

**National Pirogov Memorial Medical University, Vinnytsya**

"APPROVE"

Acting Rector of higher education institution

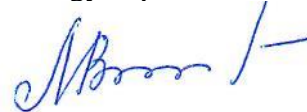


Victoria PETRUSHENKO

"\_31\_" August 2023

"AGREED"

Head of endocrinology department



Maryna VLASENKO.

"\_30\_" August 2023

**SYLLABUS  
of academic discipline  
ENDOCRINOLOGY**

(part of the discipline "Internal Medicine with Infectious Diseases and Epidemiology, Clinical Pharmacology, Endocrinology")

Specialty	221 Dentistry
Educational level	the second (master`s) level
Educational programme	EPP Dentistry, 2022
Academic year	2023-2024
Department	<i>Endocrinology</i>
Lecturer (if lectures are given)	Prof. of HEI Maryna VLASENKO
Contact information	<i>EndocrinologyDepartment,</i> <a href="mailto:endocrinology@vnmue.edu.ua/en">endocrinology@vnmue.edu.ua/en</a> , (Regional clinical highly specialized endocrinological center, Vinnytsya, Michurina st, 32, (0432)531735
Syllabus compiler	Ass-prof. of HEI Anatolii PALAMARCHUK

## 1. Status and structure of the discipline

Discipline status	Compulsory
Discipline code in EPP/discipline place in EPP	CC 27.3, Endocrinology (part of the discipline "Internal Medicine with Infectious Diseases and Epidemiology, Clinical Pharmacology, Endocrinology")
Course / semester	4th course (VII or VIII semester)
The amount of discipline (the total number of hours / number of credits ECTS)	30 hours / 1 credits ECTS
Number of content modules	1 module
The structure of the discipline	Practical classes 20 hours Independent work 10 hours
Language of study	English
Form of study	Full-time (in conditions of martial law, emergency situations or state of emergency (special period)) form of education is established in accordance with the decisions of the executive authorities, the Central Administrative Agency, the local education management body and National Pirogov Memorial Medical University, Vinnytsya to create a safe educational environment.

## 2. Description of the discipline

### Short annotation of the course, relevance.

The subject area of the discipline is the study of the fundamentals of internal medicine under the heading endocrinology, while the emphasis is on creating a holistic idea of the endocrine system among students. The emphasis is placed on the skills of interviewing and clinical examination of the patient, diagnosis, differential diagnosis, treatment and prevention of endocrinological diseases, diagnosis and provision of emergency medical care in emergency conditions, as well as medical manipulation.

**Prerequisites.** For successfully assimilate the discipline, the student needs knowledge gained in the process of studying the following disciplines of general training: 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 and clinical pharmacy, and clinical pharmacy, radiology and radiation medicine, propedeutics of internal medicine.

### The purpose of the course and its significance for professional activities.

The purpose of the discipline «Endocrinology» is formation of ability to apply the acquired knowledge, abilities, skills and understanding to the solution of standard problems of activity of the doctor in the field of health care which scope is provided by certain lists of syndromes and symptoms of the diseases, medical emergencies and diseases demanding special tactics of maintaining patients; laboratory and instrumental research, medical manipulation.

**Postrequisites.** In the course of the study of discipline, the knowledge necessary for the successful assimilation of vocational training disciplines is acquired, namely: internal medicine, infectious diseases, surgery, obstetrics, gynaecology, intensive care, ophthalmology, dermatology, neurosurgery, oncology and other clinical disciplines, which provides for the integration of teaching with these disciplines and the application of the acquired knowledge, skills and skills in the process of further training and professional activities.

