. Genetic errors in metabolism: hemochromatosis, Wilson's disease, alpha-1-antitrypsin deficiency, neonatal hepatitis. Hepatic cirrhosis. Portal hypertension. Benign and malignant tumours. **Biliary pathology:** Cholelithiasis. Acute and chronic colangitis. Acute and chronic cholecystitis. Gallbladder and extra-hepatic biliary tract carcinoma. **Pathology of exocrine pancreas**: Cystic fibrosis. Acute and chronic pancreatitis. Benign and malignant tumours.	2
14.	**Pathology of urinary system and urinary tract:** **Congenital anomalies.** **Glomerular nephropathy:** clinical syndromes: histological alterations; pathogenesis of glomerular lesions: deposition of circulating anti-glomerular antibodies on the basal membrane, complement activation. Acute diffuse proliferative postinfectious glomerulonephritis. Fast progressive glomerulonephritis (semilunar). Membranous glomerulonephritis. Disease with minimal changes (lipoid nephrosis). Glomerular lesions in systemic diseases. **Tubulo-interstitial nephropathy:** acute tubular necrosis; tubulo-interstitial nephritis: acute, chronic pyelonephritis, reflux nephropathy, drug and toxins-induced tubulo-interstitial nephritis. Vascular nephropathies: benign and malignant nephroangiosclerosis; stenosis of the renal artery. **Urinary tract obstruction (obstructive uropathy). Renal tumours.** **Bladder and urinary tract pathology**: congenital abnormalities, inflammation, benign and malignant tumours.	2
15.	Pathology of the male genital system. **Testicular and epididymis diseases: malformations, inflammations, tumours. The deferent duct and spermatic cord diseases. Prostate pathology: prostatitis, nodular hyperplasia, prostate carcinoma. Pathology of external genitalia. Disorders of sexual differentiation. Pathology of the female genital system. Morphological investigation methods. Uterine cervix pathology:** cervicovaginal cytology, cervicitis, endocervical polyps, intraepithelial cervical neoplasia, squamous cell carcinoma. **Pathology of the uterine body:** endometriosis, adenomyosis, endometritis, dishormonal lesions, benign and malignant tumours**. Pathology of fallopian tubes:** acute and chronic inflammation, tumours. **Ovarian pathology:** inflammation, polycystic ovary, pseudotumour and tumours. **Pathology of pregnancy:** placental inflammation, ectopic pregnancy, gestational trophoblastic disease.	2
16.	**Endocrine pathology: Pituitary gland pathology:** adenomas. **Thyroid gland pathology**: hypothyroidism (cretinism, myxedema), hyperthyroidism (thyrotoxicosis), Graves' disease, acute and chronic thyroiditis, simple non-toxic diffuse goitre, multi-nodular goitre, benign and malignant tumours. Thyroid aspiration cytology. **Parathyroid gland pathology:** Primary and secondary hyperparathyroidism**.** **Adrenal gland pathology:** hyperadrenalism (Cushing's syndrome), primary hyperaldosteronism, adrenogenital syndrome, primary adrenocortical insufficiency (**Waterhouse–Friderichsen syndrome**), primary chronic failure (Addison's disease). Adrenocortical tumours.	2

	Medullo-adrenal pathology: pheochromocytoma, neuroblastoma. **Endocrine pancreatic pathology:** morphological changes in type I and II diabetes mellitus. Tumours: insulinoma, gastrinoma.	
17.	**Pathology of CNS:** Meningitis: bleeding, meningitis. Hydrocephalus, internal hemocephaly. Brain diseases: **Hypertensive encephalopathy** - circulatory disorders (infarction, haemorrhage, anoxic encephalopathy) Peripheral nerve pathology. **Infections:** Acute bacterial and viral meningitis. Acute suppurated infections: cerebral abscess, subdural empyema, extradural abscesses. Chronic bacterial meningoencephalitis: tuberculosis, neurosyphilis. **Primary and secondary tumours.**	2
Total		**34**

B. ***Seminars / Practical lectures:***

Nr. d/r	**Theme**	**Hours**		
		S		**S**
1.	Introduction to morphopathology, notions about disease, diagnosis, etiology, pathogenesis, CIM, diagnostic errors, cytopathology.	2	1	1
2.	Reversible intra- and extracellular lesions (accumulations). Etiology of metabolic disorders, their classification. Hydroproteic degeneration (pathological keratinization, cellular and extracellular hyalinosis), metabolic diseases of some amino acids, glucose dystrophies (glycogenesis, mucopolysaccharidosis, fructose intolerance, galactose, mucinous dystrophy), lipid dystrophy. Amyloidosis. Endogenous and exogenous pigments. Pathological calcification. **Specimens to be studied:** Liver fatty dystrophy (liver steatosis). Heart lipomatosis Hydropic (vacuolar) dystrophy of the epithelium of convoluted renal tubes Hyalinosis in uterine leiomyoma Hyalinosis of the heart valves (rheumatic mitral valve) Renal Amyloidosis Hemosiderosis of the kidney Liver in mechanical jaundice Metastatic calcification of the myocardium Amyloidosis of the kidney Calculations in the gallbladder Kidney stones	2	1	1
3.	Irreversible tissue / cellular lesions: necrosis, apoptosis. Death, signs of death, post mortem changes. **Specimens to be studied:** Necrosis of the epithelium of renal convoluted tubes. Lienal infarction Caseous necrosis of the lymph node in tuberculosis Pancreonecrosis. Dry gangrene of the hand (foot). Caseous necrosis in tuberculosis (caseous pneumonia). Postinfarctional scarring in myocardium.	2	1	1

