

DANYLO HALYTSKY LVIV NATIONAL MEDICAL UNIVERSITY

Department Of Endocrinology

**"APPROVED"**  
First Vice-Rector on  
Scientific and Pedagogical Work  
Associate Professor Iryna SOLONYNKO  
  
"08" "05" \_\_\_\_\_ 2023  


**DISCIPLINE PROGRAM**

**EC 3.2.2.2 Endocrinology**

**Individual course: Surgery**

**Second (master's) level of higher education**

**Field of Knowledge 22 "Healthcare"**

**specialty 222 "Medicine"**

**Faculty, year: Medical faculty, 6<sup>th</sup> year**

**Discussed and approved  
at the educational-methodical meeting  
of the Department of Endocrinology  
Minutes No 13 dated "27" April 2023**

**Head of the Department**

  
**Prof. Alina URBANOVYCH**

**Approved**

**by the Profile Methodical Board on  
General Medicine Disciplines**

**Minutes No 2 dated "04" May 2023**

**Head of the Board**

  
**Prof. Olena RADCHENKO**

**The discipline program "Endocrinology" was developed and imported at the Department of Endocrinology of Danylo Halytsky Lviv National Medical University for the 6<sup>st</sup> year students of Medical Faculty by the Specialty 222 "Medicine".**

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**Changes and additions to the study program of the discipline during 2023-2024 academic year**

No	Content of changes (additions)	Minutes of the meeting of the Department, date	Notes
1.	No changed from OC 29 to EC 3.2.2.2	No 13, 27 april 2023	

Chair of the Department of Orthodontics  
DMSc, prof. Urbanovych A.M.



Signature

## INTRODUCTION

The program of study of the discipline "Endocrinology" individual elective course: Surgery is made according to: the educational-professional program (EPP) of preparation of experts of the second (master's) level of higher education field of knowledge 22 "Health"

specialty 222 "Medicine"

Description of the discipline (abstract)

The structure of the discipline	Credits, hours			Year of study, semester	type of control	
	Total	Classroom				Self-studying
		Lectures	WS			
<b>Subject:</b> <b>Endocrinology (Surgery)</b>	<b>30</b>	<b>0</b>	<b>15</b>	<b>15</b>	<b>6 year</b> <b>(11,12 semesters)</b>	<b>Credit</b>

Teaching of the academic discipline "Endocrinology" in the 6th year is carried out as part of the individual profile elective course " Surgery ". Duration of practical classes - 6.0 hours. The main purpose of this course is to teach students the basics of internal medicine. Emphasis is placed on the skills of interviewing and clinical examination of the patient, diagnosis, differential diagnosis, treatment and prevention of diseases of the internal organs, diagnosis and provision of emergency medical care in emergencies, as well as medical manipulations. Students participate in the diagnostic and treatment process of patients under the guidance of teachers of the department. It is also provided to master / get acquainted with the procedures most often used in the practice of endocrinology. Practical classes, clinical tours with assistants, associate professors and professors of the department are the main part of this course. Each student records and reports clinical data on the examined patients to the assistant on a daily basis and writes a medical history.

Types of classes in the 6th year according to the curriculum are: a) practical classes, b) independent work of students.

Thematic plans of practical classes and independent work reveal the problematic issues of the relevant sections of endocrinology.

Practical classes are held on the clinical bases of the department. Methods of organizing practical classes in internal medicine requires:

- to make the student a participant in the process of providing medical care to patients from the moment of their hospitalization, examination, diagnosis, treatment to discharge from the hospital;
- to master professional practical skills; skills of teamwork of students, doctors, other participants in the process of providing medical care;
- to form in the student, as in the future specialist, an understanding of responsibility for the level of their training, its improvement during training and professional activities.

To implement the relevant module specified in the first lesson, it is necessary to provide the student with a detailed plan of work in the clinic and provide conditions for its implementation. This plan should include:

- research that the student must master (or get acquainted with);
- algorithms (protocols) of examinations, diagnosis, treatment, prevention in accordance with the standards of evidence-based medicine;
- supervision of patients to be carried out by the student during the study of the discipline;
- reports of the patient's medical history in the study group, at clinical rounds, practical conferences.

Patient supervision involves:

- 1) clarification of the patient's complaints, medical history and life, conducting a survey of organs and systems;
- 2) conducting a physical examination of the patient and determining the main symptoms / syndromes of the disease;
- 3) analysis of the results of laboratory and instrumental research;
- 4) diagnosis;
- 5) appointment of treatment;
- 6) determination of primary and secondary prevention measures;
- 7) report of the results of examination of the patient by a team of students in the study group, analysis under the guidance of the teacher of the correctness of diagnosis, differential diagnosis, scheduled examination, treatment tactics, assessment of prognosis and performance, prevention.

It is recommended to conduct practical classes with the inclusion of:

- 1) control of the initial level of knowledge with the help of test questions, compiled in the format of a question with 5 answer options, of which 1 - correct and checking workbooks;
- 2) management of 1-2 patients with diseases and conditions corresponding to the subject of the lesson, followed by discussion of the correctness of diagnosis, differential diagnosis and treatment with the use of evidence-based medicine and in accordance with National and European guidelines and protocols;
- 3) consideration of the results of additional research methods (laboratory and instrumental), which are used in the diagnosis

and differential diagnosis, consideration of which is provided by the topic of practical training;

4) control of the final level of knowledge on the test tasks made in the A format.

In practical classes, students are encouraged to keep protocols in which it is necessary to enter brief information about the patients examined during the practical lesson, diagnosis, examination plan and prescribed treatment.

Independent and individual work of 6th year students is 40% in the curriculum, is an integral part of educational activities and is included in the ECTS credits of each module and discipline as a whole. It includes:

- preparation for practical classes;
- implementation and protection of ISRS;
- preparation and writing of medical history;
- mastering practical skills;
- writing a workbook on the topic of the lesson.

Teachers of the department provide an opportunity to carry out independent work. During practical classes and final control, control and evaluation of its implementation are carried out.