**Learning outcomes. After successful study of the discipline the applicant will be able to:**

1. Collect complaints from a patient with endocrine pathology, history of the disease, history of life according to the standard scheme of interviewing the patient, according to established algorithms, conduct and evaluate the results of a physical examination;
2. Evaluate diagnosis information based on laboratory and instrumental research results;
3. Diagnose, treat, organize the introduction of measures for the prevention of diabetes mellitus, iodine deficiency diseases of the shield-like gland, thyrotoxicosis, hypothyroiditis, thyroiditis, diseases of the hypothalamic-pituitary system (Itsenko-Cushing diseases, acromegaly, diabetes insipidus), chronic adrenal insufficiency, corticosteroma, obesity;
4. Isolating a leading clinical symptom or syndrome; establish the most likely or syndromic diagnosis of the disease; recognize endocrinological aspects of syndromes: arterial hypertension and arterial hypotension, edema syndrome, urinary and nephrotic syndrome, anemia, limb pain, partial or complete vision loss, headache, convulsive syndrome;
5. Recognize less common endocrine diseases in order to refer the patient to a specialist endocrinologist: hyperprolactinemia, hypopituitarism, somatotrophic insufficiency, thyroid tumors, hypoparathyroidism and hyperparathyroidism, hormone-active tumors of the adrenal glands and genital glands, climacteric syndrome;
6. Determine the tactics of providing emergency medical care at the prehospital and hospital stages in diabetic (ketoacidotic), hypoglycemic coma;
7. Perform medical manipulations;
8. Form dispensary groups of patients among the population;
9. Determine the approach of examination and secondary prevention of patients subject to dispensary supervision; tactics of examination and primary prevention of healthy persons subject to dispensary supervision;
10. Maintain medical documentation for the patient;
11. Screening for critical endocrine diseases; assess incidence rates; identify risk factors for the occurrence and course of diseases;
12. Use unified clinical care protocols developed from evidence-based medicine.

**3. Content and logistic of the discipline**

Module Internal Medicine Content Module 3 "Fundamentals of Diagnosis, Treatment and Prevention of Major Diseases of the Endocrine System"	VII or VIII semester 30 hours / 1 credits	Practical classes №№ 1-10 Topics for self- study №№ 1-10
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The course includes 10 topics, which are divided into 1 thematic module.

**Content Module 3 "Fundamentals of Diagnosis, Treatment and Prevention of Major Diseases of the Endocrine System"**

Topic 1. Diabetes mellitus: epidemiology, classification, pathogenesis of the main symptoms, clinics, laboratory and instrumental diagnostic criteria. Differential diagnosis. Diabetes mellitus type 1 and type 2. Metabolic syndrome.

Topic 2. Diabetic angiopathies: classification. Retinopathy, nephropathy, diabetic foot. Methods of evaluation. Treatment of diabetic angiopathies.

Topic 3. Treatment of type 2 diabetes mellitus: diet, oral hypoglycemic agents: mechanisms of action, indications, contraindications, side effects. Treatment of type 1 diabetes mellitus: diet, insulin therapy. Types of the insulin, indications for insulin therapy. Methods of insulin therapy, management of insulin treatment. Combined treatment of diabetes mellitus.

Topic 4. Acute complications of diabetes mellitus. Ketoacidosis. Pathogenesis of the ketoacidosis and ketoacidotic coma. Clinics, diagnostics, treatment. Hypoglycemia: pathogenesis, clinics, diagnostics. Differential diagnosis and treatment of the hypoglycemic coma.

Topic 5. Hypothyroidism: classification, clinics, differential diagnosis, treatment. Hypothyroidism and ischemic heart disease. Thyroiditis: classification, clinics, diagnostic criteria, differential diagnosis, treatment. Iodine-deficiency diseases. Signs of endemic locality by WHO. Clinic, diagnostics, prophylaxis and treatment.

Topic 6. Thyrotoxicosis. Diffuse toxic goiter. Classification, clinics, diagnostics methods, differential diagnose. Treatment of diffuse toxic goiter. Antithyroid drugs, surgical treatment. Post-operative complications.

Topic 7. Diseases of the parathyroid glands. Hyperparathyroidism: etiology, pathogenesis, classification, clinical forms, diagnostic, differential diagnosis, treatment. Indications for surgical treatment. Hypoparathyroidism: etiology, pathogenesis, classification, clinical forms, diagnostics, differential diagnosis, treatment.

Topic 8. Chronic insufficiency of the adrenal glands. Addison's disease: etiology, pathogenesis, clinics, diagnostic criteria, treatment. Acute insufficiency of the adrenal glands, treatment.

Topic 9. Cushing disease: etiology, pathogenesis, clinics, diagnostic, classification, differential diagnosis, treatment.

Topic 10. Hormonal-active adrenal tumors (Aldosteroma, Pheochromocytoma): etiology, pathogenesis, clinics, classification, diagnostics, differential diagnosis, treatment.

Obesity: classification, clinics, diagnostic, differential diagnostic, treatment, prevention.