4.	Circulatory disorders (I): hyperaemia, congestion, ischemia, infarction, stasis Circulatory disorders (II): thrombosis, embolism, haemorrhage, edema, shock, lymphatic circulation disorders. **Specimens to be studied:** Congestive hyperemia liver (nutmeg liver). Congestive hyperemia of the lung (brown induration of the lung). Hemorrhagic lung disease. Renal infarction. Nutmeg liver. Ischemic lienal infarction. Myocardial infarction Recently red trombus in the vein. Parietal thrombosis of aorta. Thromboembolism of pulmonary artery. Cancer metastases in the lung. Purulent embolic nephritis (metastatic abscess into the kidney).	2	1	1
5.	Acute and chronic inflammation. Forms of inflammation: Alterative inflammation, exudative inflammation (serous, fibrinous, purulent, putrid, haemorrhagic), productive inflammation: nonspecific (reparative-regenerative processes), foreign body granuloma, specific inflammation. **Specimens to be studied:** Pyogenic leptomeningitis. Interstitial myocarditis. Renal miliary tuberculosis. Fibrinous pericarditis (villus cord). Abcedant bronchopneumonia. Lobar franc pneumonia (gray hepatitis). Fibrinous pleuritis. Fibrinous peritonitis. Diffuse cardiosclerosis. Echinococcus into heart.	2	1	1
6.	Inflammatory processes in the OMF pathology. Alterative jaw lesions and cysts of the jaws. **Specimens to be studied:** Periapical granuloma Osteomyelitis Periapical radicular cyst Dentigerous cyst Periodontal lateral cyst Odontogenic keratocyst Nasolabial cyst	2	1	1
7.	**TEST nr.1:** ***topics 1, 2, 3, 4, 5, 6***	2	1	1
8.	Compensatory adaptive processes. Regeneration of the tissues. **Specimens to be studied:** Granulation tissue Myocardial compensatory hypertrophy. Glando-cystic hyperplasia of the endometrium. Post-infarction cardiosclerosis.	2	1	1

	Left ventricular hypertrophy of the heart. Right ventricular hypertrophy of the heart. Hypertrophy of the bladder wall in the prostate adenoma Brown heart atrophy Ovarian atrophy. Hydronephrosis Hydrocephaly			
9.	Tumours, generalities. Anatomo-clinic classification. Macroscopic, histological and cytological features, tumour growth and propagation, metastasis, and recurrence. Histogenetic classification of tumours: epithelial, mesenchymal, melanocytic tumours, embryonic and germinal tumours, nerve tissue tumours and envelopes, diffuse neuroendocrine system tumours. **Specimens to be studied:** Papilloma of skin. Squamous carcinoma with cornification. Adenocarcinoma of the colon. Metastasis of glandular carcinoma in the liver. Centro-hilar pulmonary carcinoma. Laryngeal carcinoma. Gastric carcinoma. Metastases of carcinoma in the liver. Carcinoma metastases in the lungs. Esophageal carcinoma.	2	1	1
10.	Pathology of the hematopoietic system: Blood pathology: anemia, polycythemia, leucocytosis, acute and chronic leukemia, thrombocytopenia, thrombocytopenia, haemorrhagic diatheses. Bone marrow pathology: osteomedullar insufficiency, myeloproliferative syndromes. Non-tumoural lymph node pathology. Pathology of the spleen. **Specimens to be studied:** Liver in chronic lymphoid leukemia. Plasmacytoma. Lymph node in Hodgkin's lymphoma. Bone marrow in leucosis Kidneys in leucosis. The spleen in chronic myeloid leukemia. Mesenterial lymph nodes in chronic lymphoid leukemia. Lymph nodes in Hodgkin's lymphoma. Porphyric spleen in Hodgkin's lymphoma.	2	1	1
11.	Artery disease: arteriosclerosis, hypertension, aneurysms, arteritis, Raynaud's syndrome. Venous diseases: Varicose, phlebitis, thrombophlebitis. Diseases of capillaries and lymph vessels **Specimens to be studied:** Coronary artery thrombosis. Microfocal cardiosclerotic atherosclerosis. Arteriosclerotic nephrosclerosis. Atherosclerosis of the aorta (parietal thrombosis).	2	1	1

	Aortic aneurysm. Intra-cerebral haemorrhage (hematoma). Myocardial infarction Chronic cardiac aneurysm with thrombosis. Wrinkled kidney.			
12.	Pathology of the heart: Diseases of the pericardium. Myocardial diseases: ischemic heart disease (myocardial infarction, angina pectoris, chronic ischemic heart disease, sudden cardiac death), heart hypertrophy and dilation, cardiomyopathy, myocarditis. Endocardium diseases: endocarditis, valvulopathy. Heart failure. **Specimens to be studied:** Recent myocardial infarction. Myocardial infarction in course of organization. Rupture of the heart (left ventricle) in acute myocardial infarction. Macrofocal postinfarct cardiosclerosis. Chronic cardiac aneurysm with thrombosis. Cardiac thrombosis. Fibrinous pericarditis.	2	1	1
13.	Degenerative connective tissue pathology: Acute and Chronic Rheumatic Fever. Endocarditis. Primary cardiomyopathies (dilatation, hypertrophy, restrictive) and secondary. Myocarditis. Pathology of pericardium: pathological pericardial fluids. Congenital angiocardiopathies. Heart failure. **Specimens to be studied:** Mitral valve stenosis Endocarditis Libman Sacks Ventricular septal defect Atrial septal defect Rheumatic endocarditis	2	1	1
14.	Pulmonary Pathology: Bronchitis, lobar pneumonia, bronchopneumonia. COPD: chronic bronchitis, bronchial asthma, emphysema. **Specimens to be studied:** Franc lobar pneumonia (grey hepatisation). Bronchopneumonia (focal pneumonia). Abcedant bronchopneumonia. Acute necro-ulcerative bronchitis in the flu. Confluent focal pneumonia. Fibrinous pleuritis. Chronic bronchitis Pulmonary emphysema Pulmonary keratinizing squamous cell carcinoma. Metastases of undifferentiated pulmonary carcinoma into the heart Bronchiectasis with pneumosclerosis. Chronic diffuse pulmonary emphysema. Right ventricular hypertrophy of the heart (pulmonary cord). Central lung carcinoma (perihilar). Peripheral lung carcinoma.	2	1	1