Assimilation of the topic (current control) is controlled in a practical lesson. It is recommended to use the following tools to assess the level of preparation of students: test tasks, solving situational problems, conducting laboratory tests and evaluating their results, analysis and evaluation of instrumental research and parameters that characterize the functions of the human body, control of practical skills and medical manipulations. The type of control of the is a credit, which is credited under the condition of performing all tasks in practical classes and performing VTS.

Assessment of student performance in the discipline is a rating and is set on a multi-point scale, taking into account the assessment of the mastery of individual topics.

For those students who want to improve their grades in the discipline, upon completion of the study of the discipline, the curriculum provides a deadline for reshaping.

The subject of study of the discipline is prevention, diagnosis, differential diagnosis and treatment of endocrine diseases.

Interdisciplinary links: based on students' study of human anatomy, medical biology, histology, cytology and embryology, pathomorphology, physiology, pathophysiology, medical and biological physics, bioorganic and biological chemistry, microbiology, virology and immunology, pharmacology, clinical pharmacology, radiology and radiation medicine, propaedeutics of internal medicine, surgery, therapy, obstetrics and gynecology.

#### 1. The purpose and objectives of the discipline

1.1. The purpose of teaching the discipline "Endocrinology" is the formation of the ability to apply the acquired knowledge, skills, abilities and understanding to solve typical problems of the doctor in health care, the scope of which is provided by certain lists of syndromes and symptoms of diseases, emergencies and diseases special tactics of patient management; laboratory and instrumental research, medical manipulations.

#### 1.2. The main tasks of studying the discipline "Endocrinology" are:

- conduct surveys and clinical examinations of patients with major diseases of the endocrine system and analyze their results;
- determine the etiological and pathogenetic factors of the most common diseases of the endocrine system;
- analyze the typical clinical picture, identify clinical variants and complications of the most common diseases of the endocrine system;
- establish a preliminary diagnosis of the most common endocrine system;
- prescribe laboratory and instrumental examination of patients with the most common diseases of the endocrine system and their complications;
- on the basis of evaluation of the results of laboratory and instrumental examination, to make a differential diagnosis, substantiate and establish a clinical diagnosis of the most common diseases of the endocrine system;
- determine the necessary mode of work and rest in the treatment of the most common diseases of the endocrine system;
- determine the necessary medical nutrition in the treatment of the most common diseases of the endocrine system;
- determine the principles and nature of treatment in the treatment of the most common diseases of the endocrine system;
- prescribe treatment, including prognostic-modifying, of the most common diseases of the endocrine system and their complications;
- determine the tactics of emergency medical care on the basis of a diagnosis of emergency;
- provide emergency medical care on the basis of an emergency diagnosis;
- carry out primary and secondary prevention of the most common diseases of the endocrine system;
- assess the prognosis and efficiency of patients with the most common diseases of the endocrine system;
- perform medical manipulations;
- keep medical records;
- adhere to the requirements of ethics, bioethics and deontology in their professional activities.

**1.3. Competences and learning outcomes**, the formation of which is facilitated by the discipline (relationship with the normative content of training of higher education, formulated in terms of learning outcomes in the EPP).

In accordance with the requirements of the EPP, the discipline provides acquisition by students competencies:

*integral:*

ability to solve typical and complex specialized tasks and practical problems in professional activities in the field of health care, or in the learning process, which involves research and/or innovation and is characterized by complexity and uncertainty of conditions and requirements.

*general:*

- GC1. Ability to abstract thinking, analysis, and synthesis.
- GC2. Ability to learn and master modern knowledge.
- GC3. Ability to apply knowledge in practical situations.
- GC4. Knowledge and understanding of the subject area and understanding of the professional activity.
- GC5. Ability to adapt and act in a new situation.
- GC6. Ability to make informed decisions.
- GC7. Ability to work in a team.
- GC8. Ability to interpersonal interaction.
- GC10. Ability to use information and communication technologies.
- GC11. Ability to search, process, and analyze information from various sources.
- GC12. Definiteness and perseverance in terms of tasks and responsibilities.
- GC13. Awareness of equal opportunities and gender issues.
- GC14. The ability to exercise their rights and responsibilities as a member of society, to realize the values of civil (free democratic) society and the need for its sustainable development, the rule of law, human rights, and freedoms in Ukraine.
- GC15. Ability to preserve and multiply moral, cultural, and scientific values and achievements of society based on understanding the history and patterns of development of the subject area, its place in the general system of knowledge about nature and society and in the development of society, techniques, and technologies. active recreation and a healthy lifestyle.

*special (professional, subject):*

1. Ability to collect medical information about the patient and analyze clinical data.
2. Ability to determine the required list of laboratory and instrumental studies and evaluate their results.
3. Ability to establish a preliminary and clinical diagnosis of the disease.
4. Ability to determine the required mode of work and rest in the treatment and prevention of diseases.
5. Ability to determine the nature of nutrition in the treatment and prevention of diseases.
6. Ability to determine the principles and nature of treatment and prevention of diseases.
7. Ability to diagnose emergencies.
8. Ability to determine tactics and provide emergency medical care.
9. Ability to carry out medical and evacuation measures.
10. Ability to perform medical manipulations.
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.
16. Ability to keep medical records, including electronic forms.
20. It is clear and ambiguous to communicate one's knowledge, conclusions, and arguments on health issues and related issues to specialists and non-specialists, in particular to students
24. Adherence to ethical principles when working with patients, and laboratory animals.
25. Observance of professional and academic integrity, to be responsible for the reliability of the received scientific results.