The topics course reveal problematic issues of major endocrine diseases.

The practical sessions provide theoretical justification for the main issues of the topic and the learning of the following practical skills:

- 1) finding out the patient's complaints, history of the disease and life, conducting a survey on bodies and systems;
- 2) conducting a physical examination of the patient and determining the main symptoms/syndromes of the disease;
- 3) analysis of laboratory and instrumental study results;
- 4) establishing a diagnosis;
- 5) prescribing treatment;
- 6) definition of primary and secondary prevention measures;

In practical classes, students supervise 1-2 patients with diseases and conditions corresponding to the subjects of the lesson, followed by discussion of the correctness of diagnosis, differential diagnosis and therapeutic measures using the basics of evidence-based medicine and in accordance with National and International Guidelines and Protocols; consider 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, solve clinical situational problems and test tasks.

The student's individual work involves preparing for practical classes, developing practical skills, writing a workbook, processing scientific literature and writing reviews on the topics provided for individual work. The evaluation of the student's independent work, which is provided in the topic along with the audience work, is evaluated during the monitoring of the topic in the corresponding lesson.

Thematic plans of lectures, calendar plans of practical classes, thematic plan of independent extracurricular work, volume and directions of individual work are published on the site of the department.

The route for obtaining materials: Endocrinology department / for students / Full-time education / Dentistry / (4)course / Educational materials / or through the link [https://www.vnmu.edu.ua/en/endocrinology department #](https://www.vnmu.edu.ua/en/endocrinology%20department%20#). Access to the materials is carried out through the student's corporate account [s000XXX@vnmu.edu.ua](mailto:s000XXX@vnmu.edu.ua).

## 5. Forms and methods of monitoring academic performance

Current control in practical studies	Methods: oral or written survey, testing, electronic survey, solving situational problems, interpretation and evaluation of laboratory and instrumental research results, prescription recipes.
Final control of the discipline at the end of VII or VIII semester	According to the Regulation of the Academic process in National Pirogov Memorial Medical University, Vinnytsya (link <a href="https://www.vnmu.edu.ua/en/General%20information">https://www.vnmu.edu.ua/en/General information</a> )
Learning success diagnostic tools	Theoretical questions, tests, clinical situational tasks, practical tasks, demonstration of practical skills, clinical analysis of patients.

## 6. Assessment criteria

Knowledge assessment is carried out in accordance with the Regulations of the Academic process in National Pirogov Memorial Medical University, Vinnytsya (link [https://www.vnmu.edu.ua/en/General information](https://www.vnmu.edu.ua/en/General%20information))

Continuous assessment	On a four point system of traditional assessments: 5 «excellent», 4 «good», 3 «satisfactory», 2 «unsatisfactory»
Control of practical skills	According to the four-point system of traditional assessments
Credit	On a 200-point scale (the arithmetic average grade for the semester is converted into points) Credited: 122 to 200 points Not credited: less than 122 points (See Grading Scale)

## Criteria for student knowledge assessment

### Assessment of oral / written response during the current assessment

The grade "excellent" is given to a student who has deeply and comprehensively mastered the theoretical material, competently and logically teaches it. The answers are profound, meaningful and concrete. The student should know the peculiarities of clinical manifestations of diseases of the endocrine system, the general principles of diagnosis of diseases of the endocrine system, the principles of their treatment.

The grade "good" is given to a student who answered 75 per cent of the questions correctly and showed sufficient knowledge on issues that reflected the main sections of the curriculum. The student should know the peculiarities of clinical manifestations of diseases of the endocrine system, the general principles of diagnosis, treatment and prevention.

A grade of "satisfactory" is given to a student who correctly answered 50% of the questions. Incomplete answers, are generally limited to the simple list of components, signs, lines, without the slightest details. The student must have a mandatory minimum knowledge of theoretical and practical knowledge of endocrinology.

The grade "unsatisfactory" is given to a student who did not give a single correct answer or gave only an approximate answer to two questions. The student does not have a mandatory minimum of knowledge on endocrinology.

#### **Assessment of practical skills during the current assessment**

The grade "excellent" is given to a student who knows the course and sequence of the patient's physical examination, demonstrates the correct performance of the necessary practical skills and correctly, with clear formulations of generalizations and conclusions, draws up the patient's examination protocol.