15	Specific infections: Tuberculosis and Syphilis. Pathogenesis and typical lesions in tuberculosis. Comparative morphological changes in different forms of tuberculosis. Primary, secondary and progressive tuberculosis. Complications of each type of tuberculosis. Syphilis: stages of development and morphologic features. **Specimens to be studied**: Miliary lung's tuberculosis. Miliary liver's tuberculosis. Renal milliary tuberculosis. Caseous pneumonia. Fibro-cavitary lung tuberculosis. Tuberculosis of mediastinal lymphatic nodes. Tuberculous spondylitis Syphilic aortic aneurysm. Syphilitic mesaortitis	2	1	1
16.	**TEST nr. 2:** ***(topics 8,9, 10, 11, 12, 13, 14, 15)***	2	1	1
17.	Tumour-like lesions of the oral soft tissue. Surfaces alteration: red and white lesion. Benign developmental growths: causes (etiology; pathogenesis), cell or tissue origin. **Specimens to be studied:** Fibroepithelial polyp Pyogenic granuloma Peripheric giant cell granuloma Irritation hyperplasia Chronic hyperplasic candidiasis Benign hyperplasia with/without hyperkeratosis	2	1	1
18.	Dental and odontogenic dental tumours: benign and malignant neoplasms of inconstant aggressiveness: etiology, pathogenesis and clinical correlation. **Specimens to be studied:** Ameloblastoma Calcifying epithelial odontogenic tumour / Squamous odontogenic tumour/ Adenomatoid odontogenic tumour Odontogenic myxoma Central odontogenic fibroma Ameloblastic fibroma Odontoma	2	1	1
19.	Mucosal lesions with malignant potential and malignant lesions: causes, histopathological types and principle of diagnosis. Models determining the value of a population based oral cancer screening programme, as a health promotion strategy. **Specimens to be studied:** Mild dysplasia Moderate dysplasia Severe dysplasia/ca in situ	1	1	1

	Oral squamous cell carcinoma well differentiated Oral squamous cell carcinoma poor differentiated			
20.	Benign oral soft tissue tumours: clinical and pathological differences, growth variation and prognosis. **Specimens to be studied:** Papillom Fibrom - fibroepitelial polypp Lipom Periferic ossifying fibrom Granular cell tumour Nevrofibrom/Schwannom/Amputasjonsnevrinom	1	1	1
21.	Red-blue and pigmented lesions: local and systemic factors of development, histopathological types, evolution and prognosis. Physiological and pathological pigmentation. Benign and malignant vascular tumours. **Specimens to be studied:** Angiom Lymphangiom Amalgam tattoo Nevus Melanoma	1	1	1
22.	Autoimmune and vesicular-bullous diseases: common pathogenic mechanisms. Blister and secondary erosions pathologic features. Oral manifestation of the Systemic Lupus Erythematosus. **Specimens to be studied:** Lichen planus Lichenoid reaction Pemfigus Pemfigoid Erytema multiforme	1	1	1
23.	Salivary gland pathology: benign and malignant lesions, classification. Childhood infections that affect salivary glands. Tumours classification and prognosis. **Specimens to be studied:** Mucous retention phenomenon (mucocele) Mucous retention cyst Pleomorphic adenoma Basal /canalicular cell adenoma Mucoepidermoid carcinoma Sjogren syndrome	1	1	1
24.	***TEST nr. 3; Topics (17,18,19,20,21, 22,23)***	1	1	1
25.	Pathology of tonsils, esophagus, stomach: Congenital anomalies, infections, inflammatory and vascular disorders. Tumours of the esophagus, stomach. Diseases of the peritoneum. **Specimens to be studied**: Acute gastric ulcer. Chronic gastric ulcer in aggravation. Gastric adenocarcinoma.	1	1	1

	Metastases of gastric carcinoma into lymph node. Esophageal carcinoma. Gastric Polyp. Chronic gastric ulcer. Chronic gastric ulcer with perforation. Chronic duodenal ulcer. Gastric carcinoma.			
26.	**Intestinal pathology**. Congenital anomalies, infections, inflammatory and vascular diseases, tumours of the small intestine, colon, appendix, and anal canal. Diseases of the peritoneum. **Intestinal infections**: typhoid fever, salmonellosis, cholera, dysentery. **Specimens to be studied**: Acute suppurate appendicitis. Chronic appendicitis. Appendicular tumour of low malignant potential. Mucinous carcinoma of the colon (signet-ring cell. Hyperplasia of mesenteric lymph node in typhoid fever. Pseudomembranous colitis. Acute ulcero-phlegmonous appendicitis with peri-appendicitis. Carcinoma of sigmoid colon. Encephaloid modifications of Payer patches in typhoid fever. Ulcerative-fibrous colitis in dysentery.	1	1	1
27.	**Pathology of liver and gall bladder:** Viral and non-viral hepatitis, morphological changes. Jaundice: Etiology, morphological changes and consequences. Hepatic cirrhosis: classification, morphology, consequences. Portal hypertension. Liver and gallbladder ducts tumours. **Specimens to be studied:** Acute toxic dystrophy of the liver. Viral hepatitis, acute cyclic form. Liver micronodular cirrhosis. Hepatocellular carcinoma on the background of liver cirrhosis. Acute massive necrosis of liver (toxic dystrophy). Cancer metastasis into liver. Gallstones in the gallbladder.	1	1	1
28.	**Pathology of the kidneys and urinary tract:** Congenital abnormalities of the kidneys and urinary tract. Classification of kidney disorders, kidney syndromes and their manifestations. Diseases that affect glomeruli, tubules, interstitium, and blood vessels. Renal tumours **Specimens to be studied:** Rapidly progressive (crescentic) glomerulonephritis. Chronic glomerulonephritis. Chronic pyelonephritis. Clear Cell Nephrocellular Carcinoma (H-E stain). Acute glomerulonephritis. Renal amyloidosis. Wrinkled kidney. Renal stones. Hydronephrosis. Renal polychistosis.	1	1	1