Detailing of competencies according to NQF descriptors in the form of "Competence Matrix"

<b>№</b>	<b>Competence s</b>	<b>Knowledge</b>	<b>Skill</b>	<b>Communication</b>	<b>Autonomy and Responsibility</b>
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>
<b>Integral competence</b>					
Ability to solve typical and complex specialized problems and practical problems in a professional health care activity, or in a learning process that involves research and / or innovation and is characterized by the complexity and uncertainty of conditions and requirements.					
<b>General competencies</b>					
1.	Ability to abstract thinking, analysis and synthesis.	Know the methods of analysis, synthesis and further modern learning.	Be able to analyze information, make informed decisions, be able to acquire modern knowledge.	Establish appropriate links to achieve goals.	Be responsible for the timely acquisition of modern knowledge.
2.	Ability to learn and master modern knowledge.	Know the current trends in the industry and analyze them.	Be able to analyze professional information, make informed decisions, acquire modern knowledge.	Establish appropriate connections to achieve goals.	Be responsible for the timely acquisition of modern knowledge.
3.	Ability to apply	Have specialized	Be able to solve	Clear and	Responsible for

	knowledge in practical situations.	conceptual knowledge acquired in the learning process.	complex problems and problems that arise in professional activities.	unambiguous communication of own conclusions, knowledge and explanations that substantiate them to specialists and non-specialists.	making decisions in difficult conditions.
4.	Knowledge and understanding of the subject area and understanding of professional activity.	Have deep knowledge of the structure of professional activity.	Be able to carry out professional activities that require updating and integration of knowledge.	Ability to effectively form a communication strategy in professional activities.	To be responsible for professional development, ability to further professional training with a high level of autonomy.
5.	Ability to adapt and act in a new situation.	Know the types and methods of adaptation, principles of action in a new situation.	To be able to apply means of self-regulation, to be able to adapt to new situations (circumstances) of life and activity.	Establish appropriate connections to achieve results.	Be responsible for the timely use of self-regulatory methods.
6.	Ability to make an informed decision.	Know the tactics and strategies of communication, laws and ways of communicative behavior.	Be able to make informed decisions, choose ways and strategies to communicate to ensure effective teamwork.	Use communication strategies and interpersonal skills.	Be responsible for the choice and tactics of communication
7.	Ability to work in a team.	Know the tactics and strategies of communication, laws and ways of communicative behavior.	Be able to choose ways and strategies of communication to ensure effective teamwork.	Use communication strategies	Be responsible for the choice and tactics of communication
8.	Ability to interpersonal interaction.	Know the laws and methods of interpersonal interaction.	Be able to choose ways and strategies of communication for interpersonal interaction.	Use interpersonal skills.	Be responsible for the choice and tactics of communication.
10.	Ability to use information and communication technologies.	Have in-depth knowledge in the field of information and communication technologies used in professional activities.	Be able to use information and communication technologies in the professional field, which requires updating and integration of knowledge.	Use information and communication technologies in professional activities.	Be responsible for the development of professional knowledge and skills.
11.	Ability to search, process, and analyze information from various sources.	Know how to search, process and analyze information from various sources.	Be able to find, process and analyze information from various sources.	To be able to exchange the information found.	To be responsible for the high-quality performance of assigned tasks.
12.	Definiteness and perseverance in terms of tasks and responsibilities	Know how to perform assigned tasks and duties.	To be able to perform assigned tasks and duties.	The ability to collectively perform assigned tasks and responsibilities.	To be responsible for the fulfillment of assigned tasks and responsibilities.

13.	Awareness of equal opportunities and gender issues.	Know gender issues.	Be able to solve gender problems.	Make proposals to relevant bodies and institutions regarding equal opportunities and gender issues.	To be responsible for the implementation of measures to solve gender problems.
14.	The ability to exercise their rights and responsibilities as a member of society, to realize the values of civil (free democratic) society and the need for its sustainable development, the rule of law, human rights, and freedoms in Ukraine.	To know one's rights and responsibilities as a member of society, to be aware of the values of a civil (free democratic) society and the need for its sustainable development, the rule of law, the rights and freedoms of a person and a citizen in Ukraine.	To be able to realize one's rights and responsibilities as a member of society, to be aware of the values of a civil (free democratic) society and the need for its sustainable development, the rule of law, the rights and freedoms of a person and a citizen in Ukraine.	To be able to communicate with other members of society without violating their rights and obligations.	Exercise your rights and duties responsibly as a member of society, to be aware of the values of civil (free democratic) society and the need for its sustainable development, the rule of law, the rights and freedoms of a person and a citizen in Ukraine.
15.	Ability to preserve and multiply moral, cultural, and scientific values and achievements of society based on understanding the history and patterns of development of the subject area, its place in the general system of knowledge about nature and society and in the development of society, techniques, and technologies. active recreation and a healthy lifestyle.	Know how to preserve and increase the moral, cultural, scientific values and achievements of society based on an understanding of the history and patterns of development of the subject area, its place in the general system of knowledge about nature and society and in the development of society, technology and technology, use different types and forms of motor activity for active recreation and leading a healthy lifestyle.	To be able to preserve and multiply the moral, cultural, scientific values and achievements of society based on an understanding of the history and patterns of development of the subject area, its place in the general system of knowledge about nature and society and in the development of society, technology and technologies, to use various types and forms of motor activity for active recreation and leading a healthy lifestyle.	To exchange moral, cultural, scientific values and achievements of society on the basis of understanding the history and patterns of development of the subject area, its place in the general system of knowledge about nature and society and in the development of society, equipment and technologies, to use various types and forms of motor activity for active recreation and leading a healthy lifestyle.	Be responsible for the preservation and multiplication of moral, cultural, scientific values and achievements of society based on an understanding of the history and patterns of development of the subject area, its place in the general system of knowledge about nature and society and in the development of society, equipment and technologies, use different types and forms of motor activities for active recreation and leading a healthy lifestyle.
<b>Special (professional, subject) competencies</b>					
	Skills of interviewing and clinical examination of the patient.	Have specialized knowledge about the person, his organs and systems, know the methods and standard schemes of	Be able to conduct a conversation with the patient on the basis of algorithms and standards, using standard techniques to	Effectively form a communication strategy when communicating with the patient. Enter information	Be responsible for the quality collection of information obtained through interviews, surveys, examinations, palpation, percussion