A grade of "good" is given to a student who allows inaccuracies in carrying out a physical examination of a patient, but is able to independently detect errors made and can demonstrate performance of a practical skill as a whole, draws up a patient examination protocol.

Assessment of "satisfactory" is given to a student who knows the basics of a practical task, but experiences difficulties in conducting a physical examination of a patient, cannot demonstrate the complete correct sequence of practical skills, cannot fully interpret the results of the studies carried out, it is inconceivable to draw up a patient examination protocol.

The grade "unsatisfactory" is given to a student who cannot demonstrate the performance of a practical skill, experiences significant difficulties in conducting a physical examination of a patient, disrupts the procedure for performing practical work, does not record the progress of work in the patient's examination protocol.

#### **Evaluation of testing during the current assessment**

The grade "excellent" is given to the student who at carrying out test control is allowed no more than 10% of incorrect answers (volume of correct answers 90-100%). Provides correct answers to all test questions when solving clinically-oriented test tasks.

A grade of "good" is given to a student who makes no more than 20% of mistakes during the test. (volume of correct answers 80-89%). Provides correct answers to most test questions when solving clinical-oriented test tasks.

The grade "satisfactory" is given to a student who makes mistakes in no more than 40% of test tasks (the amount of correct answers is 60.5-79%). When solving clinically-oriented test tasks, it provides the correct answers to only some questions to the test.

A grade of "unsatisfactory" is given to a student who correctly solves less than 60% of the test tasks in a test survey. When solving clinical-oriented test tasks, he cannot provide the correct answers to the test questions.

When assessing the mastery of each topic, the student is graded on a 4-point (traditional) scale using the accepted and approved criteria for assessing disciplines. This takes into account all types of work provided by the methodological development for the study of the topic. The student must receive a grade on each topic.

The calculation of points for the discipline is carried out in accordance with the current regulations on the organization of the educational process in National Pirogov Memorial Medical University, Vinnytsya by converting the arithmetic mean of the current success of the student on a universal 200-point scale. Individual points are added to the accrued points for current success (provided that they are credited on the basis of successful completion of individual tasks).

The maximum number of points that can be obtained by the student after mastering the discipline - 200 points. The minimum number of points is 122 points. )

The results of the student's credit are recorded in the statement of performance with the specified number of points and the mark "passed" or "failed". Disciplines are not credited to the student if the number of points received is less than 122, or the study of the discipline is performed incompletely, as evidenced by academic debt.

### **7. Policy of discipline / course**

The student has the right to receive high-quality educational services, access to contemporary scientific and educational information, qualified tutoring during the study of discipline and mastering practical skills. The policy of the department during the providing of educational services is a student-centered, based on normative documents of the Ministry of Education and the Ministry of Health of Ukraine, the Statute of the University and the Procedure for the Providing of Educational Services regulated by the main principles of the organization of the educational process in National Pirogov Memorial Medical University, Vinnytsya and the principles of academic integrity ( link <https://www.vnmu.edu.ua/en/General> information).

**Adherence to the rules of National Pirogov Memorial Medical University, Vinnytsya, safety techniques** according to the rules of internal routine of National Pirogov Memorial Medical University, Vinnytsya and rules of conduct at the "AIR ALARM" signal.

#### **Requirements for preparation for practical classes.**

The student should be prepared for a practical lesson, testing tasks for the current topic should be solved in a workbook, diagrams and tables are filled.

A student should come to class on time, without delay. A student who is more than 10 minutes late is not allowed to the practical class and must work it in the prescribed manner.

In practical classes, the student must be dressed in a work uniform (medical gown, hat). Students who do not have a work uniform are not allowed to practice.

The student must follow the rules of safety in practical rooms and at the department.

When discussing theoretical issues, students should demonstrate tolerance, courtesy and respect for their colleagues and the teacher; when performing practical tasks, the workplace should be kept in order and be cleaned after performing practical work.

#### **Usage of mobile phones and other electronic devices.**

The use of mobile phones and other electronic devices in the classroom is allowed only during electronic testing or surveys.

**Academic integrity.** When studying the discipline, the student must be guided by the Code of Academic Integrity and Corporate Ethics of National Pirogov Memorial Medical University, Vinnytsya (link : <https://www.vnmu.edu.ua/en/General> information)/ Code of Academic Integrity).. In case of violation of the norms of academic integrity during the current and final controls student receives a grade of "2" and must work it out to his teacher in the prescribed manner within two weeks after receiving an unsatisfactory assessment).