	Renal carcinoma. Bladder carcinoma.			
29.	**Male genital pathology:** Congenital anomalies, inflammations and tumours of the ureter, urethra, penis, testicular and epididymal. Inflammation, hyperplasia and prostate tumours. **Pathology of the female genital system, including obstetrical pathology and post-partum period**: Embryology, anatomy, physiology and histology of the female genital tract. Congenital anomalies, inflammations and tumours of the vulva, vagina, cervix, uterus, fallopian tubes and ovaries. Gestational and placental disorders. Breast inflammation, benign epithelial lesions and breast tumours. **Specimens to be studied:** Prostatic adenocarcinoma on benign prostatic hyperplasia background Testicular seminoma. Glandular prostatic hyperplasia with urinary bladder wall hypertrophy. Simple endometrial hyperplasia. Endometrial polyp. Uterine body carcinoma. Cervical carcinoma. Ovarian dermoid cyst. Ovarian carcinoma. Mammary carcinoma.	1	1	1
30.	**Endocrine system pathology and nutritional diseases (obesity):** Normal hormonal levels and functions of all endocrine glands. Hypo and hyperactivity of endocrine system glands: pituitary, thyroid, parathyroid, pancreas, adrenal glands and pineal gland. Autoimmune diseases, inflammations and tumours affecting these glands. **Specimens to be studied:** Colloidal goitre. Thyrotoxic goitre (Grave's disease) Chromophob adenoma of hypophysis. Diabetic (nodular) glomerulosclerosis Diffuse goitre. Adrenal gland adenoma.	1	1	1
31.	***TEST nr. 4 Topics: 25,26,27,28,29,30***	1	1	1
32.	**Central Nervous System Pathology.** Vascular disorders. Infectious disorders of the nervous system. CNS tumours classification. **Specimens to be studied:** Brain haemorrhage Hydrocephaly Cerebral edema Leptomeningitis Glioblastoma	1	1	1
33.	**Sepsis:** forms of sepsis, etiological classification. Sepsis. Sepsis sever. Toxic-septic shock. Head and neck sepsis. Morphological features and clinical correlations. Complications and causes of death. **Specimens to be studied:** Septic endocarditis	1	1	1

	Purulent leptomeningitis Kidney abscesses Purulent embolic nephritis Odontogenic cellulitis Septic rush			
34.	**Totals**	1	1	1
		51	**34**	**31**
		116		

IV. REFERENCE OBJECTIVES OF CONTENT UNITS

Objectives	Content units
Theme (chapter) 1. „Cell pathology. Reversible and irreversible cell lesions "	
• Understanding the concept, defining the morphological changes of degeneration and necrosis. • Understanding the concept and morphological changes of atrophy, hypertrophy, hyperplasia and metaplasia. • Understanding causality and atrophy variants. • Knowing the causes and structural changes of tissue and cellular lesions. • Understanding the concept of regeneration and repair, morphology and function of granulation tissue, types of wound healing, and regeneration. • Understanding the concept of tissue regeneration, the basic process of wound healing. • Knowing the factors that affect wound healing.	Ultrastructural changes of cellular lesions. (individual study) Causes of cellular lesions and death. Concept, types, morphological changes of atrophy. Concept and morphological changes of degeneration, hydropic degeneration, lipid, hyaline, fibrinoid, amyloid. Concept and types of necrosis, pathological changes and consequences of necrosis. Concept of adaptation, hypertrophy, hyperplasia, metaplasia. The concept of regeneration and repair, the capacity and process of tissue regeneration. The concept, morphology and function of the granulation tissue and the concept of organization. The wound healing process, the specific of skin healing and the healing of bone fractures. Factors for wound healing.
Theme (chapter) 2. Acute and chronic inflammation	
• Understanding the concept, basic pathological changes and classification of inflammation, classification and mediatory effects of inflammation, classification and pathological changes of inflammation. • Understanding the systemic effects of inflammation • Knowledge of causes and significance of	Definition and causes of inflammation, fundamental lesions and pathogenesis of inflammation (alteration, exudation and proliferation), mediators of inflammation. local signs and systemic effects of inflammation. Morphological classification of inflammation: altered inflammation, exudative inflammation and proliferation of inflammation. Variations of inflammation: acute inflammation -

inflammation.	serous, fibrinous, purulent and haemorrhagic; chronic inflammation - basic pathological changes: concept, classification and pathological changes of granulomatous inflammation. Consequences of the process and the significance of inflammation.
Theme (chapter) 3. Haemodynamic disorders	
• Understanding the concept of congestion, the characters of hepatic and lung congestion, the concept of thrombosis, embolism and infarction, the conditions and consequences of thrombosis, the variants and the morphology of the infarction. • Understanding the concept of active hyperemia, embolus pathways, types of embolism and effects on the body. • Know the causes of congestion and infarction, the concept, causes and consequences of bleeding.	Concept and types of hyperemia, causes, morphology and consequences of congestion, pathological changes of chronic pulmonary and hepatic congestion. Concept, conditions, mechanism of thrombosis, morphological evolution and effects of thrombosis. The concept of embolism, types of embolism and effects on the body. Concept of causes and infarct morphology. Concept causes and types of haemorrhage.
Theme (chapter) 4. Tumours	
• Definition of neoplasia and malignant cell properties. • Classification of tumours based on their clinical behaviour and histopathological characteristics. • Description of benign and malignant tumours and local and systemic adverse effects of tumours on the host. • Defining metastases and explaining their pathogenesis. • Nomenclature and forms of carcinoma and sarcoma. • Familiarize yourself with the degree and stage of cancer. • Nomenclature of tumours and pseudotumoural processes. • Understanding the role of oncogenes in cancer. Discuss environmental carcinogens that could affect the population.	Neoplasm concept, tumour nomenclature, tumour characteristics (tumour architecture, atypia, histological grade), biological changes of cancer cells, tumour growth (growth rate, mode and spread), tumour effects on the host, etiology and pathogenesis of cancer, of the tumour, comparison of benign and malignant tumours, comparison of carcinoma and sarcoma, precancerous lesions and intraepithelial tumoural lesions, frequent forms of benign and malignant tumours (carcinoma and sarcoma).
Theme (chapter) 5. Pathology of the central and peripheral hematopoietic system	
• Defining anemia, leukemia and lymphoma, their classification. • Discussing the different types of Hodgkin and non-Hodgkin's lymphoma, understanding the underlying pathological changes reported in clinical symptoms. • Discussing the different types of leukemia and understanding the underlying pathological changes reported in clinical symptoms.	Anemia. Causes, pathogenesis, types, classification. Anemia because of haemorrhage (post-hemorrhage), impaired blood circulation and hemolysis (haemolytic). Morphological features. Tumours of the hematopoietic system, hemoblastosis. Classification. Leukemia as a systemic tumour disease of hematopoietic tissues. Causes, pathogenesis, morphological characteristics. Acute leukemia, its types. Chronic myelocytic and lymphocytic leukemia. Hodgkin's disease. Plasmocytoma.
Theme (chapter) 6: Pathology of the cardiovascular system.	
• Description of pathogenesis, pathophysiology and symptoms of coronary	Endocarditis. Bacterial endocarditis (septic) (refers to sepsis). Endobaric parietal endocarditis with