		questioning and physical examination of the patient.	conduct a physical examination of the patient. Be able to assess the state of human health.	about the state of human health in the relevant medical records.	of organs and systems and for the timely assessment of the state: human health and for taking appropriate measures.
	Ability to determine the required list of laboratory and instrumental studies and evaluate their results.	Have specialized knowledge about the person, his organs and systems, standard methods of laboratory and instrumental research (according to list 4).	Be able to analyze the results of laboratory and instrumental studies and on their basis to assess information about the patient's diagnosis (according to list 4).	Form and communicate to the patient and specialists the necessary list of laboratory and instrumental research (according to list 4).	Be responsible for deciding on the evaluation of laboratory and instrumental research results
	Ability to establish a preliminary and clinical diagnosis of the disease.	Have specialized knowledge about man, his organs and systems; standard examination methods; disease diagnosis algorithms; algorithms for isolating leading symptoms or syndromes (according to list 1); previous and clinical diagnoses (according to list 2); methods of laboratory and instrumental examination (according to list 3); knowledge of human condition assessment.	Be able to conduct a physical examination of the patient; be able to make an informed decision about the selection of the leading clinical symptom or syndrome; be able to make a preliminary and clinical diagnosis of the disease (according to list 2); to appoint laboratory and instrumental examination of the patient (according to list 3) by applying standard methods.	On the basis of normative documents to keep medical documentation of the patient (card of the outpatient / inpatient, etc.).	Adhering to ethical and legal norms, be responsible for making informed decisions and actions regarding the correctness of the established preliminary and clinical diagnosis of the disease.
	Ability to determine the required mode of work and rest in the treatment of diseases.	Have specialized knowledge about man, his organs and systems; ethical and legal norms; algorithms and standard schemes for determining the mode of work and rest during treatment, based on the preliminary and clinical diagnosis of the disease (according to list 2).	Be able to determine, on the basis of preliminary and clinical diagnosis, by making an informed decision the necessary mode of work and rest in the treatment of the disease (according to list 2).	To form and inform the patient and specialists about the necessary mode of work and rest in the treatment of the disease (according to list 2).	To be responsible for the validity of the appointment of work and rest in the treatment of the disease (according to list 2).
	Ability to determine the nature of nutrition in the treatment of diseases.	Have specialized knowledge about man, his organs and systems; algorithms and standard schemes of nutrition in the treatment of diseases (according to list 2).	Be able to determine, on the basis of preliminary and clinical diagnosis, the nature of nutrition in the treatment of diseases (according to list 2).	To form and convey to the patient, specialists conclusions about nutrition in the treatment of the disease (according to list 2).	Be responsible for the validity of the definition of nutrition in the treatment of the disease (according to list 2).
	Ability to determine the principles and	Have specialized knowledge of algorithms and	Be able to determine the principles and nature of treatment of	Form and communicate to the patient and specialists	Be responsible for deciding on the principles and nature



	nature of disease treatment..	standard schemes for the treatment of diseases (list 2)	the disease (according to list 2).	their own conclusions about the principles and nature of treatment (according to list 2).	of treatment of the disease (according to list 2).
	Ability to diagnose emergencies..	Have specialized knowledge about the person, his organs and systems, standard methods of examination of the person (at home, on the street, in a health care facility) in the absence of information	Be able, in the absence of information, using standard techniques, by making an informed decision to assess the human condition and make a diagnosis (according to list 3).	Under any circumstances, adhering to the relevant ethical and legal norms to make an informed decision to assess the human condition, diagnosis and organization of the necessary medical measures depending on the human condition; fill in the relevant medical documents.	Be responsible for the timeliness and effectiveness of medical measures to diagnose emergencies.
	Ability to determine the tactics of emergency medical care.	Know the legal framework for the provision of emergency medical care, in particular the law of Ukraine "On emergency medical care". Have specialized knowledge about urgent human conditions; principles of emergency medical care.	Be able to identify emergencies (according to list 3); principles and tactics of emergency medical care; to carry out organizational and diagnostic measures aimed at saving and saving human life.	It is reasonable to formulate and convey to the patient or his / her legal representative the need for emergency care and obtain consent for medical intervention.	Be responsible for the correct determination of the emergency condition, its severity and tactics of emergency medical care.
	Emergency care skills.	Have specialized knowledge about the structure of the human body, its organs and systems; algorithms for providing emergency medical care in emergencies (according to list 3).	Explain the need and procedure for emergency medical care.	Be able to provide emergency medical care in an emergency (according to list 3).	Be responsible for the timeliness and quality of emergency medical care.
	Skills to perform medical manipulations.	Be able to perform medical manipulations (according to list 5).	Have specialized knowledge about man, his organs and systems; knowledge of algorithms for performing medical manipulations (according to list 5).	It is reasonable to form and bring to the patient, specialists conclusions about the need for medical manipulations (according to list 5)	To be responsible for the quality of medical manipulations (according to list 5).
	Ability to take preventive measures. Have the skills to develop medical and preventive measures.	To know the principles of the organization of a rational food, a mode of activity and rest, primary prevention of diseases; principles and methods of promoting a healthy lifestyle	Be able to organize the promotion of a healthy lifestyle, primary prevention of diseases.	Use the local press to publish health promotion activities, use radio, television, lectures and interviews.	To be responsible for timely and high-quality measures to promote a healthy lifestyle, primary disease prevention.

	Ability to determine the tactics of management of persons subject to dispensary supervision.	Have specialized knowledge about the person, his organs and systems, the state of health of the patient and the fixed population on the basis of standard schemes; know the relevant ethical and legal norms for medical examination of the population; examination tactics and principles of secondary prevention of patients subject to dispensary supervision; to know the principles of organization of primary prevention of healthy persons subject to dispensary supervision.	Be able to assess the health of patients and the affected population; to organize medical examination of persons subject to dispensary supervision.	Organize dispensary supervision of patients (secondary disease prevention), healthy people who are subject to dispensary supervision (primary disease prevention).	To be responsible for the quality of the organization of dispensary supervision of certain contingents of persons
	Ability to keep medical records.	Know the system of official document management in the professional work of a doctor, including modern computer information technology.	Be able to determine the source and location of the required information depending on its type. Be able to process information and analyze the information obtained	Obtain the necessary information from a specific source and on the basis of its analysis to form appropriate conclusions.	Be responsible for the completeness and quality of the analysis of information and conclusions based on its analysis.

