

MINISTRY OF HEALTH OF UKRAINE
BUKOVINIAN STATE MEDICAL UNIVERSITY

"AGREED"

Vice-rector of higher educational establishment on
Scientific and Pedagogical work

Associate Professor  Volodymyr

KHODOROVSKYY

"30" 

2024

**STUDENT GUIDE
(SYLLABUS)
of studying the discipline
INTERNAL MEDICINE**
including endocrinology and medical genetics

Field of knowledge 22 Healthcare
(code and name of the field of knowledge)

Specialty 222 Medicine
(code and name of the specialty)

Educational degree Master
(master, bachelor, junior bachelor)

Educational year 4

Form of study full-time
(full-time, part-time, distance)

Department Department of Internal Medicine
(name of the department)

Approved at the methodical session of the Department of Internal Medicine
"30" August 2024 (Protocol №1).

Head of the Department  Oleksandr FEDIV
(signature)


Approved at the methodical session of the Department of Clinical Immunology, Allergology and Endocrinology
"30" August 2024 (Protocol № 2).

Head of the Department  Natalia PASHKOVSKA
(signature)

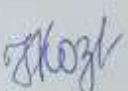
Approved at the methodical session of the Department of Pediatrics and Medical Genetics
"30" August 2024 (Protocol № 2).

Head of the Department  Snizhana SOKOLNYK
(signature)

Approved by the subject methodical commission of the therapeutic disciplines
"30" August 2024 (Protocol № 9).

Head of the subject methodical commission  Viktor TASHCHUK
(signature)

Chernivtsi – 2024



1. GENERAL INFORMATION ABOUT SCIENTIFIC AND PEDAGOGICAL WORKERS WHO TEACH THE SUBJECT

Department	Department of Internal Medicine and Infectious Diseases
Surname, name of scientific and pedagogical staff, scientific degree, academic status	<p><i>Fediv Oleksandr</i> - Head of the Department, Doctor of Medical Sciences, Professor, o.fediv@gmail.com;</p> <p><i>Zub Liliia</i> – Doctor of Medical Sciences, Professor, zubliliya7@gmail.com;</p> <p><i>Voloshyna Larysa</i>- Associate Professor of the Department, Doctor of Medical Sciences, Associate Professor, voloshka03@ukr.net;</p> <p><i>Olinik Oksana</i> – Associate Professor of the Department, PhD, Associate Professor, olinoks@bsmu.edu.ua;</p> <p><i>Teleki Yana</i> - Associate Professor of the Department, PhD, Associate Professor, jana_med@ua.fm;</p> <p><i>Kvasnytska Olga</i> - Associate Professor of the Department, PhD, Associate Professor, olgakvasnytska370@gmail.com</p> <p><i>Kulachek Veronika</i>- Associate Professor of the Department, PhD, Associate Professor, kulacheknika@gmail.com;</p> <p><i>Hontsariuk Dmytro</i> - Associate Professor of the Department, PhD, difess@gmail.com;</p> <p><i>Honcharuk Lyudmila</i> - Associate Professor of the Department, PhD, ludmylahoncharuk@gmail.com</p> <p><i>Prysiashniuk Iryna</i> - Associate Professor of the Department, PhD, prir@ukr.net;</p>
Web page of the department on the official website of the university	https://www.bsmu.edu.ua/vnutrishnoyi-meditsini/
Department website	http://intmed.bsmu.edu.ua/
E-mail	int_medicine@bsmu.edu.ua
Address	Chernivtsi, Holovna street, 137
Contact phone	+38 (03722) 3-32-62
Department	Department of Clinical Immunology, Allergology and Endocrinology
Surname, name of scientific and pedagogical staff, scientific degree, academic status	<p><i>Pashkovska Nataliia</i>- Head of the Department, Doctor of Medical Sciences, Professor pashkovska.natalija@bsmu.edu.ua;</p> <p><i>Marchuk Yuliya</i> - Associate Professor of the Department, PhD, Associate Professor, marchuk.yulia@bsmu.edu.ua;</p> <p><i>Olenovych Olga</i>- Associate Professor of the Department, PhD, Associate Professor, olenovych.olga@bsmu.edu.ua;</p> <p><i>Tsaryk Iryna</i> - Assistant Professor, PhD, iryna.tsaryk@bsmu.edu.ua.</p>
Web page of the department on the official website of the university	http://endos.bsmu.edu.ua/
Department website	
E-mail	immunology@bsmu.edu.ua
Address	Chernivtsi, Fedkovycha street ,48,50,54 Chernivtsi, Guzar street, 2

Contact phone	+38(03722) 3-10-81; +38(03722) 3-21-51.
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Department	Department of Pediatrics and Medical Genetics
Department	Department of Pediatrics and Medical Genetics
Surname, name of scientific and pedagogical staff, scientific degree, academic status	Lastivka Iryna- Ластівка Ірина Володимирівна – Associate Professor of the Department, PhD, Associate Professor, lastivka.iv@bsmu.edu.ua ; Andriychuk Denys - Associate Professor of the Department, PhD, andriychuk_denis@bsmu.edu.ua ; Ryznychuk Maryana – Associate Professor of the Department, PhD, rznichuk@bsmu.edu.ua
Web page of the department on the official website of the university	https://www.bsmu.edu.ua/pediatrici-ya-ta-medichnoyi-genetiki/
Department website	pmg.bsmu.edu.ua
E-mail	pediatry_gen@bsmu.edu.ua
Address	Ukraine, Chernivtsi, Bukovynska street, 4
Contact phone	+38 (050) 192-09-53

2. GENERAL INFORMATION ABOUT THE DISCIPLINE

Status of the discipline	normative
Number of credits	8
Total amount of hours	240
Lectures	40
Practical lessons	150
Individual work	50
Type of final control	final module control

3. DESCRIPTION OF THE DISCIPLINE (ABSTRACT)

The studying of the discipline "Internal Medicine" allows students to acquire knowledge of the principles of diagnosis and treatment of the most common diseases of internal organs, emergency care in emergencies and develops the ability to apply knowledge of pathology of internal organs in future and professional activity in accordance with evidence-based medicine.

4. POLICY OF THE SUBJECT

4.1. List of normative documents:

- Regulations on the organization of the educational process (<https://www.bsmu.edu.ua/wp-content/uploads/2020/03/polozhennya-pro-organizacziyu-osvitnogo-proczesu-u-vidnuzh-bukovynskij-derzhavnij-medichnij-universitet.pdf>);
- Instructions for assessing the educational activities of BSMU students in the implementation of the European credit transfer system of the educational process (<https://www.bsmu.edu.ua/wp-content/uploads/2020/03/bdmu-instrukciya-shhodo-ocziyvannya-%D1%94kts-2014-3.pdf>);
- Regulations on the procedure for reworking missed and uncredited classes (<https://www.bsmu.edu.ua/wp-content/uploads/2019/12/reworks.pdf>);

- Regulations on the appeal of the results of the final control of knowledge of higher education (<https://www.bsmu.edu.ua/wp-content/uploads/2020/07/polozhennya-pro-apelyacziyu-rezultativ-pidsumkovogo-kontrolyu-znan.pdf>);
- Codex of Academic Integrity (https://www.bsmu.edu.ua/wp-content/uploads/2019/12/kodeks_academic_faith.pdf);
- Moral and ethical codex of students (https://www.bsmu.edu.ua/wp-content/uploads/2019/12/ethics_code.docx);
- Regulations on the prevention and detection of academic plagiarism (<https://www.bsmu.edu.ua/wp-content/uploads/2019/12/antiplagiat-1.pdf>);
- Regulations on the procedure and conditions for students to choose elective courses (https://www.bsmu.edu.ua/wp-content/uploads/2020/04/nakaz_polozhennyh_vybirkovi_dyscypliny_2020.pdf);
- Rules of internal labor regulations of the Higher State Educational Institution of Ukraine "Bucovynian State Medical University" (<https://www.bsmu.edu.ua/wp-content/uploads/2020/03/17.1-bdmu-kolektivnij-dogovir-dodatok.doc>).

4.2. Policy on adherence to the principles of academic integrity of higher education students:

- independent performance of educational tasks of current and final controls without the use of external sources of information;
- cheating during control of knowledge is prohibited;
- independent performance of individual tasks and correct registration of references to sources of information in case of borrowing of ideas, statements, information.

4.3. Policy on adherence to the principles and norms of ethics and deontology by higher education students:

- actions in professional and educational situations from the standpoint of academic integrity and professional ethics and deontology;
- compliance with the rules of internal regulations of the university, to be tolerant, friendly and balanced in communication with students and teachers, medical staff of health care institutions;
- awareness of the importance of examples of human behavior in accordance with the norms of academic integrity and medical ethics.

4.4. Attendance policy for higher education students:

- attendance at all training sessions (lectures, practical (seminar) classes, final modular control) is mandatory for the purpose of current and final assessment of knowledge (except for respectable reasons).

4.5. Deadline policy and completion of missed or uncredited classes by higher education students:

- reworks of missed classes are held according to the schedule of missed or uncredited classes and consultations.

5. PRECISIONS AND POST-REQUIREMENTS OF THE EDUCATIONAL DISCIPLINE (INTERDISCIPLINARY RELATIONS)

List of disciplines, on which the study of academic discipline is based	List of academic disciplines, for which the basis is laid as a result of studying the discipline
Normal and pathological anatomy	Internal Medicine
Normal and pathological physiology	Surgery
Biochemistry	Obstetrics and gynecology
Pharmacology	Pediatrics
Propaedeutics of childhood diseases	
Propaedeutics of internal diseases	
Normal and pathological anatomy	

6. PURPOSE AND TASKS OF THE EDUCATIONAL DISCIPLINE:

The purpose of teaching the discipline is to teach students the theoretical foundations, skills of examination of somatic patients, methodology for diagnosing diseases of internal organs, choosing treatment tactics and providing emergency care in emergencies in internal medicine, as well as determining etiological factors and pathogenetic mechanisms of major diseases of internal organs.

Objectives: mastering the method of subjective and objective examination of the patient; drawing up a plan for additional examination for various diseases of the internal organs; evaluation of research results (laboratory and instrumental); assessment of the patient's health; study of the main pathological symptoms and syndromes; mastering the list of necessary medical manipulations and planning tactics of management of the patient with pathology of internal organs.

7. COMPETENCIES, THE FORMATION OF WHICH IS CONTRIBUTED BY THE DISCIPLINE:

7.1. integral:

The ability to solve complex problems, including those of a research and innovation nature in the field of medicine. The ability to continue learning with a high degree of autonomy.

7.2.General competencies (GC):

GC 1	Ability to abstract thinking, analysis and synthesis.
GC 2	Ability to learn and master modern knowledge.
GC 4	Knowledge and understanding of the subject area and understanding of professional activity.
GC 6	Ability to make informed decisions.
GC 7	Ability to work in a team.
GC 8	Ability to interpersonal interaction.
GC 11	Ability to search, process and analyze information from various sources.
GC 12	Determination and persistence in relation to assigned tasks and assumed responsibilities.

7.3.Special (professional, subject) competencies (PC):

PC 1	Ability to collect medical information about the patient and analyze clinical data.
PC 2	Ability to determine the necessary list of laboratory and instrumental studies and evaluate their results.
PC 3	Ability to establish a preliminary and clinical diagnosis of the disease.
PC 6	Ability to determine the principles and nature of treatment and prevention of diseases.
PC 7	Ability to diagnose emergency conditions.
PC 8	Ability to determine tactics and provide emergency medical care.
PC 11	Ability to solve medical problems in new or unfamiliar environments in the presence of incomplete or limited information, taking into account aspects of social and ethical responsibility, including early intervention systems.
PC 15	The ability to conduct an examination of working capacity.
PC 16	Ability to maintain medical documentation, including electronic forms.
PC 21	It is clear and unambiguous to convey one's own knowledge, conclusions and arguments on health care problems and related issues to specialists and non-specialists, in particular to people who are studying.
PC 22	Ability to manage healthcare workflows that are complex, unpredictable and require new strategic approaches.
PC 23	Ability to develop and implement scientific and applied projects in the field of health care.
PC 24	Adherence to ethical principles when working with patients and laboratory animals.

PC 25	Adherence to professional and academic integrity, to be responsible for the reliability of the obtained scientific results.
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8.1.RESULTS OF STUDYING THE DISCIPLINE.

Learning outcome	Special (professional, subject) learning outcomes
PLO 1	Have thorough knowledge of the structure of professional activity. To be able to carry out professional activities that require updating and integration of knowledge. To be responsible for professional development, the ability for further professional training with a high level of autonomy.
PLO 4	Identify and identify leading clinical symptoms and syndromes (according to list 1); according to standard methods, using preliminary data of the patient's history, data of the patient's examination, knowledge about the person, his organs and systems, establish a preliminary clinical diagnosis of the disease (according to list 2).
PLO 5	Collect complaints, anamnesis of life and diseases, assess the psychomotor and physical development of the patient, the state of organs and systems of the body, based on the results of laboratory and instrumental studies, evaluate information regarding the diagnosis (according to list 4), taking into account the age of the patient.
PLO 6	To establish the final clinical diagnosis by making a reasoned decision and analyzing the received subjective and objective data of clinical, additional examination, carrying out differential diagnosis, observing the relevant ethical and legal norms, under the control of the managing physician in the conditions of the health care institution (according to the list 2).
PLO 7	Assign and analyze additional (mandatory and optional) examination methods (laboratory, functional and/or instrumental) (according to list 4) of patients with diseases of organs and body systems for differential diagnosis of diseases (according to list 2).
PLO 8	Determine the main clinical syndrome or what causes the severity of the victim/injured's condition (according to list 3) by making a reasoned decision and assessing the person's condition under any circumstances (in the conditions of a health care facility, outside its borders), including in conditions of emergency and hostilities, in field conditions, in conditions of lack of information and limited time.
PLO 9	Determine the nature and principles of treatment (conservative, operative) of patients with diseases (according to list 2), taking into account the age of the patient, in the conditions of a health care institution, outside its borders and at the stages of medical evacuation, including in field conditions, based on a previous clinical diagnosis, on the basis of a previous clinical diagnosis, observing the relevant ethical and legal norms, by making a reasoned decision according to existing algorithms and standard schemes, in case of the need to expand the standard scheme, be able to substantiate personalized recommendations under the supervision of the head physician in the conditions of a medical institution.
PLO 10	Determine the necessary mode of work, rest and nutrition on the basis of the final clinical diagnosis, observing the relevant ethical and legal norms, by making a reasoned decision according to existing algorithms and standard schemes. determine the factors that prevent the improvement of the quality and safety of medical care.
PLO 14	Determine tactics and provide emergency medical care in emergency situations (according to list 3) in limited time in accordance with existing clinical protocols and treatment standards.
PLO 15	To organize the provision of medical aid and medical evacuation measures to the population and military personnel in emergency situations and hostilities, including in field conditions.