**Missed classes.** Missed classes are working out in the manner prescribed by Regulations of the Academic process in National Pirogov Memorial Medical University, Vinnytsya (link <https://www.vnmu.edu.ua/en/General> information) at the time of work out schedule (published on the website of the department [https://www.vnmu.edu.ua/en/ Department of Endocrinology #](https://www.vnmu.edu.ua/en/Department%20of%20Endocrinology%20#)) to the teacher on duty. To work out missed lesson student must provide a completed workbook

protocol on the relevant topic, take a test and answer questions in writing or orally to the topic of the lesson. The reworking of missed lectures is carried out after providing a thesis of lecture material, or writing an abstract, or preparing own presentation on the topic of missed lecture.

**The procedure for admission to the discipline final control** is given in the Regulation of the Academic process in National Pirogov Memorial Medical University, Vinnytsya (link <https://www.vnmu.edu.ua/en/General> information). Students who do not have missed practical classes and lectures and received an average traditional grade of at least "3" are allowed to final control.

**Additional points.** Individual points in the discipline that student can receive for individual work, is determined by the results of his individual work according to Regulation of the Academic process in National Pirogov Memorial Medical University, Vinnytsya (link <https://www.vnmu.edu.ua/en/General> information) and policy of the course.

**Conflict resolution.** In case of misunderstandings and complaints to the teacher because of the quality of educational services, knowledge assessment and other conflict situations, student should submit his / her claims to the teacher. If the issue is not resolved, the student has a right to apply to the head of the department according to Complaints Consideration Procedure ([https://www.vnmu.edu.ua/en/ General information / Basic documents](https://www.vnmu.edu.ua/en/General%20information/Basic%20documents)).

**Politics in terms of remote learning.** Distance learning regulated by the Regulations of the elements of remote learning in National Pirogov Memorial Medical University, Vinnytsya (<https://www.vnmu.edu.ua/en/General> information). The main training platforms for studying are Microsoft Team and Google Meets. Practical classes and lectures, exercises and consultations during distance learning is published on the website of the department ([https://www.vnmu.edu.ua/en/Department of Endocrinology/Student](https://www.vnmu.edu.ua/en/Department%20of%20Endocrinology/Student) or [https://www.vnmu.edu.ua/en/Department of Endocrinology / News](https://www.vnmu.edu.ua/en/Department%20of%20Endocrinology/News)). Feedback from teachers is via messengers (Viber, Telegram, WhatsApp) or e-mail (at the teacher's choice) during working hours.

## 8. Educational resources.

Educational and methodological support of the discipline is published on the website of the department ([https://www.vnmu.edu.ua/en/Department of Endocrinology/for students](https://www.vnmu.edu.ua/en/Department%20of%20Endocrinology/for%20students)). Consultations are hold twice a week according to the schedule.

### 1) Recommended reading:

1. Ендокринологія: підручник. За ред. Ю.І. Комісаренко, Г.П. Михальчишин - Вид. 5, перероб. та доп. – Вінниця. Нова Книга, 2020. – 536с.
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. – 456с.
3. Эндокринология. Учебник: П.Н. Боднар, Г.П. Михальчишин, Ю.И. Комиссаренко и др. Под ред.: проф. П.Н. Боднара. – Винница. Нова Книга, 2016. – 488с.
4. Endocrinology: Textbook (Ed. by prof. Petro M. Bodnar. – 4th ed. – Vinnytsia: Нова Книга, 2017. – 328 pp.
5. Davidson's Principles and Practice of Medicine, 23rd Edition, 2018.
6. USMLE Step 2 CK Lecture Notes 2017: Internal Medicine (Kaplan Test Prep). - 2016. - Published by Kaplan Medical. - 474 pages.

### 2) Additional literature:

1. Власенко М.В., Біляєва К.С., Паламарчук А.В. та ін. Лабораторна діагностика, діагностичні тести в ендокринології. - Видавничий дім Медкнига, Київ. – 2021. – 120с.
2. Власенко М.В., Паламарчук А.В. Діагностика та лікування хворих із вузловою формою зоба. – Вінниця. –2019.- 72 с.



