THEMATIC PLAN OF PRACTICAL CLASSES IN PATHOLOGICAL PHYSIOLOGY

for 3rd year students of **FIS (second set)**
Educational Institution «Gomel State Medical University»
for **VI semester 2026/2027 academic year**

№ п/п	Наименование тем, содержание практических занятий	Кол-во часов, дата
19.	**Pathophysiology of erythrocytes. Dyserythropoietic anemias** 1. Pathological forms of erythrocytes, pathological inclusions in erythrocytes. 2. Dyserythropoietic anemias: types, causes, mechanisms of development, manifestations in the organs of hematopoiesis and in the peripheral blood. 3. Iron deficiency anemias: etiology, pathogenesis, clinical manifestations, features of the peripheral blood picture. 4. Anemias due to lack of vitamin B12 and folic acid, erythropoietin deficiency. 5. Achrestic anemias. 6. Aplastic anemias: types, causes and mechanisms of development. 7. Anemias in leukemia and other tumor lesions of the bone marrow. Anemias of chronic diseases.	**3** **01.09.26-05.09.26**
20.	**Hemolytic anemia. Erythrocytosis** 1. Hemolytic anemia: types, causes, mechanisms of development, manifestations in the hematopoietic organs and in the peripheral blood. 2. Hereditary, acquired, autoimmune hemolytic anemia. 3. Primary and secondary erythrocytosis: causes, mechanisms of development, manifestations in the hematopoietic organs and in the peripheral blood. 4. Disorders and compensatory-adaptive processes in the body with anemia and polycythemia. 1. 5. Methods for diagnosing anemia and erythrocytosis.	**3** **07.09.26-12.09.26**
21.	**Pathology of the leukon system. Changes in the quantitative and qualitative composition of leukocytes** 1. Disorders of the structure and functions of individual types of leukocytes, their role in pathology. 2. Leukocytosis, leukopenia, their types, mechanisms of development. 3. Agranulocytosis: types, etiology, pathogenesis, picture of peripheral blood and bone marrow, consequences for the body. Panmyelophthisis. 4. Leukemoid reactions: types, etiology, pathogenesis, changes in the organs of hematopoiesis and in the peripheral blood, outcomes, differences from leukemia, significance for the body. 5. Methods for diagnosing typical disorders of the leukon system. 6. Counting the number of leukocytes in a unit of blood volume, clinical significance. 7. Counting the leukocyte formula and its assessment, determining the nuclear shift index, clinical significance. 8. Changes in the leukocyte formula, pathogenetic assessment of disorders.	**3** **14.09.26-19.09.26**
22.	**Hemoblastoses. Leukemia** 1. The concept of hemoblastoses. 2. Leukemia: definition, general characteristics, classification. 3. Etiology of leukemia, the role of viruses, ionizing radiation, chemical carcinogens. 4. Pathogenesis of leukemia, the role of oncogenes. 5. Features of peripheral blood and hematopoiesis in different types of leukemia. 6. Mechanisms of the main disorders in the body in leukemia. 7. Methods for diagnosing leukemia.	**3** **21.09.26-26.09.26**
23.	**Pathology of the hemostasis system** 1. Disorders of the hemostasis system. 2. Classification, etiology, pathogenesis of thrombophilic and hemorrhagic	**3** **28.09.26-**

	hemostasiopathies. 3. Disorders of platelet-vascular hemostasis. 4. Vasopathies, thrombocytopenia, thrombocytosis, thrombocytopathy: types, causes, mechanisms of development, manifestations. 5. Hereditary and acquired disorders of coagulation hemostasis: etiology, pathogenesis, manifestations. 6. Disseminated intravascular coagulation (DIC syndrome): principles of classification, causes, stages and mechanisms of development, principles of diagnosis. 7. Clinical and laboratory diagnostics of hemostasis disorders. Methods of diagnostics of platelet-vascular and coagulation hemostasis disorders, their clinical significance.	**03.10.26**
24.	**Control Lesson №3:** 1. Pathophysiology of the blood system. Changes in total blood volume. Blood loss 2. Pathophysiology of erythrocytes. Dyserythropoietic anemias 3. Hemolytic anemia. Erythrocytosis 4. Pathology of the leukon system. Changes in the quantitative and qualitative composition of leukocytes 5. Hemoblastoses. Leukemia 6. Pathology of the hemostasis system	**3** **05.10.26-10.10.26**
25.	**Pathophysiology of the cardiovascular system. Heart disorders** 1. The concept of circulatory failure, its forms, causes, hemodynamic parameters and manifestations. 2. Heart failure: definition of the concept, types. 3. Overload and myocardial forms of heart failure: types, etiology, mechanisms. 4. Urgent and long-term mechanisms of compensation for heart failure. Mechanisms of decompensation. 5. Principles of therapy and prevention of heart failure. 6. Coronary insufficiency: types, clinical forms. Ischemic heart disease: forms, causes, mechanisms of development, complications and outcomes. 7. Heart rhythm disorders (arrhythmias), types. Disorders of general and coronary circulation in arrhythmias. 8. Disorders of cardiac automatism, conduction, excitability. Causes, mechanisms, electrophysiological mechanisms, ECG signs. 9. Fibrillation and defibrillation of the heart, the concept of artificial pacemakers.	**3** **12.10.26-17.10.26**
26.	**Circulatory disorders associated with vascular dysfunction** 1. Primary arterial hypertension: definition, classification, etiology, pathogenesis, risk factors. 2. Secondary ("symptomatic") arterial hypertension: types, causes and mechanisms of development. 3. Main hemodynamic indicators for various types of arterial hypertension. 4. Complications and consequences of arterial hypertension. 5. Arterial hypotension: types, causes and mechanisms of development. Hypotonic disease. 6. Diagnosis of arterial pressure disorders. 7. Cerebral circulatory disorders: types, etiology, pathogenesis, main forms of disorders, compensation mechanisms. 8. Functional tests used to assess the state of the cardiovascular system.	**3** **19.10.26-24.10.26**
27.	**Pathophysiology of external respiration** 1. Respiratory failure: classification, stages, manifestations. Dyspnea: types, mechanisms of formation. 2. Alveolar ventilation disorders: types, causes, mechanisms, consequences. 3. Causes and mechanisms of development of respiratory regulation disorders. 4. Pathological forms of respiration: types, mechanisms of development. Diagnostics of pathological types of respiration. 5. Pulmonary blood flow disorders. Local unevenness of ventilation-perfusion relations.	**3** **26.10.26-31.10.26**