PLO 17	Perform medical manipulations (according to list 5) in the conditions of a medical institution, at home or at work based on a previous clinical diagnosis and/or indicators of the patient's condition by making a reasoned decision, observing the relevant ethical and legal norms.
PLO 18	To determine the state of functioning and limitations of a person's vital activities and the duration of incapacity for work with the preparation of relevant documents, in the conditions of a health care institution, based on data about the disease and its course, peculiarities of a person's professional activity, etc. Maintain medical documentation regarding the patient and the contingent of the population on the basis of regulatory documents.
PLO 21	Search for the necessary information in the professional literature and databases of other sources, analyze, evaluate and apply this information.
PLO 25	It is clear and unambiguous to convey one's own knowledge, conclusions and arguments on health care problems and related issues to specialists and non-specialists.
PLO 26	Manage work processes in the field of health care, which are complex, unpredictable and require new strategic approaches, organize the work and professional development of personnel taking into account the acquired skills of effective teamwork, leadership positions, appropriate quality, accessibility and justice, ensuring the provision of integrated medical help.
PLO 28	Make effective decisions about health care problems, assess the necessary resources, take into account social, economic and ethical consequences.

As a result of studying the discipline the applicant must:

8.2. **Know:**

the frequency of congenital and hereditary pathology in different periods of ontogenesis; the share of congenital and hereditary pathology in the structure of morbidity and mortality; genetic aspects of fetal growth and development; features of the embryonic and fetal periods of fetal development; etiology, pathogenesis, classification of congenital malformations; classification of hereditary pathology; content, concepts, effects of chromosomal and genomic imprinting; lethal effects of mutations (their significance in perinatal, early infant and child mortality, connection with infertility, miscarriage); principles and stages of clinical and genealogical examination; criteria for different types of inheritance; chromosome staining methods; types of disorders in the chromosome set: structural, numerical, principles of organization of screening programs; basic research methods in suspected hereditary metabolic diseases (HMD); basic molecular research methods; classification of developmental defects; consistency of the nature of disorders with the stages of ontogenesis (hemato-, embryo-, fetopathy); morphogenetic variants and values in the diagnosis of hereditary syndromes and congenital conditions; general questions of etiology and pathogenesis of monogenic diseases; mechanism of pathogenesis and classification of monogenic diseases; classification and leading symptoms of hereditary connective tissue diseases; clinic, genetics, diagnosis of Ehlers-Danlos syndrome; classification and leading symptoms of hereditary neuromuscular diseases; classification of hereditary kidney diseases; clinic, genetics, diagnostics of HMD of amino acids and HMD of carbohydrates; general characteristics of phacomatosis; general characteristics of oncogenetic syndromes; etiology of lysosomal diseases of accumulation; general principles of treatment of hereditary diseases, rehabilitation and social adaptation of patients; etiology, cytogenetics, pathogenesis and characteristics of chromosomal diseases; modern possibilities of prenatal diagnostics; features of clinical manifestations of certain syndromes: Down, Patau, Edward, "cat's cry", Shereshevsky-Turner, Klinefelter; general characteristics, principles of classification and diagnosis of mitochondrial pathology; clinic, genetics, diagnosis, therapy of MERRF and MELAS syndromes; general principles of treatment of mitochondrial diseases; general characteristics of multifactorial diseases, genealogical, twin and population-statistical methods of analysis of multifactorial diseases; genetic bases of various forms of malignant growth; levels of prevention of hereditary diseases, ways and forms of preventive measures; indications for medical and genetic counseling; indications for prenatal diagnosis; methods of prenatal diagnosis; principles of selection

of nosological forms subject to screening preclinical diagnosis; deontological issues of screening programs; etiological and pathogenetic factors of endocrine diseases, diseases of the digestive tract, hepatobiliary system and pancreas, urinary system, basic diseases of joints and connective tissue, typical clinical picture of diseases of urinary system and main variants of course and complications of diseases of urinary system, typical clinical picture of main diseases of joints and connective tissue and typical variants of course and complications of basic diseases of joints and joints picture of diseases of the digestive tract and the main options for the course and complications of diseases of the digestive tract, hepatobiliary system and pancreas; basic invasive and non-invasive diagnostic methods used in endocrinology, gastroenterology, rheumatology, nephrology, indications and contraindications for their implementation, possible complications; abdominal puncture technique (paracentesis); bowel cleansing technique (hypertonic, cleansing and siphon enemas, finger cleansing of the rectum); indications and contraindications to physiotherapy procedures.

8.2 Be able to:

- To determine the leading symptom complex when assessing the phenotype of a proband with Marfan syndrome.
- Define criteria for the diagnosis of cystic fibrosis.
- Define criteria for polygenic susceptibility.
- Analyze the results of biochemical screening.
- Conduct surveys and physical examinations of patients with diseases of the digestive tract, hepatobiliary system and pancreas, patients with major diseases of the joints and connective tissue, patients with diseases of the urinary system, patients with diseases of the endocrine system
- Carry out clinical interpretation of the results of additional methods of examination (biochemical liver tests, esophagogastroduodenofibrosocopy, X-ray examination of the digestive system, scans and ultrasound examination of the liver, gallbladder, pancreas, enzyme-linked immunosorbent assay for viral hepatitis, hepatitis, rn tomography and magnetic resonance imaging of internal organs)
- Interpret the results of additional examination methods (general analysis of urine, Zymnysky, Nechiporenko, Reberg tests, results of biochemical study of the functional state of the kidneys, the results of computed tomography and magnetic resonance imaging of the kidneys, etc.)
- Interpret laboratory parameters in rheumatic diseases (rheumatic tests, autoimmune markers, etc.)
- Interpret the data of echocardiographic examination and radiological examination of the joints
- Make a plan of examination of patients with diseases of the urinary system, patients with major diseases of the joints and connective tissue, patients with major diseases of the digestive tract, hepatobiliary system and pancreas, patients with major endocrine diseases
- To make a differential diagnosis, based on the analysis of laboratory and instrumental examination data, to substantiate and formulate the diagnosis in diseases of the urinary system, in diseases of joints and connective tissue, in major diseases of the digestive tract, hepatobiliary system and pancreas, in major endocrine diseases
- Prescribe treatment, carry out primary and secondary prevention in diseases of the genitourinary system, in major diseases of the musculoskeletal system and connective tissue, in diseases of the digestive tract, hepatobiliary system and pancreas, in endocrine diseases
- Diagnose and provide emergency care in endocrinology
- Diagnose and provide care in emergencies in gastroenterology
- Diagnose and care for acute renal failure
- Carry out the stages of medical rehabilitation of the patient according to the recommendations after inpatient treatment
- Promote a healthy lifestyle

- Organize medical nutrition. To consult patients on the issues of rational and dietary nutrition.

8.3. Demonstrate:

- mastery of moral and deontological principles of a medical specialist and the principles of professional subordination

9. INFORMATIONAL SCOPE OF THE DISCIPLINE

240 hours and 8 ECTS credits are allocated for the study of the discipline.

Module 1. Fundamentals of internal medicine (endocrinology, medical genetics, gastroenterology, nephrology, rheumatology)

Content module 1. Diagnostics, treatment and prophylaxis of endocrine system diseases» (60 hours, 2 credits)

Content module 2. Medical Genetics

Content module 3. Fundamentals of diagnosis, treatment and prevention of diseases in gastroenterology.

Content module 4. Diagnostics, treatment and prevention of main renal disorders.

Content module 5. Diagnostics, treatment and prevention of main musculoskeletal system disorders and connective tissue diseases

Structural module 1: «Diagnostics, treatment and prophylaxis of endocrine system diseases» (60 hours, 2 credits)

TOPIC 1. Diabetes mellitus, classification, etiology, pathogenesis, clinical presentation, diagnostics. Determination of diabetes mellitus. Epidemiology of diabetes in Ukraine and the world, prognosis, prevalence of diabetes in different age groups. Etiology and pathogenesis of diabetes mellitus. Type 1 diabetes mellitus: the role of viral infection and autoimmune processes, genetic predisposition. Type 2 diabetes: the role of genetic predisposition, obesity, external factors. Insulin resistance and impaired insulin secretion. Classification of glycemic disorders (WHO, 1999), clinical forms of diabetes mellitus. Clinical picture of diabetes. The main clinical symptoms of diabetes. Signs of different types of diabetes. Characteristics of lesions of internal organs in diabetes mellitus: cardiovascular system, hepatobiliary system, urinary organs, diabetic osteoarthropathy. Diagnosis of diabetes. Criteria for the diagnosis of diabetes mellitus and other categories of hyperglycemia (WHO, 1999). Indications and rules for glucose tolerance test. Diagnostic value of glycosylated hemoglobin, fructosamine, C-peptide, glucosuria, ketonuria.

TOPIC 2. Diabetes mellitus type 1 and 2, modern approaches to the treatment. The main methods of diabetes treatment, diet therapy, dosed exercise, hypoglycemic pharmacotherapy, teaching the patient self-control. Diet therapy for diabetes. Modern principles of diet therapy: physiology, energy value, restriction of refined carbohydrates, consumption of dietary fiber, trace elements, vitamins. Dosed physical activity and rules of its purpose. Criteria for compensation of carbohydrate metabolism in patients with type 1 diabetes. Insulin therapy. Classification of insulin preparations, short-acting and long-acting preparations, ultra-short and long-acting insulin analogues. Characteristics of the main insulin preparations. Indications, contraindications. Calculation of daily insulin requirements. Insulin dose adjustment with bread units. Insulin therapy regimen: traditional and intensified insulin therapy. Complications of insulin therapy: hypoglycemic conditions, insulin allergy, post-injection lipodystrophy, insulin resistance, chronic insulin overdose (Somogy syndrome), insulin edema. Basic principles of treatment of type 2 diabetes. Criteria for compensation of metabolism, achievement of normoglycemia. Oral hypoglycemic drugs. Derivatives of sulfonylureas, non-sulfonylurea insulin secretagogues, biguanides, glitazones, acarbose. Characteristics of drugs, their mechanism of action, side effects, indications and contraindications.

TOPIC 3. Chronic complications of diabetes mellitus: diabetic retinopathy, nephropathy, neuropathy and the diabetic foot. Clinical course and treatment peculiarities of diabetic patients during surgery and pregnancy. Diabetes-associated emergency states. Features of the course and treatment of diabetes mellitus in surgical patients during pregnancy. Diabetic angiopathy and neuropathy. Classification. Diabetic nephropathy: stages of development, diagnosis,

differential diagnosis, treatment and prevention. Diabetic retinopathy: stages of the process, diagnosis, prevention and treatment. Diabetic neuropathy, classification, diagnosis and treatment. Diabetic foot syndrome: classification, diagnosis, treatment algorithm. Diagnosis and surgical treatment of diabetic angiopathy of the lower extremities. Diabetic gangrene. Features of urgent and planned surgical interventions in patients with diabetes mellitus. Principles of treatment of pregnant women with diabetes. Tactics in the process of examination of disability (temporary and permanent), filling in the relevant documents. Principles of rehabilitation and sanatorium selection. Principles of rational and preventive nutrition. Organization of the "School of Health" for patients.

Hypoglycemic coma, hypoglycemic states. Etiology, pathogenesis, clinical picture, diagnosis, treatment. Ketoacidotic conditions with diabetic (hyperketonemic) coma. Etiology, pathogenesis, clinical picture, diagnosis, differential diagnosis, treatment. Hyperosmolar (non-acidotic) diabetic coma. Lactic acidosis and coma.

TOPIC 4. Iodine deficiency thyroid disorders. Signs of endemic region according to WHO-criteria. Clinical presentation, diagnostics, prophylaxis and treatment. Hypothyroidism. Classification, clinical picture, diagnostics and treatment. Thyroiditis. Definition of "iodine deficiency". Manifestations of iodine deficiency. Determination of iodine deficiency areas by the prevalence of goiter in different age groups and data on ioduria. Determination of the size of the thyroid gland. Age dynamics of gland volume. Definition of goiter. The concept of simple non-toxic and nodular forms of goiter. The impact of exogenous environmental factors and man-made disasters on nuclear power plants on the condition of the thyroid gland and the prevalence of its pathology. Iodine prophylaxis: mass, group, individual. The importance of iodized salt in the prevention of iodine deficiency diseases. Restrictions on the use of drugs based on potassium iodide. Hypothyroidism, etiology, pathogenesis and clinical signs. Rationale for the diagnosis. Hypothyroidism is primary, central, peripheral, subclinical, transient. Timely diagnosis of congenital hypothyroidism. Subclinical hypothyroidism. Pregnancy and hypothyroidism. Age features of hypothyroidism. Hypothyroidism on the background of autoimmune polyendocrinopathies. Treatment of hypothyroidism. Medical and social examination of patients with hypothyroidism. Thyroiditis: classification, etiology, clinical course, diagnosis, treatment. Differential diagnosis of thyroiditis with acute clinical course. Chronic thyroiditis. Rationale for the diagnosis of autoimmune thyroiditis. Nodular forms of goiter. Monitoring of patients with thyroid nodules.

Pathomorphological classification of thyroid tumors. Rationale for the diagnosis of thyroid cancer. The role of the Chernobyl accident in the increase in the incidence of thyroid cancer. Modern scheme of treatment, rehabilitation and dispensary observation of patients with thyroid cancer.

Principles of rehabilitation and sanatorium selection. Principles of rational and preventive nutrition. Organization of the "School of Health" for patients.

TOPIC 5. Thyrotoxicosis. Clinical forms. Diagnostics, treatment. Thyroid cancer and parathyroid diseases. Management of the patient in endocrinology clinic. Diseases accompanied by thyrotoxicosis. Etiology, pathogenesis, clinical manifestations of diffuse toxic goiter, thyrotoxic and endocrine ophthalmopathy. Age features of toxic goiter in children and the elderly. Clinical differences of nodular toxic goiter. Rationale for the diagnosis of thyrotoxicosis. Medical, surgical treatment of toxic goiter, use of I131 for therapeutic purposes. Complications of goiter treatment. Medical and social examination of patients with toxic goiter. Principles of rehabilitation and sanatorium selection. Principles of rational and preventive nutrition. Organization of the "School of Health" for patients. Anatomical and physiological data of the thyroid gland. Parathyroid hormone. Mechanism of action. Hyperparathyroidism. Etiology. Pathogenesis. Classification. Clinic, clinical forms of hyperparathyroidism. Diagnosis. Differential diagnosis. Treatment. Indications for surgical treatment. Postoperative period and rehabilitation of patients. Drug therapy. Hypoparathyroidism. Etiology. Pathogenesis. Classification. Clinic. Diagnosis. Differential diagnosis. Forecast. Prevention. Treatment. Clinical forms.