Learning outcomes:

- Integrative final program learning outcomes, the formation of which is facilitated by the discipline:
- conduct professional activities in social interaction based on humanistic and ethical principles; identify future professional activities as socially significant for human health;
- apply knowledge of general and professional disciplines in professional activities;
- comply with the norms of the sanitary and hygienic regime and safety requirements in carrying out professional activities;
- use the results of independent search, analysis, and synthesis of information from various sources to solve typical problems of professional activity;
- argue information for decision-making, be responsible for them in standard and non-standard professional situations; adhere to the principles of deontology and ethics in professional activities;
- to carry out professional communication in modern Ukrainian, to use skills of oral communication in a foreign language, analyzing texts of professional orientation and translating foreign language information sources;
- adhere to the norms of communication in professional interaction with colleagues and management, and work effectively in a team;
- analyze the information obtained from scientific research, summarize, systematize and use it in professional activities.

Program learning outcomes for the discipline:

PLO 1. Collect data on patient complaints, medical history, and life history according to the standard scheme of the patient's survey, according to the established algorithms to conduct and evaluate the results of physical examination.

PLO 2. Evaluate information on the diagnosis, using a standard procedure, based on the results of laboratory and instrumental studies.

PLO 3. Highlight the leading clinical symptom or syndrome. Establish the most probable or syndromic diagnosis of the disease. Assign laboratory and instrumental examination of the patient. Carry out differential diagnoses of diseases. Establish a preliminary and clinical diagnosis.

PLO 4. To determine the necessary mode of work and rest in the treatment of the disease.

PLO 5. To determine the necessary medical nutrition in the treatment of the disease.

PLO 6. To determine the principles and nature of treatment (conservative, operative) of the disease.

PLO 7. To determine the tactics of providing emergency medical care on the basis of a diagnosis of emergency.

PLO 8. Provide emergency medical care on the basis of a diagnosis of emergency.

PLO 11. Perform medical manipulations.

PLO 12. To form among the fixed contingent of the population dispensary groups of patients. Implement a system of primary prevention measures within primary health care. Organize secondary and tertiary prevention measures among the assigned contingent of the population.

PLO 14. To determine the tactics of examination and secondary prevention of patients subject to dispensary supervision; tactics of examination and primary prevention of healthy persons subject to dispensary supervision.

PLO 15. To determine the presence and degree of restriction of vital activity, type, degree, and duration of incapacity for work with the execution of relevant documents.

PLO 16. Maintain medical records of the patient and the population.

PLO 17. Conduct screening for major non-communicable diseases; evaluate morbidity indicators and integrated health indicators; identify risk factors for the occurrence and course of diseases; to form risk groups of the population.

PLO 19. Carry out the selection and use of unified clinical protocols for the provision of medical care, developed on the basis of evidence-based medicine; develop and use local health care protocols.

PLO 20. Organize the work of medical staff; form rational medical routes for patients; organize the interaction with colleagues, organizations, and institutions; apply tools to promote medical services.

PLO 21. Form goals and determine the structure of personal activities.

PLO 22. Adhere to a healthy lifestyle, and use the techniques of self-regulation and self-control.

PLO 23. To be aware of and guided in its activities by civil rights, freedoms, and responsibilities, to raise the general educational and cultural level.

PLO 24. Adhere to the requirements of ethics, bioethics, and deontology in their professional activities.

PLO 25. To organize the necessary level of individual safety (own and persons cared for) in case of typical dangerous situations in the individual field of activity.

The organization of the educational process should ensure the participation of students in the management of at least 2/3 of inpatients. If it is not possible to provide supervision of patients with diseases on the topic of the lesson, students fill in the educational history of the disease with diseases of the relevant topic. The need to write such a history is determined by the assistant / associate professor (responsible for teaching and methodological work) on the basis of a weekly review of data on the availability of relevant patients in the departments.

Daily patient examination reports are provided to the associate professor / assistant for supervision. Associate professors / assistants ensure that each student receives the necessary competence in the following areas: questioning the patient, clinical examination, oral report, making diagnostic decisions and determining treatment tactics (critical thinking), filling out

documentation.

**2. Information volume of the academic discipline "Endocrinology"  
individual elective course: Surgery  
1credit/ 30hours(practical classes-15hours, SIW -15hours)**