vascular disease and atherosclerotic peripheral disease. • Description of major pathological lesions of atherosclerosis and major complications. • Description of microscopic features and complications of myocardial infarction and correlation of these pathological findings with clinical and paraclinical symptoms. • Discussing the pathogenesis of rheumatic heart disease and describing the typical cardiac lesions of rheumatic fever. • Description of pathogenesis and pathological changes of hypertension. • Identification of variants of valvular heart disease, such as aortic stenosis, mitral regurgitation, and mitral mitral (rheumatoid) stenosis. • Description of hypertension and its effects on organs of vital importance.	eosinophilia. Causes, mechanisms of development, morphology, consequences. Cardiosclerosis. Causes, mechanisms of development, morphology variants. Atherosclerosis and hypertension: etiology and pathogenesis. Pathological anatomy. Stages of atherosclerosis. Clinical-morphological forms and their characteristics, Causes of death. Atherosclerosis and myocardial infarction, their correlation. Ischemic heart disease (coronary artery disease). The concept of heart disease. Myocardial infarction. Morphology of acute, repeated and repeated myocardial infarction. Complications, Causes of Long. Chronic ischemic heart disease. Morphological characteristics, complications, Causes of death. Primary and secondary cardiomyopathy. Causes, pathogenesis.
Chapter 7: Oral-Maxillofacial Pathology	
• Recognize the clinical significance of gingivitis of hereditary fibromatosis • Identification and description of tongue development disorders. • Differentiate and identify causes of wear, abrasion and erosion Difference between knowing the meaning of developmental teeth disorders • Describe and recognize the dental structure disorders • Explain the inter-relationship between streptococcal pharyngitis and rheumatic fever. • Describe and know the difference between periapical abscess, periapical granuloma, periapical cyst. • Describe and recognize major changes to Paget's disease. • Describe and recognize major changes in fibrous dysplasia. • Describe and recognize the major changes of the ,**'heruvism''** • To recognize the mucocelle, the pleomorphic adenoma, the salivary gland carcinoma • Define the term "cyst" and classify cysts of oral regions as odontogenic and non-dendogenic. • Describe the clinical and radiological characteristics of the radicular cyst (periapic cyst) and display its relationship to periapical granuloma. • Recognize aetiology, clinical features, radiographic features (as appropriate)	**DEVELOPMENT DEFECTS:** of the oral cavity organs: including microdontia, macrodontia, gemina, fusion, concrescence, dilaceration, dense dentures, supernumerary roots and teeth, anodontia (complete / partial), dentistry / neonatal mesiodens. Dental structure disorders: amelogenesis imperfecta, dentinogenesis imperfecta, enamel hypoplasia, Hutchinson triad incisors, **ORAL INFECTIONS** Specific and non-specific oral infections: primary herpetic gingivostomatitis, herpes simplex oral candidiasis. **PERIAPIC PATHOLOGY** Abscess, granuloma and periapical cyst morphological particularities and complications. Describe other sequelae (other than periapical granuloma, abscess or cyst) that may appear from the pulp. **SALIVARY GLANDS PATHOLOGY** Morphological changes in mucocell, sialalite, pleomorphic adenoma. **PATHOLOGY OF ORAL CAVITY BONES** **ODONTOGENIC CYST AND** **a. the primary cyst** **b. dental cyst** **c. cyst eruption** **d. residual cyst** **e. Parodontal lateral cyst** **f. gingival cyst** **g. odontogen keratocyst** NON-ODONTOGENIC CYSTS A. nasopalatine cyst b. palatin cyst median

for all non-odontogenic cysts. To be able to perform differential diagnosis in different odontogenic and non-odontogenic tumours	c. Globulomaxilar cyst d. the nasal vesicular cyst e. manicular cystic environment f. lymphoepithelial cyst (branched-crack cyst) g. Chist dermoid h. tirogenosal chist duct ODONTOGENIC TUMOURS Morphological picture causes and complications of the following tumours: a. ameloblastoma b. Pindborg Tumour c. Odontogenic mixoma d. periapical cement dysplasia e. fibrodisplasia f. cementoblastoma g. odontoma
Theme (chapter) 8: Respiratory system pathology	
• Know clinical situations associated with affecting defence mechanisms. • Know the 4 classic stages of lobar pneumonia. • Know the character, cause, and typical involvement of bronchopneumonia. • Identify the correlation between COPD, air pollution and smoking. • Identify the morphological changes associated with chronic bronchitis and emphysema. • To compare and correlate pathological changes in emphysema and bronchiectasis. • Know the histological types of lung cancer. • Know the pathogenesis and prognosis of lung cancer.	**Acute Pulmonary Pathology:** Acute Bronchitis. Causes and mechanisms of development. Classification. Morphological features. Pneumonia: Lumbar pneumonia and bronchopneumonia. Etiology, pathogenesis, pathological anatomy. Atypical forms. Complications. Acute destructive processes in the lungs. Abscess, gangrene. Pathogenesis, morphology **Chronic pulmonary pathology**: Classification. Chronic bronchitis, bronchiectasis, pulmonary emphysema, bronchial asthma, chronic abscess, interstitial lung disease. Etiology, pathogenesis. Pathological anatomy of nosologic forms. Chronic pulmonary cord. Lung cancer. Frequency of occurrence, etiology, pathogenesis. Precancerous conditions. Clinical-morphological characteristics. Morphology of central and peripheral lung cancer. Pleurisy. Causes, mechanism of development, morphology, consequences.
Theme (chapter) 9: Pathology of the infectious process. Tuberculosis. Syphilis and AIDS	
• To determine the role of the host cell in bacterial infections. • What are the ways bacteria can destroy cells and / or cause tissue damage. • What bacterial infections develop during childhood? • Be able to explain the emergence of new strains of drug-resistant microbial agents. • Identification of structural elements of tuberculoma. • Identification of forms of tuberculosis based on the morphological picture and its correlation with clinical manifestations. • Identifying the consequences of tuberculosis.	Acute respiratory infections: flu, paragripa. Epidemiology. Etiology, pathogenesis, pathological anatomy, complications, causes of death. Bacterial infections: meningococcal infection, diphtheria, scarlet fever. Etiology, epidemiology, pathogenesis, pathological anatomy, complications, causes of death. Tuberculosis. Etiology, pathogenesis. Classification. Primary, secondary and progressive tuberculosis. Pathological anatomy, complications, causes of death. Pathomorphosis of tuberculosis. Primary and secondary immunodeficiency syndromes. Clinical and morphological characteristics. HIV-infection. Syphilis: stages of evolution, morphological changes.