Carrying out of supervision of the patient, writing of the history of illness according to the approved scheme.

TOPIC 6. Chronic adrenal insufficiency. Etiology, pathogenesis, clinical picture, diagnostics, prevention and treatment. Adrenal crisis. Hormone-active adrenal tumors. Obesity. Anatomy and physiology of adrenal glands. Hormones of the cortex and cerebral layer of

the adrenal glands. Definition, prevalence of acute and chronic adrenal insufficiency. Chronic adrenal insufficiency (Addison's disease). Etiology, pathogenesis, clinic, diagnosis, prevention and treatment. Acute adrenal insufficiency. Etiology, pathogenesis, clinical picture, diagnosis, prevention and treatment. Classification of adrenal tumors. Itsenko-Cushing's syndrome (corticosteroma, glucosteroma): clinical picture, diagnosis and differential diagnosis, treatment. Androsteroma, corticosteroma: clinical picture, diagnosis and differential diagnosis, treatment. Primary hyperaldosteronism (Conn's syndrome): clinical picture, diagnosis and differential diagnosis, treatment. Pheochromocytoma: clinical picture, diagnosis and differential diagnosis, treatment. Determination of congenital hyperplasia of the adrenal cortex: clinical forms, diagnosis, treatment. Tactics in the process of examination of disability (temporary and permanent), filling in the relevant documents. Principles of rehabilitation and sanatorium selection. Principles of rational and preventive nutrition. Organization of the "School of Health" for patients. Obesity: etiology and pathogenesis, classification, clinical picture, diagnosis, treatment. Obesity in children and adolescents.

TOPIC 7. Disorders of the hypothalamo-hypophyseal system, growth disturbances, Gonadal diseases. Acromegaly: etiology and pathogenesis, clinical picture, diagnosis and differential diagnosis, treatment. Itsenko-Cushing's disease: etiology and pathogenesis, clinical picture, diagnosis and differential diagnosis, treatment. Hyperprolactinemia syndrome: classification, etiology and pathogenesis, clinical picture, diagnosis and differential diagnosis, treatment. Hypopituitarism: etiology and pathogenesis, clinical picture, diagnosis and differential diagnosis, treatment. Diabetes insipidus: etiology and pathogenesis, clinical picture, diagnosis and differential diagnosis, treatment. Causes of short and tall stature. Hypopituitarism with predominant somatotrophic insufficiency (pituitary dwarfism): classification, etiology and pathogenesis, clinical picture, diagnosis and differential diagnosis, treatment. Pituitary gigantism: etiology and pathogenesis, clinical picture, diagnosis and differential diagnosis, treatment. Gonads in men and women. Hormones. Congenital disorders of sexual differentiation. Agenesis of the gonads. Shereshevsky - Turner syndrome. Hermaphroditism syndrome. Cryptorchidism. Mono- and anorchism syndrome. Klinefelter's syndrome. Sexual development disorders in boys and girls. Climax in women and men.

TOPIC 8. Case history defence. Concluding control.

Content module 2. Medical genetics

TOPIC 9. Subject and tasks of medical genetics. The role of heredity in human pathology. Clinic-genealogical method. Cytogenetic and molecular genetics methods. Biochemical methods. Subject and tasks of medical genetics. The role of medical and genetic knowledge in the practical work of a doctor. The place of medical genetics in the system of medical knowledge, the relationship of medical genetics with other clinical disciplines. The growth of the share of hereditary pathology in the structure of morbidity, mortality and disability of the population. Relative growth in the number of hereditary diseases: population-genetic, environmental, socio-economic and demographic aspects. Classification of hereditary pathology. Mutations as etiological factors. Genomic, chromosomal and gene mutations. Monogenic pathology. Ecogenetic diseases and diseases with hereditary predisposition. Chromosomal diseases. Diseases of somatic cells. Causes of mutations. Physical, chemical, biological mutagens. Spontaneous and induced mutagenesis (methods of studying, accounting for and controlling the mutagenic effects of anthropotechnological environmental factors). Heredity and pathogenesis. Genetic control of pathological processes. Features of the pathogenesis of hereditary diseases due to the nature of damage to genetic structures. Specifics of pathogenesis of chromosomal diseases, general patterns. Phenocytogenetic correlations. General mechanisms of pathogenesis of monogenic hereditary diseases. Pathogenesis of diseases with hereditary predisposition and risk factors, association with mendelian traits or markers. Chromosomal and genomic imprinting (content, concepts, effects). Heredity and clinical picture. Clinical polymorphism and modifying influence of genotype on manifestations of pathological mutation. Genetic aspects of hemorrhagic pathology polymorphism. Heredity and consequences of diseases. Fatal effects of mutations (their significance in perinatal, early infant mortality, association with infertility, miscarriage). Hereditary pathological reactions to various drugs. Nonspecific effects of pathological mutations and chronic diseases. Genetic factors and recovery. Stages of clinical and genealogical examination. Basic concepts: pedigree, proband, pedigree legend,

symbols. Methods of collecting genealogical information and its features in different types of pathology. The value of clinical and genealogical method in clinical practice to clarify the nature of the disease, assess clinical manifestations, differential diagnosis of hereditary forms of pathology, study the genetic heterogeneity of diseases, assess the risk of new cases in the family, disease and life prognosis. Criteria for different types of inheritance: autosomal dominant, autosomal recessive, X-linked dominant, X-linked recessive, holandric, mitochondrial. The nature of pedigrees, sex ratios, segregation of pathological traits in families. Dependence of pedigree character on gene frequency in population. Recessive pathology and blood relationship. The concept of "sporadic case", possible causes of "sporadic cases" in the family, de novo mutations. The phenomenon of anticipation. Genealogical analysis in multifactorial diseases: the dependence of the magnitude of recurrence risk on the sex of the affected individual, the number of affected relatives, the degree of affinity with the proband, the proportion of diseases. Field of application of cytogenetic methods: diagnosis of hereditary pathology, study of mutation process, study of normal chromosome polymorphism. Variants of cytogenetic research methods. The concept of karyotype. Modern methods of chromosome research: promethase analysis, fluorescent in situ hybridization, autoradiographic research, chromosome-specific and region-specific molecular probes. The value of the cytogenetic method in clinical practice: diagnosis of chromosomal diseases, diagnosis of a number of mendelian diseases associated with chromosomal instability, diagnosis of cancer and some forms of leukemia, assessment of mutagenic effects of drugs, monitoring of environmental factors. Universality of methods of DNA diagnostics, possibilities of their use. Characteristics of the main methodological approaches (DNA isolation, DNA restriction, blot hybridization, sequencing). Methods of PCR, RFLP. Possibilities of molecular genetic methods in the diagnosis of hereditary diseases. Prenatal, preclinical diagnosis of diseases and diagnosis of heterozygous conditions. Indications for the use of molecular genetic methods and their limitations. The latest methods of mutation identification are the method of DNA chips. PDF method for determining polymorphic sites. The value of biochemical methods in the diagnosis of hereditary metabolic diseases. Levels of biochemical diagnostics: primary gene product, cellular level, metabolites in biological fluids. Screening diagnostics: qualitative and quantitative methods. List of basic methods and their brief characteristics (qualitative tests with urine, paper and thin-layer chromatography of amino acids and carbohydrates in urine and blood, electrophoresis, microbiological inhibitory Guthrie test, fluorometry). Screening programs for mass diagnosis of hereditary diseases and heterozygous conditions. Confirmatory diagnosis. Quantitative determination of enzymes and metabolites. Indications for biochemical research for the diagnosis of hereditary diseases.

TOPIC 10. Semiotics of hereditary diseases. Features of manifestations of hereditary diseases. Morphogenetic variants of development. Congenital malformations. Semiotics of hereditary diseases. Pleiotropic action of genes and multiple nature of the lesion in hereditary pathology. Primary and secondary pleiotropy in the clinic of hereditary diseases. The clinical aspect of pleiotropy associated with the differential diagnosis of syndromic and nonsyndromic pathology. Features of clinical examination of patients and their relatives, contributing to the diagnosis of congenital and hereditary pathology. Peculiarities of phenotype, specificity of the spectrum of morphogenetic variants of development in hereditary pathology. Anthropometry in the diagnosis of hereditary diseases. Morphogenetic variants of development (microanomalies, micro-signs, signs of dysembryogenesis), their genesis, postnatal modification. General and specific morphogenetic variants: importance in the diagnosis of hereditary syndromes and congenital conditions. Developmental defects: primary and secondary. Isolated, systemic and multiple congenital malformations. Etiological heterogeneity of PVR. The concept of syndrome, association, deformation, dysplasia. The family as an object of medical and genetic observation: the need for a family approach. Clinical significance of the phenomena of incomplete penetrance and variational expressiveness in the structure of the causes of clinical diversity of etiologically unique forms of

hereditary pathology. Genetic heterogeneity of clinically similar forms of diseases. Features of manifestations of hereditary diseases. Hereditary diseases with late manifestation. Progressive nature of the flow. Involvement of various organs and systems: polysystemic lesions. Resistance to therapy in some forms. Consistency of the nature of disorders with the stages of ontogenesis: gameto-, embryo- and fetopathy

Topic 11. General characteristics of monogenic pathology. Clinics and genetics of some forms of monogenic diseases. Hereditary diseases of metabolism. Principles of treatment of hereditary diseases, rehabilitation and social adaptation. Metabolic disorders. Common and rare forms. Prevalence among different contingents. General questions of etiology and pathogenesis of monogenic diseases. Types of gene mutations. Variety of manifestations of gene mutations at the clinical, biochemical, molecular-genetic levels. Effects of pre- and postnatal realization of mutant genes. Mechanism of pathogenesis of monogenic diseases: specificity of mutations, multiplicity of metabolic pathways, multiplicity of protein functions. Genetic heterogeneity of clinically similar forms of diseases. Aspects of heterogeneity: polyallelism, polylocus. Clinical polymorphism of the etiologically unique form of the disease: variational expressiveness. Clinical diversity as a result of the interaction of hereditary constitution and environmental modifiers. The concept of imprinting at the genetic level. The concept of geno-, pheno- and normocopies. Classification of monogenic diseases: etiological (genetic), organ-systemic, pathogenetic. Monogenic syndromes of multiple congenital malformations. General signs. Clinical examples. Ehlers-Danlos, Marfan syndromes, adrenogenital syndrome. Cystic fibrosis. Hypothyroidism. Hereditary kidney disease. Hereditary skeletal diseases. Phacomatosis: general characteristics, classification. Clinic, genetics, diagnosis of neurofibromatosis, tuberous sclerosis. Prevention of neoplasia. Tactics of management of patients with phacomatosis. Oncogenetic syndromes (CSOs). Definition of the concept. Etiology and classification. Hereditary forms of neoplasia. The mechanism of developed CSOs, features of tumor growth. Ways of prevention and tactics of management of patients at CSOs. Modern classification, brief description of groups, difficulties of causal classification. Scheme of pathogenesis of hereditary metabolic diseases. Clinic and genetics of certain forms of monogenic diseases with different types of inheritance (PKU, homocystinuria, galactosemia, glycogenosis, Gaucher disease, Neiman-Pick). Their frequency in the population, clinical forms and variants, types of mutations, pathogenesis, typical clinical picture, paraclinical and laboratory methods of diagnosis, treatment, prognosis, rehabilitation, social adaptation. Symptomatic and pathogenetic therapy. Principles of pathogenetic treatment as the main method of treatment of hereditary diseases. Etiotropic treatment. Genetically engineered approaches to the treatment of hereditary diseases. Gene therapy through somatic cells (principles, methods, results).

Topic 12. General characteristics of chromosomal diseases. Clinic of basic forms of chromosomal diseases. General characteristics of multifactorial diseases. Determination of genetic predisposition. Prevention measures. Etiology and cytogenetics of chromosomal diseases. Classification of chromosomal diseases. Chromosomal aberrations and genomic mutations. Partial trisomies and monosomies. Complete and mosaic shapes. Single parent disomia. Chromosomal imprinting. Age of parents and frequency of chromosomal diseases in children. Pathogenesis of chromosomal diseases. Dependence of the severity of the clinical picture on chromosomal imbalance, the amount of eu- and heterochromatin involved in the process. Mechanisms of developmental disorders and the occurrence of developmental defects in chromosomal diseases: non-divergence in meiosis, impaired oogenesis, decondensation of chromosomes in oocytes. Lethal effects of chromosomal and genomic mutations (miscarriage, stillbirth, early infant mortality). Developmental defects, involvement of various systems in the pathological process, craniofacial dysmorphism, delayed psychomotor development, mental retardation, endocrinopathy. Progressive course. Features of clinical manifestations of individual syndromes: Down, Patau, Edwards, trisomy 8, trisomy 22, "cat's cry", Wolf-Hirschhorn, Shereshevsky-Turner, Klinefelter, trisomy X, polysomy Y. Population frequency. Features of pregnancy with chromosomal syndromes. Oncogenetic nature of chromosomal pathology. Possibilities of therapy and rehabilitation of patients. Prenatal diagnosis of chromosomal diseases. The role of hereditary and environmental factors in the occurrence of common pathology of non-infectious etiology. General characteristics of multifactorial diseases: high frequency in the population; the nature of gender and age differences; features of the spread of predisposition genes

and the prevalence of diseases in families. The concept of predisposition. Genetic polymorphism of populations. Interaction of genetic predisposition and specific environmental conditions in the development of diseases. Specific mechanisms for the implementation of hereditary predisposition. Monogenic predisposition: ecogenetic pathology, pharmacogenetic reactions, occupational diseases. Polygenic predisposition as a result of the interaction of non-allelic genes. Genetics of multifactorial diseases: terminology, concepts and content. Genealogical, twin and population-statistical methods in clinical and genetic analysis of multifactorial diseases. Features of collection, verification and interpretation of information. Dependence of the degree of development of multifactorial diseases on the degree of kinship with the proband, the severity of his condition, the sex of the proband, population frequency, nature of work and living conditions. Empirical risk tables. Predisposition markers. High risk factors. Congenital malformations of multifactorial origin.