**Students must:**

- Demonstrate the ability to diagnose and present a treatment plan for the most common conditions found in endocrine hospitals.
  - Demonstrate the ability to apply diagnostic methods that help in making a decision (treatment plan) for the management of various diseases that occur in endocrine inpatient departments.
  - Apply the principles of evidence-based medicine in making diagnostic and therapeutic decisions in internal diseases that occur in endocrine inpatient departments.
  - Know the main classes of drugs used in the endocrinologist's clinic, show the ability to apply appropriate clinical and pharmacological principles for the management of patients with the most common conditions of internal medicine that occur in hospitals.
  - Demonstrate ease of application of medical information technologies and critical expert assessments of medical literature in the diagnosis and treatment in the clinic of endocrine pathology.
  - Demonstrate the ability to conduct a focused medical examination and targeted physical examination in accordance with the patient's leading complaints and medical history.
  - Demonstrate the ability to compile medical histories and conduct physical examinations in a hospital setting.
  - Demonstrate the ability to diagnose and plan treatment for the most common diseases in the hospital.
  - Demonstrate the ability to receive and effectively transport patients to and from the intensive care unit. Demonstrate the ability to initiate the transition from hospital to outpatient.
  - Demonstrate the ability to perform routine technical procedures, including: venipuncture, nasogastric tube insertion, Foley catheter insertion, support of vital functions, support of cardiac function, show ease of interpretation of ECG, FCG, echocardiography, ultrasound and chest X-rays
  - Demonstrate the ability to justify and apply clinical methods to understand the manifestations of the disease in the hospital.
  - Demonstrate a basic understanding of ethical principles and their application in the treatment of inpatients.
  - Demonstrate an effective ability to interact with different patient environments, doctors and other healthcare professionals.
  - Demonstrate a basic understanding of how age, gender, culture, social and economic status affect the management of patients in the endocrine clinic.
  - Demonstrate the ability to clearly and concisely communicate the patient orally and in writing to other members of the treatment team, paying particular attention to the inclusion of meaningful and synthesized clinical information.
  - Determine the level of examination and treatment of patients with emergencies in the hospital
  - Apply in practice algorithms for examination and management of patients with emergencies in the hospital
  - Carry out in practice the differential diagnosis of the main syndromes that occur in the clinic of emergencies
  - Master the methods of treatment of emergencies, the effectiveness of which is proven by evidence-based medicine
  - Apply in practice the standards of diagnosis and treatment of patients in the clinic of emergency conditions
- Students must supervise patients (new or already treated) with the following diseases:
- Diabetes mellitus with complications - 4
  - Goiter syndrome - 2
  - Thyrotoxic crisis - 1
  - Hypoglycemic coma - 1
  - Hyperglycemic (ketoacidonemic) coma - 1
  - Acute adrenal insufficiency - 1

The organization of the educational process should ensure the participation of students in the management of at least 2/3 of hospitalized patients. If it is not possible to access patients of any category, students fill in the study history with diagnoses / problems of the appropriate category. The need to write such a history is determined by the assistant / associate professor (head of the department) on the basis of weekly review of data on the availability of relevant patients in the departments.

The course is held in hospitals that operate ambulances. Each student must hire 3 new / undifferentiated patients every week in the hospital. Throughout the course, students weekly examine 6-10 patients under dynamic observation or regular patients. If, for any reason, a student examines less than 2 patients per day (dynamically observed), the treatment of previously admitted patients is raised and studied. The number of patients responsible for the student is determined by the complexity of the cases and the willingness of the student to participate in the treatment of additional patients. Students are expected to be fully involved in the management of at least 2/3 of hospitalized patients.

Didactic classes are held during morning tests, lectures and practical classes. Assessment of student completion of medical histories and statements is performed by the teacher in the process of working with the patient.

**Specific goals:**

**Students must:**

- Conduct surveys and physical examinations of patients with major endocrinological syndromes
- Justify the use of basic invasive and non-invasive diagnostic methods used in endocrinology, determine the indications and contraindications for their implementation, possible complications
- Make a plan for examination of patients with major endocrine syndromes
- Make a differential diagnosis, justify and formulate a diagnosis of major endocrine syndromes
- Prescribe treatment, determine the prognosis, conduct primary and secondary prevention of major endocrine diseases
- Diagnose and provide care in emergencies in endocrinology
- Demonstrate mastery of moral and deontological principles of a medical professional and the principles of professional subordination
- Apply in practice algorithms for examination and management of patients with urgent endocrinological conditions in the hospital
- Carry out in practice the differential diagnosis of the main syndromes that occur in the clinic of urgent endocrinological conditions
- Master the methods of treatment of urgent endocrinological conditions, the effectiveness of which is proven by evidence-based medicine
- Apply in practice the standards of diagnosis and treatment of patients in the clinic of endocrinological emergencies

**Topic 1. Managing a patient with chronic complications of diabetes mellitus.**

Definition of diabetic complications. Natural history and distribution of late diabetic complications, prognosis. Evaluation of metabolic control in diabetes. Cardiovascular diseases in diabetes and their classification. Management of diabetic ischemic heart disease (diet plan, exercise, drug therapy, surgical approaches such as balloon angioplasty and coronary artery bypass surgery). Diabetic neuropathy: classification, clinical picture, pathogenesis and therapeutic implications. Diabetic nephropathy: classification, clinical course, laboratory abnormalities and treatment. Diabetic retinopathy: classification and characteristics of each stage, management. Other eye disorders in diabetes (diabetic cataract, diabetic ophthalmoplegia, glaucoma) and their management. The diabetic foot: pathophysiology (neuropathy, ischemia, infection), management and threatening factors (foot ulcer, limb-threatening infections, osteomyelitis).

**Topic2. Management of a patient with goitre. Treatment of a patient with thyrotoxic crisis.**

Endemic and sporadic goiter (pathogenesis, clinical picture). Inborn iodine deficiency (clinical features, treatment, prognosis). Iodine deficiency and pregnancy. Incidence of iodine deficiency (causative factors, outcomes). Treatment and management goiter

**Topic3. Management of a patient with hyperglycemic (ketoacidotic), hypoglycemic comas, thyrotoxic crisis, acute adrenal insufficiency.**

Existing standards of diagnosis and management of patients with acute adrenal insufficiency, differential diagnosis, management tactics.

**3. The structure of the academic discipline "Endocrinology"**

**individual elective course: Surgery**

Topic	Lecturs	Workshops	Self-stu dying	Individual work
1	2	3	4	5
1. Management a patient with chronic complications of diabetes mellitus.	0	5	5	
2. Management of a patient with goiter syndrome.	0	5	5	
3. Management of a patient with hyperglycemic (ketoacidotic), hypoglycemic comas, thyrotoxic crisis, acute adrenal insufficiency.	0	5	5	
Totalwiththecredit	0	15	15	
Totalhours45/1,ECTScredits	0	15/0,5	15/0,5	
Exam				Credit

Note. Practical classes -50%, Self-studying - 50%.

#### 4. Thematic plan of lectures.

According to order No. 881-z (app. 1-4) dated March 15, 2022, the curriculum does not include lectures.