•Identification of oral syphilis and secondary rashes at head and neck level	with oromaxilofacial manifestation
Theme (chapter) 10: Pathology of the digestive system	
• Define the general categories of oesophageal disorder. Determination of esophagitis variants according to the morphological picture. • Define the morphology of gastritis. • To know 2 types of gastric carcinoma. • Define the morphology of acute and chronic gastric ulcer, the etiology and complications of ulcers. • To know the aspects of intestinal ischemic disease: macroscopic and microscopic features, complications (gangrene, perforation, peritonitis). • Can differentiate Crohn's disease and ulcerative colitis from a morphological point of view and correlate with clinical manifestations. • To know the polyp-cancer morphology. • Colon cancer: Macroscopic, microscopic features and clinical features of colon adenocarcinoma.	The esophagus pathology. Barett's esophagus and its clinical importance. Morph Functional Changes and Consequences. Acute and chronic gastritis. Causes, mechanism of development, morphological forms, their characteristics. Complications. Ulcer disease of the stomach and duodenum. Frequency of occurrence, etiology. Complications, consequences. Gastric cancer. Poor conditions. Clinical-morphological characteristics. Histological types. Metastasis features. Nonspecific ulcerative colitis. Causes, mechanisms of development, pathological anatomy, complications. Crohn's disease. Causes, mechanisms of development, pathological anatomy, complications. Intestinal tumours. Frequency of occurrence, etiology, pathogenesis. Forms, morphological features, regularities of metastases, complications. Peritonitis.
Theme (chapter) 11: Pathology of liver and pancreas	
• Morphologically describe the forms of alcoholic hepatitis: lipid degeneration, hepatitis and cirrhosis. • To differentiate the pathology of nonalcoholic lipid degeneration (NALD) and non-alcoholic steatohepatitis (NASH) with alcoholic liver disease and hepatitis C infection. • Know the microscopic characteristics of cirrhosis and their clinical significance. • Differentiate the two morphological variants of micronodular and macronodular cirrhosis and understand why such classification can be clinically misleading. • To differentiate the pathology of acute hepatitis, fulminant and chronic hepatitis. • Know the morphological features of liver carcinomas. Metastatic liver carcinomas.	Hereditary and acquired, acute and chronic hepatosis. Etiology, pathogenesis, pathological anatomy, complications. Acute fulminant necrosis of the liver and liver cirrhosis, correlations and consequences. The role of alcohol in the development of liver steatosis. Pathological anatomy, complications, consequences. Acute and chronic, primary and secondary hepatitis. Hepatitis viral. Classification of viral hepatitis. Etiology and pathogenesis. Clinical and morphological forms. Complications, consequences. Hepatitis and hepatic cirrhosis. Alcoholic hepatitis. Acute and chronic. Mechanisms of development, morphological features, complications, consequences. Hepatic cirrhosis. Etiology, pathogenesis and morphogenesis. Classification. Types of cirrhosis, their morphological characteristics. Complications. Hepatolienal Syndrome Portative Hypertension Syndrome. Causes of death. Hepatic cancer. Acute and chronic pancreatitis. causes, mechanisms of development, pathological anatomy, complications. Cancer of the pancreas. Causes, the mechanism of development.
Theme (chapter) 12: Pathology of the urinary system	
• Know the main causes and mechanisms that cause acute renal failure. • Describe uremic syndrome and the possible mechanisms that cause its clinical manifestations.	Glomerulonephritis. Modern classification. Etiology, pathogenesis. Immunomorphological characteristics of different forms of glomerulonephritis. Acute renal failure - necrotic nephrosis. Causes,

• Understand the pathogenesis of glomerulonephritis • Define nephrotic syndrome and know the clinical and morphological features of diseases that cause nephrotic syndrome. • Know the clinical and morphological characteristics of acute and chronic pyelonephritis. • Know major clinical syndromes with which a patient with kidney problems may be present. • Know major glomerular clinical syndromes. • How does fibrosis differ in chronic pyelonephritis compared to chronic glomerulonephritis or long-term benign hypertension? • Know the macroscopic difference between adenoma and nephrocellular carcinoma.	pathogenesis, morphological features, complications, consequences. Chronic obstructive tubular disease. Paraproteinemic nephrosis. Pathogenesis, morphology, complications, consequences. Tubulo-interstitial nephritis. Etiology, pathogenesis, pathological anatomy, complications, consequences. Acute and chronic pyelonephritis. Etiology, pathogenesis, pathological anatomy, complications, consequences. Nephrolithiasis. Etiology, pathogenesis, pathological anatomy, complications, consequences. Interconnection with pyelonephritis. Particularities of nephrolithiasis in children. Renal tumours. Nephrocellular carcinoma. Causes, morphological features.
Theme (chapter) 13: Pathology of the male genital system	
• • To know the etiological factors in acute bacterial prostatitis, chronic bacterial prostatitis. • • Know the causes and consequences of prostate tumours. • • Classification of testicular tumours. Compare the morphology of the two major types of testicular tumours in germ cells: • • Know the pathological and clinical features of nodular hyperplasia or benign prostatic hyperplasia. • To know the pathological features and clinical features of prostatic carcinoma and the concept of classification and prognosis for prognosis..	Prostate hypertrophy (dishormonal hypertrophic prostateopathy). Forms, morphological features. Complications. Prostate cancer. Frequency. Causes. Morphological features. Complications. Testicular cancer. Classification. Morphological features. Complications. Tumours of epididymis, spermatic cords and testicular membrane. Morphology. Syphilis. Etiology, pathogenesis. Primary, secondary, tertiary syphilis. Syphilis congenital (early, late). Visceral Syphilis. Pathological anatomy, complications, causes of death.
Theme (chapter) 14: Pathology of the female genital system. Mammary gland	
• To know LSIL and HSIL, glandular and cervical squamous neoplasia. • What is the difference between CIN 3 and invasive carcinoma? • Classification of malignant ovarian tumours, tumours associated with endometriosis. • Knowing the significance of borderline ovarian tumours. • Understanding the classification of endometrial hyperplasia and the clinical implications of simple / complex hyperplasia with / without cytological atypia. • To differentiate the complete and incomplete hydatidiform moles with regard to: histology and clinical correlation. • Know the most common precursor lesions of gestational trophoblastic disease. • To differentiate the following mammary gland tumours: fibroadenoma, fibroid tumour, intraductal papilloma.	Endometrial glandular hyperplasia. Morphological features, complications. Acute and chronic endometritis. Causes, pathogenesis, morphology, complications. Uterine cancer. Frequency of occurrence. Causes. Precancerous conditions. Classification. Morphological characteristics, particularities of cervical cancer and development of uterine cancer. Histological forms. Particularities of metastatic development. Complications. Ovarian cancer. Frequency. Causes. Precancerous conditions. Classification. Morphological features. Histological forms. Particularities of the development of metastases. Complications. Acute and chronic mastitis. Causes, pathogenesis, morphology, complications. Fibrochemical disease of the mammary gland. Classification. Non-proliferative and proliferative forms. Morphological features, complications. Cancer of the mammary gland. Frequency. Causes. Precancerous conditions. Classification. Morphological