Topic 13. General characteristics of mitochondrial pathology. Clinic, diagnosis, treatment. Levels and ways of prevention of hereditary diseases. Medical genetic counseling. Prenatal diagnosis. Screening programs. Ethnic, geographical, social factors that cause differences in the prevalence of hereditary pathology. Genetic and demographic processes and the prevalence of hereditary diseases. Types of prevention of hereditary diseases: primary, secondary and tertiary prevention. Prevention levels: prezygotic, prezygotic, prenatal and postnatal. Ways of preventive measures: management of penetrance and expressiveness; elimination of the embryo and fetus; family and childbirth planning; environmental protection. Forms of preventive measures: medical and genetic counseling; prenatal diagnosis; mass screening programs; "Genetic" medical examination of the population (registers); environmental protection and control of mutagenicity of environmental factors. Medical and genetic counseling (MGC) as a type of specialized medical care for the population. IGC as a medical opinion. Tasks of MGK and indications for referral of patients and their families to MGK. Prospective and retrospective counseling. Genetic risk, degree of risk. The concept of theoretical and empirical risk. Principles of genetic risk assessment in monogenic, chromosomal and multifactorial pathology. Methods of conducting IGC. Genetic risk calculations; communication of information to patients; assisting the family in making a decision. Deontological and ethical issues of IGC. Interaction of doctors at MGK. Organization of medical and genetic service in Ukraine. History of prenatal diagnostics. Prenatal diagnosis as a method of prevention. General indications for prenatal diagnosis. Non-invasive methods of prenatal diagnosis. Ultrasound examination: principles, indications, timing, effectiveness of diagnosis of various diseases of the fetus, assessment of the condition of the placenta, amniotic sac. Determination of the level of biochemical markers (AFP, chorionic gonadotropin) in the serum of pregnant women as a screening for the detection of PVR and chromosomal diseases of the fetus. Invasive methods. Methods of obtaining fetal material: chorionic and placentobiopsy, amnio- and cordocentesis. Indications, terms, contraindications and possible complications. Diagnosis of individual nosological forms. Deontological and ethical issues that arise during prenatal diagnosis. Screening programs. The essence of programs. Principles of selection of nosological forms subject to screening preclinical diagnosis. Characteristics of the main programs for the diagnosis of phenylketonuria, congenital hypothyroidism, adrenogenital syndrome. Diagnosis of heterozygous conditions in high genetic risk groups. Deontological issues of screening programs.

*Content module 3: Fundamentals of diagnosis, treatment and prevention of diseases
in gastroenterology (62 hours, 2 credits)*

TOPIC 14. The main symptoms of gastrointestinal and hepatobiliary disorders. Methods of investigations in gastroenterology, hepatology and pancreatology. Gastroesophageal reflux disease. Dyspepsia. Chronic gastritis. The main gastrointestinal complaints. Determination of the main gastroenterological symptoms (pain, heartburn, dyspepsia, nausea, vomiting, bleeding, hepatomegaly, ascites, jaundice, diarrhea, constipation, etc.). General and disturbing symptoms. Physical symptoms of gastrointestinal pathology. Methods of physical examination of patients with gastrointestinal pathology. Symptomatic treatment.

Endoscopic methods: diagnostic possibilities of esophagogastroduodenoscopy, colonoscopy, biopsy, indications, contraindications and restrictions to their implementation, possible complications. Intra-gastric and intraesophageal pH-metry, duodenal sounding - informative and clinical evaluation of results. X-ray and isotopic methods for diagnosing diseases of the digestive tract and liver. Ultrasound examination of the abdominal cavity. Enzyme-linked immunosorbent assays and biochemical research methods. Diagnosis of H.pylori infection and other infectious factors. Definition of gastroesophageal reflux disease. Etiology, pathogenesis. The role of gastroesophageal reflux in the development of esophagitis and Barrett's esophagus. Classification. Erosive and non-erosive GERD. Clinical manifestations depending on the variant and stage. Diagnostic criteria, differential diagnosis. Complication. Differentiated therapy. Primary and secondary prevention.

Definition of gastric dyspepsia. Etiology and pathogenesis. The role of H. pylori in the occurrence of gastroduodenal pathology. Classification. Unexamined and functional dyspepsia. Criteria for diagnosis. Differential diagnosis with organic pathology. Modern treatment of functional dyspepsia. Primary and secondary prevention. Forecast and efficiency.

Definition, etiology and pathogenesis of chronic gastritis. The role of H. pylori in the occurrence of chronic gastritis. Classification. nonatrophic and atrophic gastritis. The value of endoscopic (with morphology) and radiological examination to establish the diagnosis. Modern treatment of different types of chronic gastritis. Primary and secondary prevention. Forecast and efficiency.

TOPIC 15. Peptic ulcer of the stomach and duodenum. Peptic ulcer and other peptic ulcers of the stomach and duodenum. Definition. The role of H. pylori, acid-peptic factor and drugs in the occurrence of peptic ulcers and their recurrence. Features of Hp-positive and Hp-negative ulcers. Complications (perforation, penetration, bleeding, impaired tow-motor function). Instrumental and laboratory diagnostic methods. Methods of diagnosis of Hp- infection. Modern tactics of management of the patient with an ulcer. Eradication therapy. Eradication control. Drug therapy of Hp-negative ulcers. Indications for surgical treatment. Primary and secondary prevention. Forecast and efficiency. Tactics in the process of examination of disability (temporary and permanent), filling in the relevant documents. Principles of rehabilitation and sanatorium selection. Principles of rational and preventive nutrition. Organization of the "School of Health" for patients.

TOPIC 16. Celiac disease and other enteropathies. Inflammatory bowel diseases. Irritable bowel syndrome. Definition. Etiology, pathogenesis. The role of intolerance of food components, enzymopathies and immune factors. Malabsorption and maldigestion syndromes. Diagnostic criteria, differential diagnosis. Complication. Differentiated therapy. Primary and secondary prevention. Forecast and efficiency.

Irritable bowel syndrome, definition, Roman diagnostic criteria. Etiology and pathogenesis. Classification. Clinical manifestations of different options. Diagnostic and exclusion criteria. Differential diagnosis. Treatment of various forms. Primary and secondary prevention. Forecast and efficiency. Nonspecific colitis (nonspecific ulcerative colitis and Crohn's disease): definition, etiology and pathogenesis. Classification. Features of the clinical course depending on the degree of activity, severity and phase of the course. Diagnostic criteria. Differential diagnosis. Complications and diseases associated with ulcerative colitis (sclerosing cholangitis, spondylitis, arthritis, dermatoses). Tactics in the process of examination of disability (temporary and permanent), filling in the relevant documents. Principles of rehabilitation and sanatorium treatment. Principles of rational and preventive nutrition. Organization of the "School of Health" for patients.

TOPIC 17. Gallstone disease, chronic cholecystitis and functional biliary disorders. Definition. Etiology, pathogenesis. Importance of infection, motility disorders and dyscholia in the development of chronic non-stone cholecystitis, cholangitis and gallstone disease. Features of the clinical course. The role of instrumental methods in diagnosis. Differential diagnosis. Complication. Differentiated treatment depending on the clinical variant and the presence of complications. Indications for surgical treatment. Primary and secondary prevention. Forecast and efficiency. Tactics in the process of examination of disability (temporary and permanent), filling in the relevant documents. Principles of rehabilitation and sanatorium selection. Principles of rational and preventive nutrition. Organization of the "School of Health" for patients.

TOPIC 18. Chronic hepatitis. Definition. Classification. The role of persistence of the virus, drug agents, immune disorders and alcohol. Methods of diagnosis of viral infection. Chronic viral hepatitis. Basic clinical and biochemical syndromes. Features of the clinical course and diagnosis of individual forms. Significance of morphological, biochemical and radioisotope methods. Complication. Features of treatment of various forms. Primary and secondary prevention.

Autoimmune hepatitis, drug-induced hepatitis. Alcoholic liver disease. Features of the clinical course and diagnosis of individual forms. Differential diagnosis. Complication. Primary and secondary prevention. Forecast and efficiency. Principles of rehabilitation and sanatorium selection. Principles of rational and preventive nutrition. Organization of the "School of Health" for patients.

TOPIC 19. Liver Cirrhosis. Definition. Significance of viral infection, nutritional factors, alcohol, toxic substances and immunological disorders. Classification. Features of clinical manifestations and diagnosis of different options. Differential diagnosis. Hepatic failure and other complications. Differentiated therapy. Immediate treatment of complications. Hepato-splenomegaly in HIV infection. Primary and secondary prevention. Forecast and efficiency. Tactics in the process of examination of disability (temporary and permanent), filling in the relevant documents. Principles of rehabilitation and sanatorium treatment. Principles of rational and preventive nutrition. Organization of the "School of Health" for patients.

TOPIC 20. Chronic pancreatitis. Definition. Significance of various etiological factors. Classification. Features of the clinical course, diagnosis and differential diagnosis depending on the form and location of the pathological process. Complication. Research methods in the diagnosis of pancreatitis. Differentiated treatment. Primary and secondary prevention. Forecast and efficiency. Tactics in the process of examination of disability (temporary and permanent), filling in the relevant documents. Principles of rehabilitation and sanatorium treatment. Principles of rational and preventive nutrition. Organization of the "School of Health" for patients.

*Content module 4: Diagnostics, treatment and prevention of main renal disorders
(27 hours, 1 credit).*

TOPIC 21. The main symptoms of renal disorders. Methods of investigations in nephrology. Glomerulonephritis. Definition. Etiology, role of streptococcal infection and immunological disorders in the development of the disease. Pathogenesis of the main clinical syndromes. Classification. Clinical manifestations and diagnosis of some forms. Differential diagnosis. Complications (eclampsia, acute renal and chronic renal failure, etc.). Treatment taking into account the morphological variant and clinical course. Primary and secondary prevention. Forecast and efficiency.

Definition, etiology, pathogenesis of nephrotic syndrome. Clinical manifestations. Diagnostic criteria and differential diagnosis. Complication. Treatment. Primary and secondary prevention. Forecast and efficiency. Tactics in the process of examination of disability (temporary and permanent), filling in the relevant documents. Principles of rehabilitation and sanatorium selection. Principles of rational and preventive nutrition. Organization of the "School of Health" for patients.

TOPIC 22. Pyelonephritis. Tubulointerstitial nephritis and renal amyloidosis. Determination of pyelonephritis. The role of infection in inflammatory diseases of the kidneys and urinary tract. Primary and secondary pyelonephritis. Clinical manifestations. Instrumental and laboratory diagnostic methods. Differential diagnosis. Complication. Treatment. Primary and secondary prevention. Forecast and efficiency. Definition, etiology, pathogenesis of tubulointerstitial nephritis. Clinical manifestations. Diagnostic criteria and differential diagnosis. Complication. Treatment. Emergency care for acute renal failure. Primary and secondary prevention. Forecast and efficiency. Definition, etiology, pathogenesis of amyloidosis. Classification. Clinical manifestations of renal amyloidosis. Diagnostic criteria. Differential diagnosis. Complication. Treatment. Primary and secondary prevention. Forecast and efficiency. Tactics in the process of examination of disability (temporary and permanent), filling in the relevant documents. Principles of rehabilitation and sanatorium treatment. Principles of rational and preventive nutrition. Organization of the "School of Health" for patients.

TOPIC 23. Acute kidney injury. Chronic kidney disease. Definition. Etiological factors. Pathogenesis of lesions of organs and systems, their clinical manifestations. The concept of "chronic kidney disease". Classification. Clinic and changes in laboratory parameters depending on the stage. Differential diagnosis. Complication. Treatment at different stages. Renal replacement therapy: hemodialysis, kidney transplantation. Indications and contraindications to renal replacement therapy, complications. Primary and secondary prevention. Forecast and efficiency. Tactics in the process of examination of disability (temporary and permanent), filling in the relevant documents. Principles of rehabilitation and sanatorium treatment. Principles of rational and preventive nutrition. Organization of the "School of Health" for patients.

Content module 5. „Diagnostics, treatment and prevention of main musculoskeletal system disorders and connective tissue diseases” (60 hours, 2 credits)

TOPIC 24. Basic symptoms and methods of investigations in rheumatology. Rheumatic fever. The main rheumatological complaints and the definition of the main rheumatological symptoms (muscle and joint pain, back pain, etc.). General and specific symptoms. Physical symptoms of rheumatic pathology. Methods of physical examination of patients with rheumatic pathology. Standard echocardiography and Doppler, indications, informativeness and clinical evaluation of results. X-ray methods of diagnosis of heart, joint and spine diseases. Computed tomography and NMR. Immunological and biochemical research methods.

Acute rheumatic fever and chronic rheumatic heart disease. Definition. The role of streptococcal infection and immunological reactivity in the development of acute rheumatic fever. Classification. Clinical picture (carditis, polyarthritis, chorea, skin lesions). The value of laboratory and instrumental research methods. Diagnostic criteria. Differential diagnosis. Complication. Treatment based on the degree of activity. Primary and secondary prevention. Forecast and efficiency.

TOPIC 25. Rheumatoid polyarthritis. Rheumatoid arthritis. Definition. Etiological factors, pathogenesis. The role of immune status disorders in the development of the disease. Classification and nomenclature. Clinical picture taking into account the activity of the pathological process, the stage of the disease, systemic manifestations. The value of laboratory and instrumental methods for the diagnosis of the disease, its stage and activity. Diagnostic criteria, the importance of the study of synovial fluid. Differential diagnosis. Complication. Treatment strategy. Basic therapy. Tactics of treatment with glucocorticosteroids and nonsteroidal anti-inflammatory drugs. Prevention. Forecast and efficiency. Tactics in the process of examination of disability (temporary and permanent), filling in the relevant documents. Principles of rehabilitation and sanatorium selection. Principles of rational and preventive nutrition. Organization of the "School of Health" for patients.

TOPIC 26. Connective tissue diseases (systemic lupus erythematosus, systemic sclerosis, dermatomyositis). Systemic lupus erythematosus. Definition. Etiological factors and pathogenesis. Classification. Clinical manifestations depending on the damage to organs and systems, disease activity. The value of laboratory, including immunological, research methods. Diagnostic criteria. Differential diagnosis. Complication. Principles of treatment. Pulse therapy. Prevention. Forecast and efficiency.