#### 5. Thematic plan of practical classes

№	Topic	Number of hours
1.	Management a patient with chronic complications of diabetes mellitus.	5
2.	Management of a patient with goiter syndrome.	5
3.	Management of a patient with hyperglycemic (ketoacidotic), hypoglycemic comas, thyrotoxic crisis, acute adrenal insufficiency.	5
<b>Totally</b>		15

#### 6. Thematic plan of independent work of students

№	Topic	Number of hours
I.	Preparation for practical classes - theoretical training and development of practical skills	12
I.	Curation of a patients	4
II.	Individual work: <ul style="list-style-type: none"> <li>• preparation of abstracts</li> <li>• preparation of reports</li> <li>• writing a medical history of the patient</li> </ul>	3
<b>Totally</b>		15

**7. Individual tasks** are not provided

#### 8. Teaching methods

Practical, visual, verbal, work with a book, video method, online resources

- Types of control (current and final)
- Form of final control - differentiated assessment
- Evaluation criteria

Types of educational activities of students according to the curriculum are:

- a) practical classes,
- b) independent work of students.

Educational classes according to the methodology of their organization are practical, because they involve such an organization structure:

1. The preparatory stage (organizational, setting educational goals and their motivation, control of the initial level knowledge).
2. The main stage (formation of professional skills and skills regarding the definition of general principles pharmacokinetics, pharmacodynamics, prescribing, solving typical pharmacotherapeutic problems and test tasks).
3. The final stage (control of the final level of knowledge and skills, solving non-typical problems, test problems). Summary of general results. Tasks for the next classes.

#### Lesson plan and organizational structure

№ 3/II	Stages of the lesson	Duration	Teaching aids	Equipment
1.	<b>Preparatory stage</b>	<b>45 min.</b>		

1.1.	Organizational issues	5 min.		
1.2.	Checking the tasks that were set for independent preparation for classes	20 min.	Textbook, manual	
1.3	Control and evaluation of the initial level training students in pharmacology	20 min.	Methodological developments of the department	
<b>2.</b>	<b>The main stage</b>	<b>135 min.</b>		
2.1.	Formation of professional skills and abilities Solving therapeutic tasks, curation specialized patients.	100 min.	Textbook, manual, tables, stands, work histories of illnesses, letters medical prescriptions	Projector multimedia, laptop, board
2.2.	Solving situational tasks and their assessment	35 min.	Textbook, manual, tables	
<b>3.</b>	<b>Заключный этап</b>	<b>45 min.</b>		
3.1.	Test control of the final level preparation	20 min.	Methodical developments of the department (tests in clinical pharmacology for final control)	
3.2.	General assessment of educational activity students	20 min.	Criteria for evaluating students' knowledge	
3.3.	Organizational issues. Tasks for independent preparation for the next lesson.	5 min.	Thematic plan, methodical development of practical classes and independent work of the student.	

### 9. Methods of control

At each practical lesson the current control of all types of works which are planned on each subject is carried out, provides the following types of control: oral, written, test, programmed, practical control, self-control. Final control: credit. Evaluation criteria: all types of work are evaluated on a traditional 4-point scale and the average grade for each practical lesson is displayed.

### 10. Current control

In order to intensify the learning process, systematic learning of the material, establish feedback with each student, timely control and adjustment of the educational process, increase motivation, reduce skipping classes, students' responsibility for learning outcomes, the success of each student is assessed by the rating system .

**Assessment** is one of the final stages of learning activities and determining learning success. The grade in the discipline is set as the average of the grades for the current educational activity, which is given in the assessment of theoretical knowledge and practical skills in accordance with the lists defined by the program of the discipline.

**The current educational activities** of students are controlled in practical classes in accordance with specific goals. The following diagnostic tools for students' level of preparation are recommended: test control (machine and non-machine), solving situational problems, control of practical skills, in particular - the ability to properly supervise the patient, prescribe and interpret the results of laboratory and instrumental examinations, justify the diagnosis based on analysis clinical and auxiliary examination methods.

When assessing the mastery of each topic of the student's, grades are set on a 4-point (traditional) scale using the evaluation criteria adopted by the university and approved by the cyclic medical commission. This takes into account all types of work provided by the methodological development for the study of the topic.

#### *Knowledge assessment criteria*

**Excellent ("5")** - The student correctly answered 90-100% of tests of format A. Correctly, clearly and logically and fully answers all standardized questions of the current topic and independent work. Closely connects theory with practice and correctly demonstrates the performance (knowledge) of practical skills, freely reads the results of analyzes, solves situational problems of increased complexity, knows how to summarize the material, knows the methods of examination of the patient in the amount necessary for the doctor's work.

**Good ("4")** - The student correctly answered 70-89% of tests of format A. Correctly, and essentially answers the standardized questions of the current topic and independent work. Demonstrates performance (knowledge) of practical skills. Correctly uses theoretical knowledge when solving practical tasks. Able to solve situational problems of easy and medium complexity. Possesses the necessary practical skills and methods of their implementation in an amount that exceeds the required minimum.

**Satisfactory ("C")** - The student correctly answered 50-69% of tests of format A. Incompletely, with the help of additional questions, answers standardized questions of the current topic and independent work. Cannot independently construct a clear, logical answer. During the answer and demonstration of practical skills, the student makes mistakes. The student solves only the easiest problems, possesses only the mandatory minimum of research methods.

**Unsatisfactory ("2")** - The student answered less than 50% of tests of format A. Does not know the material of the current topic, cannot construct a logical answer, does not answer additional questions, does not understand the content of the material. During the response and demonstration of practical skills, he makes significant, gross mistakes.

The student can work out the missed topics during the rehearsals no more than 3 times during the study of the subject, thus gaining a number of points not less than the minimum to get credit for the discipline. Assessment of current learning activities: is carried out in each practical lesson on the relevant topic and is defined by the ECTS system and the traditional scale adopted in Ukraine

When mastering each topic for the current educational activity of the student grades are set on a 4-point traditional scale, then for each student is calculated his average score for the discipline and according to Table 1 "Instructions for evaluating the educational activities of students..." is converted into appropriate scores.