	features. Particularities of metastatic development. Abortion, premature labour. Causes, morphological features.
Theme (chapter) 15: Endocrine system pathology	
• To know the morphological, molecular and clinical features of pituitary adenomas, including macroscopic and microscopic image of adenomas, mass-related manifestations, endocrine manifestations, especially those related to growth hormone production, ACTH, prolactin. • To differentiate the main macroscopic, microscopic and clinical features of the following thyroid neoplasms: follicular adenoma, papillary, follicular, medullary carcinoma. • Know the most common causes of primary hyperparathyroidism. • Know the clinical features and the pathogenesis of Graves' disease as a prototype of hyperthyroidism. • To correlate the pathogenesis of the various causes of Cushing's syndrome • Know the morphological changes of various organs, especially: pancreas, small and large vessels, kidneys, retina in diabetes.	**Hypophysis:** Acromegaly. Etiology, pathogenesis. Morphology. Causes of death. Cushing's disease. Etiology, pathogenesis, morphology. Causes of death. **Adiposhogenital dystrophy.** Etiology, pathogenesis, morphology. Diabetes insipidus. Etiology, pathogenesis, morphology. **Adrenal glands**: Addison's disease. Etiology, pathogenesis, morphology. Tumours of the adrenal glands. Types, morphology, complications**.** **Thyroid gland:** Goitre (struma). Classification. Hypothyroidism and atioidiasis. Morphological features. Thyroid gland tumours. Morphology, complications. **Endocrine pancreas:** Diabetes mellitus (sugar disease). Etiology, pathogenesis, pathological anatomy. Macro- and microangiopathy as a manifestation of diabetes. Types of diabetic microangiopathy, morphology; diabetic glomerulosclerosis. Complications. Causes of death. Particularities of the development of diabetes in children (Mauriac syndrome).

V. PROFESSIONAL (SPECIFIC (SC)) AND TRANSVERSAL (TC) COMPETENCES AND STUDY OUTCOMES

✓ Professional (specific) (SC) competences

- Acquiring the method of describing the macroscopic and microscopic lesions.
- Acquiring the method of formulating an anatomopathological (lesion) diagnosis based on the description
- Acquiring the specialized language
- Apply differential diagnosis between different types of lesions according to the study method
- Developing skills in drafting and presenting a specialized report under the required editing conditions
- Assimilation of sampling technique for histopathological examination
- Understanding the role of establishing anatomopathological diagnosis in the context of individual pathology, group pathology, post-mortem examination and research activity
- Understanding the necessity of correlating the anatomopathological diagnosis with other methods of investigation (ultrasound examination, radiological examination, microbiological exam, etc.), finally, the diagnosis being the result of team work
- Awareness of the need for continuous documentation and continuous practice of the acquired techniques
- Awareness of the need to establish an anatomopathological diagnosis in live animals and post-mortem

✓ Transversal competences (TC)

- Improving the capacity of decisional autonomy;
- Forming your personal attitude
- Ability to social interaction, group work with different roles
- Fitting in interdisciplinary projects, extracurricular activities,
- Improving digital skills
- Developing different learning techniques
- Selection of digital materials, critical analysis and conclusions.
- Presentation of individual scientific projects.

- **DISCIPLINE FINALITY**
- Demonstrate professionalism and high ethical standards in all aspects of medical practice, especially competence, honesty, integrity, compassion, respect for others, professional and social responsibility;
- Demonstrate the proper use of laboratory tests and radiographic studies in making diagnostic decisions.
- Demonstrate the ability to assess patient medical problems and make accurate assumptions for diagnosis and treatment decisions.
- Demonstrate the ability to acquire new information and data and critically assess their validity and applicability in professional decision-making, including the application of information technology systems to support clinical decision-making.

VI. STUDENT'S SELF-TRAINING

No.	Expected product	Implementation strategies	Assessment criteria	Implementation terms
1	Work with information sources	Careful reading of lecture or the textbook material on the theme. Reading the questions on the theme, that requires a reflection on the subject. Refer to the list of additional information sources on the theme. Choose the source of additional information on the theme. Reading of the text entirely, carefully and writing down the essential content. Making generalizations and conclusions related to the importance of the theme/subject.	The ability to extract the essential; skills to interpret; the volume of work	throughout the semester
2	Working with the workbook	To analyse the information and the images on the theme based on the material from lectures and textbook. Consistent solving the tasks. Drawing conclusions at the end of each lesson. The verification of the aims of the lesson in question and assessment of their achievement. Searching for additional information, using E-mail addresses and additional bibliography.	The volume of work, solving situational problems, the ability to draw conclusions	throughout the semester
3	***Application of various learning techniques***		The volume of work, the degree of penetration into the essence of various themes, the level of scientific argumentation, quality of conclusions, elements of creativity, demonstration understanding the problem, formation of	throughout the semester