Systemic sclerosis and dermatomyositis. Definition. Etiological factors, pathogenesis. Classification. Clinical picture depending on the damage to organs and systems. Diagnostic criteria, Differential diagnosis. Complication. Principles of treatment. Prevention. Forecast and efficiency. Tactics in the process of examination of disability (temporary and permanent), filling in the relevant documents. Principles of rehabilitation and sanatorium selection. Principles of rational and preventive nutrition. Organization of the "School of Health" for patients.

TOPIC 27. Systemic vasculities. Hemorrhagic vasculitis (Shenlein-Genoch purpura, hypersensitive vasculitis). Definition. Etiology, pathogenesis. Clinical manifestations, diagnostic criteria. Differential diagnosis. Treatment. Prevention. Forecast and efficiency.

Nodular polyarteritis. Definition. Etiology, pathogenesis. Clinical manifestations, diagnostic criteria. Differential diagnosis. Treatment. Prevention. Forecast and efficiency. Tactics in the process of examination of disability (temporary and permanent), filling in the relevant documents. Principles

of rehabilitation and sanatorium treatment. Principles of rational and preventive nutrition. Organization of the "School of Health" for patients.

TOPIC 28. Osteoarthritis. Gout. Osteoarthritis. Definition. Etiology, pathogenesis. Classification. Clinical picture depending on the predominant location of the lesions. Diagnosis. Differential diagnosis. Drug and non-drug treatment. Primary and secondary prevention. Forecast and efficiency.

Gout. Definition. Etiology, pathogenesis. Classification. Features of the joint syndrome and lesions of internal organs. Criteria for diagnosis. Differential diagnosis. Complication. Principles of differentiated treatment. Prevention. Forecast and efficiency.

TOPIC 29. Seronegative spondyloarthropathies. Ankylosing spondylitis. Definition. Etiological factors, pathogenesis. Classification. Clinical picture. The value of instrumental and laboratory methods. Diagnostic criteria. Differential diagnosis. Treatment. Prevention. Forecast and efficiency.

Reactive arthropathy. Definition. Etiology, pathogenesis. Classification. Clinical manifestations of reactive arthritis of various etiologies. Reiter's syndrome, the importance of laboratory and instrumental diagnostic methods. Diagnostic criteria, Differential diagnosis. Treatment, the role of antibacterial therapy. Primary and secondary prevention. Forecast and efficiency. Tactics in the process of examination of disability (temporary and permanent), filling in the relevant documents. Principles of rehabilitation and sanatorium treatment. Principles of rational and preventive nutrition. Organization of the "School of Health" for patients.

TOPIC 30. Final module control

10. STRUCTURE OF EDUCATIONAL DISCIPLINE

Names of content modules and topics	Amount of hours				
	Total	including			
		Classroom		Independent students' work	Individual work
		Lectures	Practicals		
1	2	3	4	5	6
Module 1					
Content module 1. Diagnostics, treatment and prophylaxis of endocrine system diseases					
Topic 1. Diabetes mellitus, classification, etiology, pathogenesis, clinical presentation, diagnostics.	8	2	4	3	Report of the abstract in a practical lesson - Report at clinical conferences of departments - Participation in the work of the student group - Conducting research and
Topic 2. Diabetes mellitus type 1 and 2, modern approaches to the treatment.	7		4	2	
Topic 3. Chronic complications of diabetes mellitus: diabetic retinopathy, nephropathy, neuropathy and the diabetic foot. Clinical course and treatment peculiarities of diabetic patients during surgery and pregnancy. Diabetes-associated emergency states.	8	-	5	3	
Topic 4. Iodine deficiency thyroid disorders. Signs of endemic region according to WHO-criteria. Clinical presentation, diagnostics, prophylaxis and treatment. Hypothyroidism. Classification,	8	2	4	3	

clinical picture, diagnostics and treatment. Thyroiditis.					writing articles - Participation in competitions in the discipline - Writing a medical history - Curation of patients with filling in the card of examination of the patient
Topic 5. Thyrotoxicosis. Clinical forms. Diagnostics, treatment. Thyroid cancer and parathyroid diseases. Management of the patient in endocrinology clinic.	9		5	3	
Topic 6. Chronic adrenal insufficiency. Etiology, pathogenesis, clinical picture, diagnostics, prevention and treatment. Adrenal crisis. Hormone-active adrenal tumors.	8	2	4	3	
Topic 7. Disorders of the hypothalamo-hypophyseal system, growth disturbances. Obesity. Gonadal diseases.	8		4	3	
Topic 8. Case history defence. Concluding control.	4	-	4	-	
Total on the content module 1	60	6	34	20	
Credits ECTS – 2					
Content module 2. Medical genetics					
Topic 9. Subject and tasks of medical genetics. The role of heredity in human pathology. Clinic-genealogical method. Cytogenetic and molecular genetics methods. Biochemical methods.	4	0	4	0	
Topic 10. Semiotics of hereditary diseases. Features of manifestations of hereditary diseases. Morphogenetic variants of development. Congenital malformations.	4	0	4	0	
Topic 11. General characteristics of monogenic pathology. Clinics and genetics of some forms of monogenic diseases. Hereditary diseases of metabolism. Principles of treatment of hereditary diseases, rehabilitation and social adaptation. Metabolic disorders.	4	0	4	0	
Topic 12. General characteristics of chromosomal diseases. Clinic of basic forms of chromosomal diseases. General characteristics of multifactorial diseases. Determination of genetic predisposition. Prevention measures.	4	0	4	0	
Topic 13. General characteristics of mitochondrial pathology.	4	0	4	0	

Clinic, diagnosis, treatment. Levels and ways of prevention of hereditary diseases. Medical genetic counseling. Prenatal diagnosis. Screening programs.					
Total on the content module 2	20	0	20	0	35
Credits ECTS – 1					
Content module 3. Fundamentals of diagnosis, treatment and prevention of diseases in gastroenterology.					
Topic 14. The main symptoms of gastrointestinal and hepatobiliary disorders. Methods of investigations in gastroenterology, hepatology and pancreatology. Gastroesophageal reflux disease. Dyspepsia. Chronic gastritis.	9	2	6	1	
Topic 15. Peptic ulcer of the stomach and duodenum	8	2	5	1	
Topic 16. Celiac disease and other enteropathies. Inflammatory bowel diseases. Irritable bowel syndrome	11	4	6	1	
Topic 17. Gallstone disease, chronic cholecystitis and functional biliary disorders	9	2	6	1	
Topic 18. Chronic hepatitis	9	2	6	1	
Topic 19. Liver Cirrhosis.	8	2	5	1	
Topic 20. Chronic pancreatitis	8	2	5	1	
Total on the content module 3	62	16	39	7	
Credits ECTS – 2					
Content module 4. Diagnostics, treatment and prevention of main renal disorder					
Topic 21. The main symptoms of renal disorders. Methods of investigations in nephrology. Glomerulonephritis	9	2	6	2	
Topic 22. Pyelonephritis. Tubulointerstitial nephritis and renal amyloidosis	9	2	6	1	
Topic 23. Acute kidney injury. Chronic kidney disease.	9	2	6	1	
Total on the content module 4	28	6	18	4	
Credits ECTS – 1					
Content module 5. Diagnostics, treatment and prevention of main musculoskeletal system disorders and connective tissue diseases					
TOPIC 24. Basic symptoms and methods of investigations in rheumatology. Rheumatic fever	8	2	5	1	
TOPIC 25. Rheumatoid polyarthritis	8	2	5	1	
TOPIC 26. Connective tissue diseases (systemic lupus erythematosus, systemic sclerosis, dermatomyositis).	9	2	6	2	
TOPIC 27. Systemic vasculitis	9	2	6	2	
TOPIC 28. Osteoarthritis. Gout	8	2	5	1	
TOPIC 29. Seronegative spondyloarthropathies	9	2	6	2	
Total on the content module 5	54	12	33	9	
Credits ECTS – 2					

FINAL MODULE CONTROL	6	-	6	-	
TOTAL HOURS	240	40	150	50	
TOTAL CREDITS ECTS- 8					

11. THEMATIC PLAN OF LECTURES

№	Name of topic	Amount of hours
1.	Diabetes mellitus. Etiology, pathogenesis, clinical picture,diagnostics, differential diagnosis, treatment	2
2.	Thyroid gland disorders	2
3.	Disorders of the adrenal glands and hypothalamo-hypophyseal system	2
4.	Gastroesophageal reflux disease. Gastric dyspepsia and chronic gastritis.	2
5.	Peptic ulcer of the stomach and duodenum.	2
6.	Gallstone disease, chronic cholecystitis.	2
7.	Chronic pancreatitis.	2
8.	Celiac disease and other enteropathies.	2
9.	Inflammatory bowel diseases. Irritable bowel syndrome.	2
10.	Chronic hepatitis.	2
11.	Liver cirrhosis.	2
12.	Rheumatic fever.	2
13.	Rheumatoid arthritis.	2
14.	Systemic connective tissue diseases.	2
15.	Systemic vasculitis.	2
16.	Osteoarthritis and gout.	2
17.	Seronegative spondyloarthropathy.	2
18.	Glomerulonephritis.	2
19.	Pyelonephritis, tubulointerstitial nephritis.	2
20.	Acute kidney injury. Chronic kidney disease.	2
Разом		40

12. THEMATIC PLAN OF PRACTICAL (SEMINAR) CLASSES

№	Name of topic	Amount of hours
1.	Diabetes mellitus, classification, etiology, pathogenesis, clinical presentation, diagnostics.	4
2.	Diabetes mellitus type 1 and 2, modern approaches to the treatment.	4
3.	Chronic complications of diabetes mellitus: diabetic retinopathy, nephropathy, neuropathy and the diabetic foot. Clinical course and treatment peculiarities of diabetic patients during surgery and pregnancy. Diabetes-associated emergency states.	5
4.	Iodine deficiency thyroid disorders. Signs of endemic region according to WHO–criteria. Clinical presentation, diagnostics, prophylaxis and treatment. Hypothyroidism. Classification, clinical picture, diagnostics and treatment. Thyroiditis.	4
5.	Thyrotoxicosis. Clinical forms. Diagnostics, treatment. Thyroid cancer and parathyroid diseases. Management of the patient in endocrinology clinic.	5
6.	Chronic adrenal insufficiency. Etiology, pathogenesis, clinical picture, diagnostics, prevention and treatment. Adrenal crisis. Hormone-active adrenal tumors.	4
7.	Disorders of the hypothalamo-hypophyseal system, growth disturbances. Obesity. Gonadal diseases.	4

8.	Case history defence. Concluding control.	4
9.	Subject and tasks of medical genetics. The role of heredity in human pathology. Clinic-genealogical method. Cytogenetic and molecular genetics methods. Biochemical methods.	4
10.	Semiotics of hereditary diseases. Features of manifestations of hereditary diseases. Morphogenetic variants of development. Congenital malformations.	4
11.	General characteristics of monogenic pathology. Clinics and genetics of some forms of monogenic diseases. Hereditary diseases of metabolism. Principles of treatment of hereditary diseases, rehabilitation and social adaptation. Metabolic disorders.	4
12.	General characteristics of chromosomal diseases. Clinic of basic forms of chromosomal diseases. General characteristics of multifactorial diseases. Determination of genetic predisposition. Prevention measures.	4
13.	General characteristics of mitochondrial pathology. Clinic, diagnosis, treatment. Levels and ways of prevention of hereditary diseases. Medical genetic counseling. Prenatal diagnosis. Screening programs. Concluding control	4
14.	The main symptoms of digestive diseases. Methods of research in gastroenterology, hepatology and pancreatology. Gastroesophageal reflux disease. Dyspepsia. Chronic gastritis.	6
15.	Peptic ulcer of stomach and duodenum.	5
16.	Celiac disease and other enteropathies. Inflammatory bowel diseases. Irritable bowel syndrome.	6
17.	Gallstone disease, chronic cholecystitis and functional bile disorders.	6
18.	Chronic hepatitis.	6
19.	Liver cirrhosis.	5
20.	Chronic pancreatitis.	5
21.	Main rheumatological symptoms and methods of investigation in rheumatology. Rheumatic fever.	5
22.	Rheumatoid arthritis.	5
23.	Systemic connective tissue diseases (systemic lupus erythematosus, systemic scleroderma, dermatomyositis).	6
24.	Systemic vasculitis.	6
25.	Osteoarthritis. Gout.	5
26.	Seronegative spondyloarthropathies.	6
27.	Main symptoms of nephrological pathology. Methods of investigation in nephrology. Glomerulonephritis.	6
28.	Pyelonephritis. Tubulointerstitial nephritis and kidney amyloidosis.	6
29.	Acute kidney injury. Chronic kidney disease.	6
30.	The final module control.	6
Total		150

13. THEMATIC PLAN OF INDIVIDUAL WORK

№	Name of topic	Amount of hours
1.	Preparation for practical classes, including: mastering the skills to analyze the data of laboratory research methods (glucose tolerance test, glycemic and glucosuric profile, C-peptide, HbA1c); mastering the skills of providing medical care in patients with acute phase, diabetic and hypoglycemic coma; mastering the skills of determining the phase of goiter; mastering the skills of interpretation of ultrasound and Doppler data of the thyroid gland; mastering the skills of interpretation of ECG results and reflexometry to characterize the function of the thyroid gland; mastering the skills of interpretation of hormonal examination data, ultrasound examination, adrenal arteriography; mastering the skills of interpreting computed tomography data, MRI of the adrenal glands; mastering the	30

№	Name of topic	Amount of hours
	skills of interpretation of craniogram data and CT, MRI of the skull; mastering the skills of determining the degree of obesity by BMI; mastering the skills of sexual development assessment; mastering the skills of interpretation of "bone age" according to radiography; mastering the skills of interpretation of endoscopic examination of the digestive tract; mastering the skills of data interpretation of radiological (sonological and sonographic) examination of the digestive tract and abdominal organs; mastering the skills of interpreting the data of the study of the secretory function of the stomach (pH-metry); mastering the skills of interpreting data from microbiological and biochemical studies of bile; mastering the skills of interpreting data from biochemical (functional liver tests) blood tests; mastering the skills of interpretation of enzyme-linked immunosorbent assays of blood and feces; mastering the skills of interpretation of radiological data of joints; mastering the skills of data interpretation echocardiography; mastering the skills to analyze laboratory data (general blood test, general urine analysis, according to Nechiporenko and Zymnitsky, data from microbiological examination of urine, total protein and protein fractions, creatinine, urea, blood uric acid, blood electrolytes, immune status, acute phase blood counts, data of serological researches at autoimmune processes, laboratory indicators of a functional condition of a liver and kidneys); mastering the skills of interpretation of data of radiological studies of the urinary system; mastering the skills of providing medical care in acute renal failure	
3.	Independent curation of patients with filling in the patient's examination card	10
4.	Independent curation of patients with writing an academic history	5
5.	Individual work: <ul style="list-style-type: none"> • Report of the abstract in a practical lesson • Report at clinical conferences of departments • Report of the patient's medical history in practice • Writing abstracts, articles 	5
Разом		50

14. LIST OF INDIVIDUAL TASKS :

- Independent supervision of patients with filling in the patient's examination card
- Independent curation of patients with writing an academic history
- Individual work: report of the abstract in a practical lesson
 - Diet therapy for diabetes
 - Reasoning for thyroid cancer
 - Cryptorchidism
 - Climax in men and women
 - Gastric dyspepsia
 - Malabsorption and maldigestion syndromes
 - Autoimmune hepatitis
 - Systemic vasculitis
 - Reactive arthropathy
 - Renal replacement therapy
- Report at clinical conferences
- Writing abstracts, articles

15. LIST OF THEORETICAL TASKS TO THE FINAL MODULE CONTROL

1. Definition of diabetes mellitus. Epidemiology of diabetes in Ukraine and the world, prognosis, prevalence of diabetes in different age groups. Etiology and pathogenesis of diabetes mellitus. Type

1 diabetes mellitus: the role of viral infection and autoimmune processes, genetic predisposition. Type 2 diabetes: the role of genetic predisposition, obesity, external factors.