#### 11. Form of final control of learning success.

Credit is a form of final control, which consists in assessing the student's mastery of the academic material of the discipline solely on the basis of the results of all types of educational work provided by the curriculum. The semester credit is set based on the results of the current control.

#### 12. Scheme of accrual and distribution of points received by students:

The calculation of the number of points for the current study is based on the grades obtained by the student on a 4-point (national) scale during the study of the discipline, by calculating the arithmetic mean (CA), rounded to 2 decimal places. The resulting value is converted into points on a multi-point scale as follows:

$$X=(CA \times 200):5$$

#### Recalculation of the average grade for the current activity into a multi-point scale for the discipline that ends with credit

4-point scale	200-point scale	4-point scale	200-point scale	4-point scale	200-point scale		
5	200	4.45	178	3.92	157	3.32	133
4.97	199	4.42	177	3.89	156	3.3	132
4.95	198	4.4	176	3.87	155	3.32	133
4.92	197	4.37	175	3.84	154	3.32	133
4.9	196	4.35	174	3.82	153	3.3	132
4.87	195	4.32	173	3.79	152	3.27	131
4.85	194	4.3	172	3.77	151	3.25	130
4.82	193	4.27	171	3.74	150	3.22	129
4.8	192	4.24	170	3.72	149	3.2	128
4.77	191	4.22	169	3.7	148	3.17	127
4.75	190	4.19	168	3.67	147	3.15	126
4.72	189	4.17	167	3.65	146	3.12	125
4.7	188	4.14	166	3.62	145	3.1	124
4.67	187	4.12	165	3.57	143	3.07	123
4.65	186	4.09	164	3.55	142	3.02	121
4.62	185	4.07	163	3.52	141	3	120
4.6	184	4.04	162	3.5	140	Less than 3	Not enough
4.57	183	4.02	161	3.47	139		
4.52	181	3.99	160	3.45	138		
4.5	180	3.97	159	3.42	137		
4.47	179	3.94	158	3.4	136		

Assessment of individual student tasks.

Independent work of students, which is provided in the topic along with classroom work, is assessed during the current control of the topic in the relevant lesson. Assimilation of topics that are submitted only for independent work is controlled in the test. In no case may the total amount of points for the current educational activity exceed 200 points.

The maximum number of points that a student can score for the current academic activity in the study of the discipline is



200 points.

The minimum number of points that a student must score for the current academic activity in the study of the discipline is 120 points.

Assessment of student achievement in the discipline is a rating and is set on a multi-point scale as the arithmetic mean of the mastery of the relevant topics and is determined by the ECTS system and the traditional scale adopted in Ukraine.

Assessment of the discipline on a 200-point scale is formed by adding the sum of points for the current educational activities of the student and the final control. The score on the 200-point scale is transformed into a score on the traditional (four-point) scale and after ranking - in the score on the ECTS scale.

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 control).

According to the decision of the Academic Council of the university to the number of points scored by the student in the discipline "Endocrinology", may be added incentive points (not more than 12 points) for winning prizes in international and national subject competitions, but in in no case may the total amount of points for the discipline exceed 200 points.

**Conversion of the number of points for the discipline into grades on the ECTS scale and on a four-point (traditional) scale.**

Scores are independently converted to both an ECTS scale and a four-point scale. ECTS scale scores are not converted to a four-point scale and vice versa.

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

ECTS	Statistically
«A»	The best 10 % students
«B»	Next 25 % students
«C»	Next30 % students
«D»	Next25 % students
«E»	The last 10 % students

Ranking with the assignment of grades "A", "B", "C", "D", "E" is carried out by the dean's office or other structural unit by the decision of the Academic Council educational department for students of this course who study in one specialty and successfully completed the discipline . According to the decision of the Academic Council, it is recommended to rank students - citizens of foreign countries in the same array with students - citizens of Ukraine who study in the same specialty.

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

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

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

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

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

Scores	4-factor scale
170-200 scores	«5»
140-169 scores	«4»
139-120 scores	«3»
Less than 120 scores	«2»

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

Multi-point and four-point scales characterize the actual success of each student in mastering the discipline. The ECTS scale is relative, comparative, rating, which establishes the student's belonging to the group of the best or worst among the reference group of classmates (faculty, specialty). Therefore, the grade "A" on the scale can not be equal to the grade "excellent", and the grade "B" - the grade "good" and so on. As a rule, when converting from a multi-point scale, the limits of grades "A", "B",

"C", "D", "E" on the ECTS scale do not coincide with the limits of grades "5", "4", "3" on the traditional scale.

### 13. Methodical support

- the program of the academic discipline.
- syllabus of the discipline.
- recording of lectures
- plans for practical classes, independent work
- methodical recommendations for the student
- workbooks
- a list of medicines for learning and writing prescriptions
- a list of practical skills
- questions, problems, assignments or cases for current and final control
- list of recommended literature.

### 14. Bibliography

#### Basic

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2. Ендокринологія: підручник (П.М. Боднар, Г.П. Михальчишин, Ю.І. Комісаренко та ін.) За ред. професора П.М. Боднара, - Вид. 4, перероб. та доп. – Вінниця. Нова Книга, 2017. – 449с.
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4. Endocrinology: textbook /Ed. by prof. Petro M. Bodnar.- 4th ed. updated – Vinnitsa: Nova Knyha, 2017. – 328 p.
5. USMLE Step 2 CK Lecture Notes 2017: Internal Medicine (Kaplan Test Prep). - 2017. - Published by Kaplan Medical. – 474 pages.

#### Additional

1. Стандарти надання медичної допомоги хворим з патологічними станами щитоподібної та прищитоподібних залоз в умовах дії негативних чинників довкілля (видання третє, розширене) / За ред. О.В. Камінського. – Харків: «Юрайт», 2017. – 312 с.

### 15. Informational resources

1. <https://www.diabetes.org>
2. <http://www.oxfordmedicaleducation.com/>
3. <https://www.thyroid.org>