3. Власенко М.В., Вернигородський В.С., Паламарчук А.В. та ін. Інтенсивна терапія в ендокринології. Навч.-метод. посіб. — К.: Видавничий дом «Медкнига», 2021. — 144 с.
4. Наказ МОЗ України №151 від 26.01.2023 «Уніфікований клінічний протокол первинної, екстреної, та спеціалізованої медичної допомоги «Цукровий діабет 1 типу у дорослих».
5. Клінічна настанова, заснована на доказах «Цукровий діабет». Київ 2022.
6. Наказ МОЗ України від 28.02.2023 №413 Стандарти медичної допомоги «Цукровий діабет у дітей»
7. Наказ МОЗ України «Стандарт медичної допомоги вроджений гіпотиреоз»
8. Наказ МОЗ України від 14.09.2021 №1946 Уніфікований клінічний протокол первинної, вторинної (спеціалізованої) та третинної (високоспеціалізованої) медичної допомоги «Нецукровий діабет».
9. Наказ МОЗ України від 03.12.2023 №427 Стандарти медичної допомоги «Ожиріння у дорослих».
10. Стандарти надання медичної допомоги хворим з патологічними станами щитоподібної та прищитоподібних залоз в умовах дії негативних чинників довкілля (видання 3, розширене) / За ред. О.В. Камінського. — Харків: «Юрайт», 2017.—312с.
11. 100 избранных лекций по эндокринологии. / Под ред. Ю.И. Караченцева, А.В. Казакова, Н.А. Кравчун, И.М. Ильиной. — Х: 2015. — 948 с.
12. International Textbook of Diabetes Mellitus, 2 Volume Set. Ed. by R.A. DeFronzo, E. Ferrannini, P. Zimmet, G. Alberti. 4<sup>th</sup> Edition, 2015. — 1228 p.
13. Harrison's Endocrinology. Ed. by J. Larry Jameson, Mc Graw – Hill., New York, Chicago, Toronto. e.a. 4rd edition, 2016. - 608 p.
14. Williams Textbook of Endocrinology. Ed. by Henry M. Kronenberg, Shlomo Melmed, Kenneth S. Polonsky, P. Reed Larsen. Saunders. 13 edition, 2015. — 1936 p.

### 3) Electronic resources:

1. National Pirogov Memorial Medical University, Vinnytsya: <https://www.vnmu.edu.ua/en>
  2. Library National Pirogov Memorial Medical University, Vinnytsya: <http://library.vnmu.edu.ua/for-foreign-students/>
  3. Центр тестування <https://www.testcentr.org.ua/uk/>
  4. МОЗ України <https://moz.gov.ua/>
  5. Центр громадського здоров'я МОЗ України <https://phc.org.ua/kontrol-zakhvoryuvan>
  6. Всесвітня організація охорони здоров'я <https://www.who.int/ru/home#>
  7. <http://www.iem.net.ua>
  8. <http://www.ipep.com.ua>
  9. <http://www.endosurg.com.ua>
  10. <http://www.endocrinology.mif-ua.com>
  11. <http://www.vitapol.com.ua>
- English:
- <http://www.diabetes.org>
12. <http://care.diabetesjournals.org>
  13. <http://www.oxfordmedicaleducation.com/>
  14. <https://www.thyroid.org>

### 4) Presentations of lectures, Methodological recommendations for practical sessions, consultations (once a week according to consultation schedule)

**9. The timetable and distribution of groups** with assigned teachers are published on the web page of the department ([https://www.vnmu.edu.ua/en/Department of Endocrinology/for students](https://www.vnmu.edu.ua/en/Department%20of%20Endocrinology/for%20students)).

**10. Questions to the final semester control** of the discipline are published on the web page of the department ([https://www.vnmu.edu.ua/en/Department of Endocrinology for students](https://www.vnmu.edu.ua/en/Department%20of%20Endocrinology%20for%20students)).

Silabus in the discipline "Endocrinology" discussed and approved at a meeting of the Department of Endocrinology with a course of postgraduate education National Pirogov Memorial Medical University, (Protocol No. 1 of August 29, 2023)

Responsible for the academic  
discipline " Internal Medicine,  
including Endocrinology"



Ass-prof. of HEI Anatolii  
PALAMARCHUK

Head of the endocrinology department



prof. of HEI Maryna  
VLASENKO