2. Insulin resistance and impaired insulin secretion. Classification of glycemc disorders (WHO, 1999), clinical forms of diabetes mellitus. The main clinical symptoms of diabetes.

3. Signs of different types of diabetes. Characteristics of lesions of internal organs in diabetes mellitus: cardiovascular system, hepatobiliary system, urinary organs, diabetic osteoarthropathy.

4. Diagnosis of diabetes. Criteria for the diagnosis of diabetes mellitus and other categories of hyperglycemia (WHO, 1999). Indications and rules for glucose tolerance test. Diagnostic value of glycated hemoglobin, fructosamine, C-peptide, glucosuria, ketonuria.

5. The main methods of treatment of diabetes: diet therapy, dosed exercise, hypoglycemic pharmacotherapy, teaching the patient self-control.

6. Diet therapy of diabetes. Modern principles of diet therapy: physiology, energy value, restriction of refined carbohydrates, consumption of dietary fiber, trace elements, vitamins. Dosed physical activity and rules of it's purpose.

7. Criteria for compensation of carbohydrate metabolism in patients with type 1 diabetes. Insulin therapy. Classification of insulin preparations, short-acting and long-acting preparations, ultra-short and long-acting insulin analogues. Characteristics of the main insulin preparations. Indications, contraindications.

8. Calculation of daily insulin requirements. Insulin dose adjustment with bread units. Insulin therapy regimen: traditional and intensive (basis-bolus) insulin therapy.

9. Complications of insulin therapy: hypoglycemic conditions, insulin allergy, post-injection lipodystrophy, insulin resistance, chronic insulin overdose (Somogy syndrome), insulin edema.

10. Basic principles of treatment of type 2 diabetes. Criteria for compensation of metabolism, achievement of normoglycemia. Oral hypoglycemic drugs. Derivatives of sulfonylureas, non-sulfonylurea insulin secretogens, biguanides, glitazones, acarbose. Characteristics of drugs, their mechanism of action, side effects, indications and contraindications.

11. Diabetic nephropathy: stages of development, diagnosis, differential diagnosis, treatment and prevention.

12. Diabetic retinopathy: stages of the process, diagnosis, prevention and treatment.

13. Diabetic neuropathy, classification, diagnosis and treatment.

14. Diabetic foot syndrome: classification, diagnosis, treatment algorithm.

15. Diagnosis and surgical treatment of diabetic angiopathy of the lower extremities. Diabetic gangrene. Features of urgent and planned surgical interventions in patients with diabetes mellitus.

16. Principles of treatment of pregnant women with diabetes.

17. Hypoglycemic coma, hypoglycemic states. Etiology, pathogenesis, clinical picture, diagnosis, treatment.

18. Ketoacidotic conditions with diabetic (hyperketonemic) coma. Etiology, pathogenesis, clinical picture, diagnosis, differential diagnosis, treatment.

19. Hyperosmolar (non-acidotic) diabetic coma.

20. Lactic acidosis and coma.

21. Definition of "iodine deficiency". Manifestations of iodine deficiency. Determination of iodine deficiency areas by the prevalence of goiter in different age groups and data on ioduria.

22. Determining the size of the thyroid gland. Age dynamics of gland volume.

23. Definition of goiter. The concept of simple non-toxic and nodular forms of goiter. The impact of exogenous environmental factors and man-made disasters on nuclear power plants on the condition of the thyroid gland and the prevalence of its pathology.

24. Iodine prophylaxis: mass, group, individual. The importance of iodized salt in the prevention of iodine deficiency diseases. Restrictions on the use of drugs based on potassium iodide.

25. Diseases accompanied by thyrotoxicosis. Etiology, pathogenesis, clinical manifestations of diffuse toxic goiter, thyrotoxic and endocrine ophthalmopathy. Rationale for the diagnosis of thyrotoxicosis.

26. Age features of toxic goiter in children and the elderly. Clinical differences of nodular toxic goiter.

27. Medical, surgical treatment of toxic goiter, use of I131 for therapeutic purposes. Complications of goiter treatment. Medical and social examination of patients with toxic goiter.
28. Hypothyroidism, etiology, pathogenesis and clinical signs. Justification of the diagnosis.
29. Hypothyroidism primary, central, peripheral, subclinical, transient. Timely diagnosis of congenital hypothyroidism. Subclinical hypothyroidism. Pregnancy and hypothyroidism. Age features of hypothyroidism. Hypothyroidism on the background of autoimmune polyendocrinopathies.
30. Treatment of hypothyroidism. Medical and social examination of patients with hypothyroidism.
31. Thyroiditis: classification, etiology, clinical course, diagnosis, differential diagnosis, treatment.
32. Pathomorphological classification of thyroid tumors. Rationale for the diagnosis of thyroid cancer. The role of the Chernobyl accident in the increase in the incidence of thyroid cancer.
33. Modern scheme of treatment, rehabilitation and dispensary observation of patients with thyroid cancer.
34. Hyperparathyroidism. Clinic, clinical forms, diagnostics, differential diagnosis, treatment. Drug therapy. Indications for surgical treatment. Postoperative period and rehabilitation of patients.
35. Hypoparathyroidism: etiology, pathogenesis, classification, clinical picture, diagnosis, differential diagnosis, treatment, prevention.
36. Chronic adrenal insufficiency (Addison's disease): etiology, pathogenesis, clinical picture, diagnosis, treatment, prevention.
37. Acute adrenal insufficiency: etiology, pathogenesis, clinical picture, diagnosis, prevention and treatment.
38. Itsenko-Cushing's syndrome (corticosteroma, glucosteroma): clinical picture, diagnosis, differential diagnosis, treatment.
39. Androsteroma, corticosteroma: clinical picture, diagnosis and differential diagnosis, treatment.
40. Primary hyperaldosteronism (Kohn's syndrome): clinical picture, diagnosis and differential diagnosis, treatment.
41. Pheochromocytoma: clinical picture, diagnosis and differential diagnosis, treatment.
42. Classification of hypothalamic-pituitary diseases. Acromegaly: etiology and pathogenesis, clinical picture, diagnosis and differential diagnosis, treatment.
43. Itsenko-Cushing's disease: etiology and pathogenesis, classification, clinical picture, diagnosis and differential diagnosis, treatment.
44. Hyperprolactinemia syndrome. Classification. Etiology and pathogenesis. Clinical picture. Diagnosis, differential diagnosis. Treatment.
45. Hypopituitarism. Etiology and pathogenesis. Clinical picture. Diagnosis and differential diagnosis. Treatment.
46. Diabetes mellitus. Etiology and pathogenesis. Clinical picture. Diagnosis and differential diagnosis. Treatment.
47. Hypopituitarism with predominant somatotrophic insufficiency (pituitary dwarfism). Pituitary gigantism. Etiology and pathogenesis. Clinical picture. Diagnosis and differential diagnosis. Treatment.
48. Obesity. Etiology and pathogenesis. Classification. Clinical picture. Diagnosis. Treatment.
49. Shereshevsky-Turner syndrome.
50. Syndrome of hermaphroditism.
51. Cryptorchidism.
52. Syndrome of mono- and anarchism.
53. Klinefelter's syndrome.
54. Disorders of sexual development in boys and girls.
55. Climax in women and men.
56. The main gastrointestinal complaints. Determination of the main gastroenterological symptoms (pain, heartburn, dyspepsia, nausea, vomiting, bleeding, hepatomegaly, ascites, jaundice, diarrhea, constipation, etc.). General and disturbing symptoms. Physical symptoms of gastrointestinal

pathology. Methods of physical examination of patients with gastrointestinal pathology. Symptomatic treatment

31. Subject and objectives of medical genetics.
32. The significance of medical genetics for medicine.
33. Frequency of congenital and hereditary pathology in different periods of ontogenesis.
34. Specific gravity of congenital and hereditary pathology in the structure of morbidity and mortality.
5. The variability of hereditary signs as the basis of pathology.
35. The role of heredity and the environment in the development of pathology.
36. Classification of hereditary pathology.
37. The role of paraclinical research methods in the diagnosis of congenital and hereditary pathology.
38. Cytogenetic and molecular-cytogenetic methods. Indications for cytogenetic investigations.
39. Clinical and genealogical method.
40. Method of pedigree drafting.
41. Types of inheritance.
42. Mitochondrial heredity.
43. Biochemical methods. Indications for research.
44. Molecular genetic methods. Indications and possibilities of the method.
45. Semiotics of hereditary diseases.
46. Features of clinical manifestations of congenital and hereditary pathology.
47. General principles of clinical diagnosis of congenital and hereditary pathology.
48. Features of the inspection and physical examination of the patient and his family members.
49. Congenital malformations.
50. Congenital morphogenetic variants.
51. The syndromological approach in the diagnosis of congenital and hereditary pathology.
52. Monogenic diseases. Definition of the term. Etiology and classification.
53. General regularities of the pathogenesis of monogenic pathology.
54. The main features of the clinical picture of monogenic pathology.
55. Clinical polymorphism of monogenic pathology and its causes.
56. Genetic heterogeneity of monogenic diseases.
57. Clinic, genetics and diagnostics of neurofibromatosis.
58. Clinic, genetics and diagnostics of congenital hypothyroidism.
59. Clinic, genetics and diagnosis of phenylketonuria.
60. Clinic, genetics and diagnosis of cystic fibrosis.
61. Clinic, genetics and diagnosis of Marfan Syndrome.
62. Clinic, genetics and diagnostics of homocystinuria.
63. Clinic, genetics and diagnostics of adrenogenital syndrome.
64. Clinic, genetics and diagnosis of Ehlers-Danlos syndrome.
65. Clinic, genetics and diagnostics of oncogenetic syndromes.
66. Genomic imprinting. Definition of the term.
67. Diseases of genomic imprinting. Etiology, pathogenesis, clinical forms.
68. Chromosomal diseases. Definition of the term. Etiology and classification.
69. Effects of chromosomal anomalies in ontogenesis.
70. Pathogenesis of chromosomal diseases.
71. General characteristics of chromosomal diseases.
72. Clinical and genetic characteristic of Patau's syndrome.
73. Clinical and genetic characteristics of the Edwards syndrome.
74. Clinical and genetic characteristics of Down syndrome.
75. Clinical and genetic characteristics of trisomy 22.
76. Clinical and genetic characteristics of Turner syndrome.
77. Clinical and genetic characteristic of polysomy of sexual chromosomes.
78. Clinical and genetic characteristic of syndromes of partial aneuploidy.
79. Clinical and genetic characteristics of microcytogenetic syndromes.

80. Factors of the increased risk of the birth of children with chromosomal diseases.
81. General characteristics of mitochondrial pathology.
82. Classification of mitochondrial diseases.
83. Mitochondrial heredity.
84. General principles of diagnosis and treatment of mitochondrial pathology.
85. Mitochondrial diseases caused by mutations of mitochondrial DNA.
86. Clinic, genetics, diagnostics, treatment of Kerns-Seir syndrome.
87. Clinic, genetics, diagnostics, treatment of MELAS syndrome.
88. Clinic, genetics, diagnostics, treatment MERRF syndrome.
89. Clinic, genetics, diagnostics, treatment of Leber's syndrome.
90. Clinic, genetics, diagnostics, treatment of Pearson syndrome.
91. Mitochondrial diseases caused by mutations of nuclear DNA.
92. Diseases with hereditary predisposition. Definition of the term. General characteristics.
93. Monogenic and polygenic forms of diseases with hereditary predisposition.
94. Mechanisms of the development of diseases with hereditary predisposition.
95. Significance of hereditary predisposition in the general pathology of a person.
96. Hereditary pathological reactions to the action of external factors.
97. Prevention of congenital and hereditary pathology. Types of prevention.
98. Genetic bases for the prevention of congenital, hereditary and multifactorial pathology.
99. Levels of prevention.
100. Family planning and preconceptional prevention.
101. Environmental protection as a component of prevention.
102. Genetic counseling.
103. Terms and indications to the Genetic counseling.
104. Functions of geneticist at Genetic counseling.
105. Efficiency of Genetic counseling.
106. Prenatal diagnosis. General questions. Timing.
107. Mass and selective ultrasound screening of pregnancy.
108. Non-invasive methods of prenatal diagnosis. Methodology. Timing. Opportunities of the method.
109. Invasive methods of prenatal diagnosis. Methodology. Timing. Opportunities of the method. Contraindications. Possible complications.
110. Preclinical diagnostics and preventive treatment.
111. Screening programs. Mass and selective screening programs.
112. Genetic monitoring of congenital and hereditary pathology.
113. Diagnostic methods in gastroenterology. Endoscopic methods: diagnostic possibilities of esophagogastroduodenoscopy, colonoscopy, biopsy, indications, contraindications and restrictions to their implementation, possible complications. Intra-gastric and intraesophageal pH-metry, duodenal probing - informative and clinical evaluation of results. X-ray and isotopic methods for diagnosing diseases of the digestive tract and liver. Ultrasound examination of the abdominal cavity. immunoassay and biochemical research methods. Diagnosis of H.pylori infection and other infectious factors.
114. Gastroesophageal reflux disease: definition, etiology, pathogenesis. The role of gastroesophageal reflux in the development of esophagitis and Barrett's esophagus. Classification. Erosive and non-erosive GERD. Clinical manifestations depending on the variant and stage. Diagnostic criteria, differential diagnosis. Complication. Differentiated therapy. Primary and secondary prevention.
115. Gastric dyspepsia: definition, etiology and pathogenesis, the role of H. pylori in the development of gastroduodenal pathology, classification. Unexamined and functional dyspepsia. Criteria for diagnosis. Differential diagnosis with organic pathology.
116. Modern approaches to the treatment of functional dyspepsia. Primary and secondary prevention. Prognosis and efficiency.
117. Chronic gastritis: definition, etiology and pathogenesis. The role of H. pylori in the development of chronic gastritis. Classification. Non-atrophic and atrophic gastritis. The value of

endoscopic (with morphology) and radiological examination to establish the diagnosis. Criteria for diagnosis.