	6. Violation of alveolocapillary diffusion: causes and consequences. 7. Causes, mechanisms of development of respiratory distress syndrome of adults (ARDS) and newborns.	
28.	**Pathophysiology of the digestive system** 1. General etiology and pathogenesis of digestive system disorders. 2. Disorders of appetite, taste, salivation, chewing, swallowing, esophageal functions. 3. Causes and mechanisms of development of typical disorders of reservoir, secretory and motor functions of the stomach, their relationship. 4. Gastric ulcer: causes, mechanisms of development, complications. Methods of modeling gastric ulcer. Duodenal ulcer. 5. Disorders of the functions of the small and large intestine. Disorders of the secretory function. Disorders of cavity and parietal digestion. Malabsorption. Maldigestion. 6. Disorders of intestinal motility: diarrhea, constipation, intestinal obstruction. 7. Disorders of the intestinal barrier function; intestinal autointoxication; colisepsis, dysbacteriosis. Enteritis, colitis. 8. Disorders of the secretory function of the pancreas; acute and chronic pancreatitis. Pathogenesis of pancreatic collapse. 9. Methods of diagnostics of typical forms of gastrointestinal tract disorders.	**3** **02.11.26-07.11.26**
29.	**Liver pathophysiology** 1. General etiology and pathogenesis of liver diseases. 2. Liver failure: types, causes, mechanisms of development, metabolic disorders and body functions. Hepatic coma. Clinical and laboratory indicators of liver failure. 3. Etiology and pathogenesis of hepatitis and liver cirrhosis. 4. Characteristics of the main syndromes in liver pathology. 5. Portal hypertension: causes, mechanisms of development, manifestations. Diagnosis of portal hypertension. 6. Disorders of the biliary system and pigment metabolism. Jaundice: types, etiology, pathogenesis, manifestations. Differential diagnostics of various types of jaundice. 7. Syndromes of cholemia and acholia. 8. Gallstone disease. Clinical and laboratory indicators of pigment metabolism.	**3** **09.11.26-14.11.26**
30.	**Pathophysiology of the kidneys** 1. Manifestations of renal function disorders. Changes in diuresis and urine composition, their diagnosis and clinical evaluation. 2. Acute and chronic diffuse glomerulonephritis: etiology, pathogenesis, manifestations. 3. Tubulopathies: etiology, pathogenesis, manifestations. 4. Nephrotic syndrome: types, mechanisms of development. 5. Pyelonephritis: etiology, pathogenesis, manifestations. 6. Causes and mechanisms of kidney stone formation, nephrolithiasis. 7. Acute kidney injury and chronic kidney disease: etiology, pathogenesis, stages, complications and outcomes. Renal failure. 8. Methods for diagnosing typical forms of kidney disorders.	**3** **16.11.26-21.11.26**
31.	**Pathophysiology of the endocrine system** 1. Violation of feedback and self-regulation mechanisms in the neuroendocrine system. 2. The main types of endocrine disorders: principles of classification, general characteristics, general mechanisms. 3. Pathology of the hypothalamic-pituitary system. 4. Pathophysiology of typical forms of adrenal pathology. 5. Pathophysiology of the thyroid gland. 6. Pathophysiology of the parathyroid glands. 7. Pathophysiology of the sex glands. 8. Pathophysiology of the thymus gland. 9. Methods of diagnostics of typical forms of endocrinopathies. Principles of correction of endocrine diseases.	**3** **23.11.26-28.11.26**

32.	**Pathophysiology of the nervous system** 1. General etiology of disorders of the nervous system functions. 2. Pathology of neurons. Mechanisms of disorders of synaptic processes. Pathology of dendrites. 3. Deficit of inhibition, pathological hyperactivity of neurons. Deafferentation of nerve structures. 4. Generators of pathological excitation: conditions of formation, characteristics of activity and pathogenetic significance. 5. Neurogenic disorders of sensitivity, their types and mechanisms. Pain. 6. Neurogenic disorders of locomotor function, types and mechanisms of development. 7. Disorders of the autonomic nervous system functions: types, mechanisms of development. 8. Neurogenic trophic disorders. 9. Disorders of higher nervous activity, classification. Neuroses: neurophysiological mechanisms, main manifestations. Experimental models of neuroses.	**3** **30.11.26-05.12.26**
33.	**Control Lesson №4:** 1. Pathophysiology of the cardiovascular system. Heart disorders 2. Circulatory disorders associated with vascular dysfunction 3. Pathophysiology of external respiration 4. Pathophysiology of the digestive system 5. Liver pathophysiology 6. Pathophysiology of the kidneys 7. Pathophysiology of the endocrine system 8. Pathophysiology of the nervous system	**3** **07.12.26-12.12.26**
	TOTAL hours per semester	***45***

Заведующий кафедрой нормальной и
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