No.	Expected product	Implementation strategies	Assessment criteria	Implementation terms
			personal attitude	
4	***Working with materials online***	Self-assessment online, study of materials online on the WEBSITE of the department, expressing one's own opinions through the forum and chat	The number and duration of entries on the SITE, the results of self-assessment	throughout the semester
5	***Preparation and presentation of research***	Choice of the theme for research, making plan the research plan, provision of the terms of realization. Setting PowerPoint project / theme components, purpose, results, conclusions, practical applications, bibliography. Reviews of. Peers. Reviews. Of professors and lecturers	Volume of work, the degree of penetration into the essence of the theme of the project, the level of scientific argumentation, the quality of conclusions, elements of Creativity, personal attitude formation, coherence of exposure and scientific correctness, graphic presentation, presentation method.	throughout the semester

VII. METHODOLOGICAL SUGGESTIONS FOR TEACHING-LEARNING-ASSESSMENT

- ***Teaching and learning methods used***

The teaching of the morphopathology discipline uses different methods and didactic methods designed to achieve and effectively realize the objectives of the didactic process. In the theoretical lessons, with the help of traditional methods (lesson-exposure, lesson-conversation, and synthesis lesson) are used and modern methods (lesson-debate, lesson-conference, problem lesson). Practical work uses forms of individual activity, in group, situation issues. In order to acquire deeper materials, different semiotic systems (scientific, graphic and computerized language) and teaching materials (tables, schemes, micro photographers) are used. Courses and extracurricular activities include Communication Technologies - PowerPoint presentations, on-line lessons.

- ***Recommended learning methods***
- **Observation** - Identification of characteristic elements in different pathologies, comparison of normal and pathological structures.
- **Analysis** - Imaginary decomposition of the whole into component parts. Highlighting the essential elements. Studying each element as part of the whole.
- **Schema / figure analysis** - Selection of required information. Recognition based on knowledge and information selected structures indicated in the scheme, drawing. Analysis of the functions / role of recognized structures.
- **Comparison** - Analysis of the first object / process in a group and the determination of its essential features. Analysis of the second object / process and the determination of its essential features. Comparing objects / processes and highlighting common features. Comparing objects / processes and determining differences. Setting criteria for differentiation, which underlies the differential morphological diagnosis between several pathological processes. Formulation of conclusions.
- **Classification** - Identify the structures / processes needed to be classified. Determining the criteria on which classification is to be made. Distribution of structures / processes by groups according to established criteria.
- **Schematic drawing** - Selection of elements to be included in the scheme. Playing the elements selected by different symbols / colours and indicating their relationships. Wording of an appropriate title and legend of the symbols used.
- **Modelling** - Identify and select the elements needed to model the phenomenon. The imaging (graphical, schematic) of the studied phenomenon. Realizing the phenomenon using the developed model. Formulation of conclusions, based on arguments or findings.
- **Experiment** - Formulation of a hypothesis, based on known facts, on the process / phenomenon studied. Verifying the hypothesis by performing the processes / phenomena studied under laboratory conditions. Formulation of conclusions, deduced from arguments or findings.

- ***Applied teaching strategies / technologies*** *(specific to the discipline)*

„Brainstorming", „Multi-voting"; "The round table"; "Group Interview"; "Case Study"; "Creative Controversy"; "Focus-group technique", "Portfolio".

Virtual Practices

• Methods of assessment (including an indication of how the final grade is calculated).

Current: front and / or individual control
- (a) applying docimological tests,
- (b) solving problems / exercises,
- (c) analysis of case studies
- (d) performing role-plays on the topics discussed.
- (e) control work

• **Final:** Exam

•The final mark will consist of an average grade of four totalizations (each of them consisting of test exam and practical skills), computerized test and practical skills exam (part 0.5), final test in computerized system (share 0.5).

The average annual mark and the marks of all stages of final examination (computer assisted, test, oral) - are expressed in numbers according to the mark scale (according to the table), and the final mark obtained is expressed in number with two decimals, which is transferred to student's record-book.

Method of mark rounding at different assessment stages

Intermediate marks scale (annual average, marks from the examination stages)	National Assessment System	ECTS Equivalent
1,00-3,00	**2**	**F**
3,01-4,99	**4**	**FX**
5,00	**5**	**E**
5,01-5,50	**5,5**	
5,51-6,0	**6**	
6,01-6,50	**6,5**	**D**
6,51-7,00	**7**	
7,01-7,50	**7,5**	**C**
7,51-8,00	**8**	
8,01-8,50	**8,5**	**B**
8,51-8,00	**9**	
9,01-9,50	**9,5**	**A**
9,51-10,0	**10**	

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Absence on examination without good reason is recorded as "absent" and is equivalent to 0 (zero). The student has the right to have two re-examinations.

VIII. RECOMMENDED LITERATURE:

A. Compulsory:

1. Materialele prelegerilor
2. Ie. Zota, V. Vataman. Morfopatologie generală, Chișinău, 2014
3. Oral Pathology: Clinical Pathologic Correlations Mar 10, 2016
by Joseph A. Regezi DDS MS and James Sciubba DMD PhD
4. Robbins and Cotran. Pathologic basis of disease 6, 7, 8th editions
5. Harsh Mohan. Textbook of Pathology, 6th edition, New Delhi, 2010
6. Klatt, Edward C. Robbins and Cotran Atlas of Pathology, 2th ed., Elsevier, 2010
7. A. Strukov, V. Serov. Anatomia patologică, Chișinău, 1999

B. Additional

1. E.Rubin-J.L.Farber: Pathology (J.B.Lippincott 1994). · 3rd edition (1999)
2. Nemes Z. Atlas of Histopathology (TEMPUS edition, Debrecen 1998) CP. L. Wheater, H.G, Burkitt, Stevens J.S. Lowei.: Basic Histopathology a Colour Atlas and Text. (Churchill Livingstone;
3. 4Rev Ed edition, 2002)

C. WEB:

General Informations: www.path2.sote.hu
Online available case center: http://casecenter-korb2.sote.hu/casecenter/
User name and password for Java version: student_jav
Panoramic Viewer free download: http://www.3dhistech.com/
Practice test: http://casecenter-korb2.sote.hu/espractice/

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