118. Modern approaches to the treatment of various types of chronic gastritis.

119. Peptic ulcer and other peptic ulcers of the stomach and duodenum. Definition. The role of H. pylori, acid-peptic factor and drugs in the occurrence of peptic ulcers and their recurrence.

120. Features of Hp-positive and Hp-negative ulcers. The value of instrumental and laboratory diagnostic methods. Methods of diagnosis of Hp-infection. Differential diagnosis.

121. Complications of peptic ulcers (perforation, penetration, bleeding, insufficiency of evacuation-motor function).

122. Modern tactics of management of the patient with an ulcer. Eradication therapy. Eradication control.

123. Drug therapy of Hp-negative ulcers. Indications for surgical treatment. Primary and secondary prevention. Prognosis and efficiency.

124. Diseases of the small intestine (celiac disease and other enteropathies): definition, etiology, pathogenesis. The role of intolerance of food components, enzymopathies and immune factors. Diagnostic criteria, differential diagnosis. Complication. Differentiated therapy. Primary and secondary prevention. Prognosis and efficiency.

125. Syndromes of malabsorption and maldigestion.

126. Irritable bowel syndrome, definition, Roman diagnostic criteria. Etiology and pathogenesis. Classification. Clinical manifestations of different options. Diagnostic and exclusion criteria. Differential diagnosis. Treatment of various forms. Primary and secondary prevention. Forecast and efficiency.

127. Nonspecific colitis (nonspecific ulcerative colitis and Crohn's disease): definition, etiology and pathogenesis. Classification. Features of the clinical course depending on the degree of activity, severity and phase of the course. Diagnostic criteria. Differential diagnosis. Complications and diseases associated with ulcerative colitis (sclerosing cholangitis, spondylitis, arthritis, dermatoses). Treatment.

128. Gallstone disease, chronic cholecystitis and functional biliary disorders. Definition. Etiology, pathogenesis. Importance of infection, motility disorders and dyscholia in the development of chronic non-calculous cholecystitis, cholangitis and gallstone disease. Features of the clinical course. The role of instrumental methods in diagnosis. Differential diagnosis. Complication. Differentiated treatment depending on the clinical variant and the presence of complications. Indications for surgical treatment. Primary and secondary prevention. Forecast and efficiency.

129. Chronic hepatitis. Definition. Classification. The role of persistence of the virus, drug agents, immune disorders and alcohol. Methods of diagnosis of viral infection.

130. Autoimmune hepatitis, chronic viral, drug-induced hepatitis. Alcoholic liver disease. Basic clinical and biochemical syndromes. Features of the clinical course and diagnosis of individual forms. Significance of morphological, biochemical and radioisotope methods. Differential diagnosis. Complication. Features of treatment of various forms. Primary and secondary prevention. Forecast and efficiency.

131. Cirrhosis of the liver. Definition. Significance of viral infection, nutritional factors, alcohol, toxic substances and immunological disorders. Classification. Features of clinical manifestations and diagnosis of different options. Differential diagnosis. Hepatic failure and other complications. Differentiated therapy. Immediate treatment of complications. Gastrointestinal lesions in HIV infection. Primary and secondary prevention. Forecast and efficiency.

132. Chronic pancreatitis. Definition. Significance of various etiological factors. Classification. Features of the clinical course, diagnosis and differential diagnosis depending on the form and location of the pathological process. Complication. Research methods in the diagnosis of pancreatitis. Differentiated treatment. Primary and secondary prevention. Forecast and efficiency.

133. The main rheumatological complaints and the definition of the main rheumatological symptoms (muscle and joint pain, back pain, etc.). General and specific symptoms. Physical symptoms of rheumatic pathology. Methods of physical examination of patients with rheumatic pathology. Standard echocardiography and Doppler, indications, importance and clinical evaluation

of results. X-ray methods of diagnosis of heart, joint and spine diseases. Computer tomography and NMR. Immunological and biochemical research methods.

134. Acute rheumatic fever and chronic rheumatic heart disease. Definition. The role of streptococcal infection and immunological reactivity in the development of acute rheumatic fever. Classification. Clinical picture (carditis, polyarthritis, chorea, skin lesions). The value of laboratory and instrumental research methods. Diagnostic criteria. Differential diagnosis. Complication. Treatment based on the degree of activity. Primary and secondary prevention. Forecast and efficiency.

135. Rheumatoid arthritis. Definition. Etiological factors, pathogenesis. The role of immune status disorders in the development of the disease. Classification and nomenclature. Clinical picture with activity of the pathological process, the stage of the disease, systemic manifestations. The value of laboratory and instrumental methods for the diagnosis of the disease, its stage and activity. Diagnostic criteria, the importance of the study of synovial fluid. Differential diagnosis. Complication. Treatment strategy. Basic therapy. Tactics of treatment with glucocorticosteroids and nonsteroidal anti-inflammatory drugs. Prevention. Forecast and efficiency.

136. Systemic lupus erythematosus. Definition. Etiological factors and pathogenesis. Classification. Clinical manifestations depending on the damage to organs and systems, disease activity. The value of laboratory, including immunological, research methods. Diagnostic criteria. Differential diagnosis. Complication. Principles of treatment. Pulse therapy. Prevention. Forecast and efficiency.

137. Systemic scleroderma. Etiological factors, pathogenesis. Classification. Clinical picture depending on the damage to organs and systems. Diagnostic criteria, Differential diagnosis. Complication. Principles of treatment. Prevention. Forecast and efficiency.

138. Dermatomyositis. Etiological factors, pathogenesis. Classification. Clinical picture depending on the damage to organs and systems. Diagnostic criteria, Differential diagnosis. Complication. Principles of treatment. Prevention. Forecast and efficiency.

139. Hemorrhagic vasculitis (Shenlein-Genoch purpura, hypersensitive vasculitis). Definition. Etiology, pathogenesis. Clinical manifestations, diagnostic criteria. Differential diagnosis. Treatment. Prevention. Forecast and efficiency.

140. Periarteritis nodosa. Definition. Etiology, pathogenesis. Clinical manifestations, diagnostic criteria. Differential diagnosis. Treatment. Prevention. Forecast and efficiency.

141. Osteoarthritis. Definition. Etiology, pathogenesis. Classification. Clinical picture depending on the location of the lesions. Diagnosis. Differential diagnosis. Drug and non-drug treatment. Primary and secondary prevention. Forecast and efficiency.

142. Ankylosing spondylitis. Definition. Etiological factors, pathogenesis. Classification. Clinical picture. The value of instrumental and laboratory methods. Diagnostic criteria. Differential diagnosis. Treatment. Prevention. Forecast and efficiency.

143. Reactive arthropathy. Definition. Etiology, pathogenesis. Classification. Clinical manifestations of reactive arthritis of various etiologies. Reiter's syndrome, the importance of laboratory and instrumental diagnostic methods. Diagnostic criteria, Differential diagnosis. Treatment, the role of antibacterial therapy. Primary and secondary prevention. Forecast and efficiency.

144. Gout. Definition. Etiology, pathogenesis. Classification. Features of the joint syndrome and lesions of internal organs. Criteria for diagnosis. Differential diagnosis. Complication. Principles of differentiated treatment. Prevention. Forecast and efficiency.

145. Glomerulonephritis. Definition. Etiology, role of streptococcal infection and immunological disorders in the development of the disease. Pathogenesis of the main clinical syndromes. Classification. Clinical manifestations and diagnosis of some forms. Differential diagnosis. Complications (eclampsia, acute renal and chronic renal failure, etc.). Treatment with morphological variant and clinical course. Primary and secondary prevention. Forecast and efficiency.

146. Definition, etiology, pathogenesis of nephrotic syndrome. Clinical manifestations. Diagnostic criteria and differential diagnosis. Complication. Treatment.

147. Pyelonephritis. Definition. Primary and secondary pyelonephritis. Clinical manifestations. Instrumental and laboratory diagnostic methods. Differential diagnosis. Complication. Treatment.

148. Definition, etiology, pathogenesis of tubulointerstitial nephritis. Clinical manifestations. Diagnostic criteria and differential diagnosis. Complication. Treatment. Emergency care for acute renal failure. Primary and secondary prevention. Forecast and efficiency.

149. Definition, etiology, pathogenesis of amyloidosis. Classification. Clinical manifestations of renal amyloidosis. Diagnostic criteria. Differential diagnosis. Complication. Treatment.

150. Acute and chronic renal failure. Definition. Etiological factors. Pathogenesis of lesions of organs and systems, their clinical manifestations. The concept of "chronic kidney disease". Classification. Clinic and changes in laboratory parameters depending on the stage. Differential diagnosis. Complication. Treatment at different stages. Renal replacement therapy: hemodialysis, kidney transplantation.

16. LIST OF PRACTICAL SKILLS AND TASKS TO THE FINAL MODULE CONTROL

1. Mastering skills to analyze the data of laboratory research methods (glucose tolerance test, glycemic and glucosuric profile, C-peptide, HbA1c).
2. Mastering the skills of providing medical care in patients with ketoacidosis, diabetic and hypoglycemic coma.
3. Mastering the skills of determining goiter's stage.
4. Mastering the skills of interpretation of ultrasound and Doppler data of the thyroid gland.
5. Mastering the skills of interpretation of ECG results and reflexometry to characterize thyroid function.
6. Mastering the skills of interpretation of hormonal examination data, ultrasound examination, adrenal arteriography.
7. Mastering the skills of interpretation of computed tomography, MRI of the adrenal glands.
8. Mastering the skills of interpretation of craniogram data and CT, MRI of the skull.
9. Mastering the skills of determining the degree of obesity by BMI.
10. Mastering the skills of assessing sexual development.
11. Mastering the skills of interpretation of "bone age" according to radiography.
12. Mastering the skills of interpreting data of endoscopic examination of the digestive tract.
13. Mastering the skills of interpreting radiological (radiological and sonographic) data of the digestive tract and abdominal organs.
14. Mastering the skills of interpretation of data from the study of the secretory function of the stomach (pH-metry).
15. Mastering the skills of interpreting data from microbiological and biochemical studies of bile.
16. Mastering the skills of interpreting biochemical (functional liver tests) blood test data.
17. Mastering the skills of interpretation of immunoenzyme-linked assays of blood and feces.
18. Technique of puncture of the abdominal cavity (paracentesis).
19. Technique of bowel cleansing (hypertonic, cleansing and siphon enemas, finger cleansing of the rectum).
20. Prescribe treatment, determine the prognosis, conduct primary and secondary prevention of diseases of the digestive tract, hepatobiliary system and pancreas.
21. Organization of medical nutrition. Consultations of patients on the issues of rational and dietary nutrition.
22. Technique of preparation of phytocollections, infusions, decoctions.
23. Mastering the skills of measuring blood pressure.
24. Mastering the skills to analyze laboratory data (general blood test, general urine analysis, according to Nechiporenko and Zymnitsky, data from microbiological examination of urine, total protein and protein fractions, creatinine, urea, blood uric acid, blood electrolytes,

- immune status, acute blood parameters, data of serological researches at autoimmune processes, laboratory indicators of a functional condition of a liver and kidneys).
25. Mastering the skills of interpretation of radiological data of the urinary system.
 26. Mastering the skills of providing medical care in acute renal failure.

List 1 (syndromes and symptoms)

1. acromegaly
2. anemic syndrome
3. anuria and oliguria
4. arterial hypertension
5. arterial hypotension
6. chest pain
7. abdominal pain
8. pain in the limbs and back
9. pain in the perineum
10. sore throat
11. vomiting
12. broncho-obstructive syndrome
13. bulbar syndrome
14. effusion in the pleural cavity
15. hallucinatory-paranoid syndrome
16. fever
17. hemorrhagic syndrome
18. hypoglycemia
19. hyperglycemia
20. exanthema, enanthema
21. hepatomegaly and hepatolienal syndrome
22. headache
23. dysuria
24. dysmenorrhea
25. dyspepsia
26. dysphagia
27. diarrhea
28. jaundice
29. shortness of breath
30. asphyxia
31. fasten
32. dizziness
33. child growth retardation
34. cardiomegaly
35. cough
36. intestinal obstruction
37. coma
38. external bleeding
39. internal bleeding
40. hemoptysis
41. lactorrhea
42. lymphadenopathy
43. meningeal syndrome
44. edematous syndrome
45. obesity (+ body weight)
46. premature sexual development
47. polyuria
48. portal hypertension
49. speech disorder (aphasia)
50. heart rhythm and conduction disturbances
51. sudden cardiac arrest
52. disorders of consciousness
53. itching of the skin
54. urinary syndrome
55. dehydration syndrome
56. indigestion syndrome
57. thirst
58. stridor

59. articular syndrome
60. convulsions
61. weight loss
62. cyanosis
63. gastrointestinal bleeding
64. Test for latent tetany
(hypoparathyroidism)
65. Definition of symptoms of thyrotoxicosis
66. Determination of ocular symptoms in
thyrotoxicosis
67. Definition of Marie's symptom

List 2 (diseases)

I)

Diseases of digestive organs:

1. ulcer disease
2. gastroesophageal reflux disease, esophagitis
3. gastritis, duodenitis
4. acute and chronic hepatitis
5. acute and chronic pancreatitis
6. enteritis, colitis
7. peptic ulcers of the stomach and duodenum
8. peritonitis
9. perforation of a hollow organ
10. liver failure
11. malabsorption syndrome
12. stenosis of the pylorus of the stomach
13. functional gastrointestinal disorders
14. cholecystitis, cholangitis, gallstone disease, choledocholithiasis
15. liver cirrhosis
16. gastrointestinal bleeding

II) Diseases of the genitourinary system:

17. amyloidosis of the kidneys
18. glomerulonephritis
19. nephrotic syndrome
20. pyelonephritis
21. urolithiasis
22. tubulointerstitial nephritis
23. chronic kidney disease

III) Diseases of the musculoskeletal system and connective tissue:

24. ankylosing spondyloarthritis
25. acute rheumatic fever
26. dermatomyositis and polymyositis
27. osteoarthritis
28. gout
29. reactive arthritis
30. rheumatoid arthritis
31. systemic scleroderma
32. systemic lupus erythematosus
33. systemic vasculitis (polyarteritis nodosa, hemorrhagic vasculitis, hypersensitivity vasculitis)
34. chronic rheumatic disease
35. juvenile rheumatoid arthritis

IV) Diseases of the endocrine system, nutritional disorders and metabolic disorders:

36. acromegaly and pituitary gigantism

List 3 (emergency conditions)

1. hypertensive crisis
2. hypoglycemia (coma)
3. acute adrenal insufficiency
4. acute kidney damage
5. acute liver failure
6. diabetic coma, including ketoacidotic, hyperosmolar, lacticidemic

7. acute bleeding
8. collapse
9. impaired consciousness and comatose states
10. renal colic
11. biliary colic
12. thyrotoxic crisis
13. hypothyroid crisis
14. hyperparathyroid crisis
15. hypoparathyroid crisis
16. pheochromocytic crisis
17. Addisonian crisis

List 4 (laboratory and instrumental studies)

1. analysis of ascitic fluid
2. analysis of synovial fluid
3. urine analysis according to Zimnytskyi test
4. urine analysis according to Nechiporenko test
5. alpha-amylase activity in blood and urine, fecal elastase 1
6. blood proteins and their fractions, C-reactive protein
7. blood glucose, glycosylated hemoglobin,
8. oral glucose tolerance test,
9. blood lipids and lipoproteins and their fractions
10. blood hormones
11. serum ferritin, iron and copper
12. creatinine, blood and urine urea, glomerular filtration rate
13. blood electrolytes
14. blood aminotransferases
15. total blood bilirubin and its fractions
16. coagulogram
17. blood uric acid
18. blood alkaline phosphatase
19. histomorphological study of biopsy of mucous membranes
20. histomorphological study of muscle and skin biopsy
21. standard ECG (in 12 leads)
22. endoscopic examination of the digestive tract
23. echocardiography and dopplerography
24. general analysis of feces
25. general blood test
26. general analysis of urine
27. sugar and acetone in urine
28. general analysis of cerebrospinal fluid
29. general immunological profile of blood
30. serological reactions in infectious diseases
31. express tests for viral diseases
32. amplification methods for infectious diseases (PCR)
33. serological reactions in autoimmune diseases
34. methods of instrumental visualization of the thyroid gland
35. X-ray contrast angiography
36. methods of instrumental visualization of abdominal organs
37. methods of instrumental visualization of chest cavity organs
38. methods of instrumental visualization of the genitourinary system
39. methods of instrumental visualization of the skull, spine, spinal cord, bones and joints
40. multi-moment fractional study of bile and pH-metry of the stomach and esophagus
41. thyroid hormones test

List 5 (medical manipulations):

1. register a standard 12-lead ECG,
2. to administer medicinal substances (intravenous jet and drip, intraosseous), incl. in field conditions,
3. measure blood pressure,
4. determine blood groups, rhesus belonging,
5. palpate the thyroid gland,
6. to palpate the main arteries of the legs,
7. calculate body mass index,
8. calculate the daily need for insulin for patients according to blood glucose levels,
9. calculate the dose of insulin.

17. METHODS AND FORMS OF IMPLEMENTATION OF THE CONTROL

Assessment per module is defined as the sum of assessments of current educational activities (in points) and assessment of final module control (in points), which is set when assessing theoretical knowledge and practical skills in accordance with the lists defined by the discipline program.

The initial level of knowledge is determined in the first practical lesson with the help of a written test, which consists of test tasks.

Current control. The current control is carried out in accordance with the specific objectives of each practical lesson, the assimilation of content modules (intermediate control) - in the last lesson of each content module. For control it is recommended to use the following tools to diagnose the level of preparation of students: computer tests, monitoring the implementation of practical skills in the methods of examination of the patient with subsequent interpretation of the data, analysis of instrumental and laboratory tests.

The weight of each topic within one module should be the same and is determined by the number of topics in the module.

Final module control. The final module control is carried out upon completion of the study of all topics of the module at the last control lesson from the module.

Conducted by oral questioning, writing papers, tests, solving situational problems, demonstrating practical skills.

The final modular control of module 1 involves 4 stages:

- 1) test control of the level of theoretical training of students.
- 2) demonstration of practical tasks and works from the list recommended for the final modular control (interpretation of the results of laboratory tests of blood, urine, feces, fractional examination of gastric contents, bile, pH-metry, instrumental and radiological methods of research);
- 3) control of practical skills, which consists of examination of the patient (survey, physical examination, drawing up a plan of examination of the patient, justification of the previous diagnosis, differential diagnosis, treatment);
- 4) written (oral) survey on the list of questions to prepare students for the final module control (5 questions and one atypical situational task).

Note. Test control of students' knowledge and demonstration of practical tasks and works are carried out at the penultimate (according to the schedule) practical lesson at the department.

Students who have fully attended the classroom classes in the discipline provided by the curriculum, and in the study of the relevant module scored a number of points not less than the minimum are allowed to the final tests. A student who has not completed all types of work provided for in the curriculum, for good reason, adjustments are made to the individual curriculum and are allowed to work off academic debt by a certain deadline.

18. EVALUATION OF THE LEVEL OF STUDENT TRAINING IN THE DISCIPLINE

Assessment of current educational activities, module control and discipline in general is carried out in accordance with the "Instructions for assessing the educational activities of students of Bucovynian State Medical University in the implementation of the European credit transfer system of educational process" (approved by the Academic Council of May 29, 2014, protocol 9).

The grade in internal medicine is given to students who have passed all the modules of the discipline. The grade in the discipline is the average of the grades for the modules on which the discipline is structured.

Incentive points by the decision of the Academic Council may be added to the number of points in the discipline for students who have scientific publications or won prizes for participation in the Olympiad in the discipline among Ukrainian universities and more.

The objectivity of the assessment of students' learning activities should be checked by statistical methods (correlation coefficient between current performance and the results of the final module control).

The mark on the module is defined as the sum of all the marks for current educational progression and the mark on the concluding module test (total score) after the assessment of theoretical and practical skills listed in the curriculum on the discipline.

Maximal score that can be achieved by the students for each module completion is 200, including 120 (60%) for the current educational progression and 80 (40%) – for the results of the concluding module test.

Criteria for assessing students when studying the module 1

Number of module / number of study hours / number of credits ECTS	Number of content modules, their numbers	Number of practical classes with marks	Conversion into point of the traditional scale				Scores for individual task	Minimum score *
			Traditional scale					
			5	4	3	2		
Module 1. Fundamentals of internal medicine (endocrinology, medical genetics, gastroenterology, nephrology, rheumatology)								
Модуль 1 240/8	5 №1-3	28	4	3	2,5	0	8	70

Module 1. Fundamentals of internal medicine (endocrinology, medical genetics, gastroenterology, nephrology, rheumatology)			
	<i>№ lesson</i>	<i>Maximal points</i>	<i>Minimal points</i>
<i>Content module 1</i>	1	4	2,5
	2	4	2,5
	3	4	2,5
	4	4	2,5
	5	4	2,5
	6	4	2,5
	7	4	2,5
	8	4	2,5
<i>Content module 2</i>	9	4	2,5
	10	4	2,5
	11	4	2,5
	12	4	2,5
	13	4	2,5
<i>Content module 3</i>	14	4	2,5
	15	4	2,5
	16	4	2,5

	17	4	2,5
	18	4	2,5
	19	4	2,5
	20	4	2,5
Content module 4	21	4	2,5
	22	4	2,5
	23	4	2,5
Content module 5	24	4	2,5
	25	4	2,5
	26	4	2,5
	27	-	-
	28	4	2,5
	29	4	2,5
Individual work		8	-
Total		120	70

Conversion into point of the traditional scale :

“excellent” – 4 points;

“good” – 3 points;

“satisfactory” – 2,5 points;

“unsatisfactory” – 0 points.

Types of individual independent work: writing an abstract - 1 point, creating a presentation - 2 points, participating in a student club - 3 points, participating in departmental events and activities - 3 points, publishing abstracts - 4 points, photo design of a class - 6 points, designing a class with additional materials - 6 points, designing a table - 8 points, participating in a conference with a report - 8 points, publishing an article - 8 points.

The maximum score for individual independent work of a student is 8 points.

For the current educational activity the student can receive a maximum of 120 points. This grade is calculated by multiplying the number of points corresponding to the grade "excellent" (4 points) by the number of topics in the module with the addition of points for individual independent work (8 points).

28 topics x 4 = 112 + 8 (individual work) = 120 points.

The minimum number of points that a student can score when studying the module is calculated by multiplying the number of points corresponding to the assessment "satisfactory" (2,5 points) by the number of topics in the module to be assessed (28 topics);

28 topics x 2,5= 70 points.

Discipline scores for students who have successfully completed the discipline program are converted by the department into a traditional four-point scale according to absolute criteria as shown in the table below.

Score on a 200-points scale	Score on a four-point scale
180-200 points	«5»
150 - 179 points	«4»
149 - the minimum number of points that a student must score	«3»
Below the minimum number of points that a student must score	«2»

ECTS scale scores are NOT CONVERTED to a four-point scale and vice versa.

Students enrolled in one faculty, course, one specialty, based on the number of points scored in the discipline, are ranked on the ECTS scale as follows:

Ranking with the assignment of grades "A", "B", "C", "D", "E" is carried out by the deans for students of the relevant course and faculty who study in one specialty and have successfully completed the study of the discipline.

:

Mark <i>ECTS</i>	Statistical indicator
«A»	Best 10 % students
«B»	Next 25 % students
«C»	Next 30 % students
«D»	Next 25 % students
«E»	Last 10 % students

Students who receive grades "FX" and "F" ("2") are not included in the list of ranked students, even after re-taking the module. Such students automatically receive an "E" score after reassembly.

Grades in the discipline "FX", "F" ("2") are given to students who have not enrolled in at least one module of the discipline after completing its study.

The grade "FX" is given to students who have scored the minimum number of points for the current academic activity, but who do not pass the final module control. This category of students has the right to reschedule the final module control according to the approved schedule (but not later than the beginning of the next semester). Reassembly of the final module control is allowed no more than twice.

Grade "F" is given to students who have attended all classes of the module, but did not score the minimum number of points for the current educational activities and are not admitted to the final module control. This category of students has the right to re-study the module.

With the permission of the rector, the student can increase the grade in the discipline by rearranging the final module control (not more than three times during the entire period of study).

The ECTS score is NOT converted to the traditional four-point scale, as the ECTS scale and the four-point scale are independent.

19. RECOMMENDED LITERATURE

19.1 Basic

1. Внутрішня медицина=Internal Medicine: Part 1: textbook for English-speaking students of higher medical schools / edited by Professor M.A. Stanislavchuk and Professor V.K. Sierkova-Vinnytsa: Nova Khyha ; 2019 : 409p.
2. Внутрішня медицина= Internal Medicine: Part 2: textbook for English-speaking students of higher medical schools / edited by Professor M.A. Stanislavchuk and Professor V.K. Sierkova-Vinnytsa: Nova Khyha ; 2019 : 360p.
3. Davidson's Principles and Practice of Medicine 23rd Edition. Editors: Stuart Ralston, Ian Penman, Mark Strachan Richard Hobson. Elsevier ; 2018 : 1440 p.
4. USMLE Step 2 CK Lecture Notes 2021 - Internal Medicine // Kaplan Medical Test Prep ; 2020 : 1616p.
5. Harrison's Principles of Internal Medicine, McGraw-Hill Professional 20th edition, 2018:3000 p.

2. Additional

1. A Textbook of Clinical Pharmacology and Therapeutics, 5Ed (A Hodder Arnold Publication) 5th Edition, by James Ritter, Lionel Lewis, Timothy Mant, Albert Ferro; 2018:567 p.
2. Standards of Medical Care in Diabetes-2019. Diabetes Care 2019. Jan; 42 (Supplement 1): S1-S193
3. Pashkovska N.V., Olenovych O.A., Urbanovych A.M./ Endocrine emergencies: diagnosis and management: Educational manual / Chernivtsi: Meduniversity, 2019. – 100 p.

4. N.V. Pashkovska, O.A. Olenovych, L.B. Pavlovych et al./ edited by Pasjkovska N.V. / Practical Endocrinology: educational manual to practical classes: Educational manual/– Chernivtsi: Meduniversity, 2019. – 118 p.
5. Turnpenny, Peter D; Ellard, Sian; Cleaver, Ruth Emery's elements of medical genetics and genomics. Edition 16. – 2022. – p.1637

19.3 Information resources

<https://moz.gov.ua/>

<http://moodle.bsmu.edu.ua>

<http://medlib.bsmu.edu.ua>

[http://irbis.bsmu.edu.ua/cgi-](http://irbis.bsmu.edu.ua/cgi-bin/irbis64r_12/cgiirbis_64.exe?C21COM=F&I21DBN=MEDLIB&P21DBN=MEDLIB&LNG=uk)

[bin/irbis64r_12/cgiirbis_64.exe?C21COM=F&I21DBN=MEDLIB&P21DBN=MEDLIB&LNG=uk](http://irbis.bsmu.edu.ua/cgi-bin/irbis64r_12/cgiirbis_64.exe?C21COM=F&I21DBN=MEDLIB&P21DBN=MEDLIB&LNG=uk)

<https://studrada.bsmu.edu.ua/>

<http://123.bsmu.edu.ua/login/index.php>

20. COMPILERS OF THE STUDENT HANDBOOK (SYLLABUS)

MD, PhD, Professor O.I.Fediv – Head of the Department of Internal Medicine;

MD, PhD, Professor N.V.Pashkovska - Head of the Department of Clinical Immunology, Allergology and Endocrinology

MD, PhD, Professor S.V.Sokolnyk – Head of Department of Pediatrics and Medical Genetics;

PhD, MD L.M. Honcharuk – Associate Professor of the Department of Internal Medicine;

PhD, MD I.V. Prysiashniuk - Associate Professor of the Department of Internal Medicine;

PhD, MD D.R.Andriychuk – Associate Professor of the Department of Pediatrics and Medical Genetics;