**INTERNATIONAL HIGHER SCHOOL OF MEDICINE**

**Internal Medicine Department**

# SYLLABUS
## Endocrinology

2026-2027 academic year
for students of medical faculty
3 course 6 semester
2 credits (60 h, including auditorial 38 h, independent work – 22 h)


**Lecturer:** **Kniazeva Valeriia**
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**Venue:** **Endocrine center, Vedanta SCD**


The Syllabus is considered
at the meeting of the department of internal medicine
Protocol № 1 dated 28.08.2026
Head of the department prof. Kudaibergenova N.T.

**Course Objective:** consists in mastering the knowledge of diseases of internal organs, as well as the principles of diagnosis, skills and abilities for the treatment and prevention of internal diseases.
After study of the discipline the student must:
**Knowledge:**
- issues of medical ethics and deontology;
- epidemiology, the influence of etiological factors and risk factors on the course and outcome of diseases of internal organs;
- modern theories of the pathogenesis of the main internal diseases in adults;
- modern classification, etiology, pathogenesis, clinical and laboratory investigation of the main diseases of internal organs;
- modern diagnostic methods, standards for the treatment of diseases of internal organs;
- therapeutic nutrition for internal diseases;
- examination of a patient with pathology of internal organs;
- principles of preventive measures - identification of risk factors, primary and secondary prevention of non-communicable diseases;
- rules for issuing certificates and certificates for work of patients with internal diseases.
**Skill:**
- communicate with patients in compliance with deontological norms and principles;
- get information about the disease, establish possible causes, taking into account the influence of social, hereditary, age and climatic factors on the body;
- assess the severity of the patient's condition and, if necessary, provide emergency care;
- make the right decision on the tactics of patient management;
- conduct functional, laboratory and instrumental studies, evaluate them;
- recognize the features of the clinical course, identify complications and concomitant diseases;
- conduct differential diagnosis, formulate and substantiate a clinical diagnosis;
- choose the tactics of management due to individual and pathogenetic characteristics;
- make a rehabilitation and prevention plan;
- monitor the patient in the intensive care unit;
- write a medical documentation in accordance with the law;
- analyze the scientific literature and prepare an essay on modern problems of diseases of internal organs.
**Attitude:**
- fundamentals of medical deontology and medical ethics;
- evaluation of the results of laboratory and special research methods (clinical, functional, morphological, biochemical, immunological, serological parameters of blood, urine, sputum, feces, cerebrospinal fluid, coagulogram indicators);
- interpretation of the results of functional examination of the respiratory system, cardiovascular system, gastrointestinal tract, liver, kidneys, central nervous system, blood system etc.;
- the method of management of internal diseases, pathological conditions, in accordance with the standard of medical care for diseases of internal organs;
- registration of medical documentation in the hospital and on an outpatient basis.
**Pre-requisites.**
Anatomy (macro-microanatomy)
Normal physiology
Pathological anatomy
Pathological physiology
Clinical Pharmacology
Propedtherapy
**Post-requisites.**
Surgical diseases
Occupational diseases
Oncology
Public health
Dermatovenereology
Outpatient conditions
Medical supervision
Family Medicine
Anesthesiology, Intensive Care, Emergency Conditions

## THEMATIC PLAN OF LECTURES

| № | Theme of leacture | Hours | Date |
|---|---|---|---|
| 1. | Diabetes mellitus, classification, etiology, pathogenesis, clinic, diagnostics | 2 | September 2026-June 2027 |
| 2. | Diabetes mellitus, management, complications | 2 | |
| 3. | The syndrome of hyperthyroidism, graves' disease, classification, etiology, pathogenesis, clinic, diagnostics, management, complications | 2 | |
| 4. | Hypothyroidism and iodine deficiency disorders classification, etiology, pathogenesis, clinic, diagnostics, management, complications | 2 | |
| 5. | Adrenal diseases. Definition, etiology, pathogenesis, classification, clinical presentation, disease progression, complications, diagnosis, treatment, and prevention. | 2 | |
| 6. | Pituitary diseases: diabetes insipidus, gigantism, acromegaly, classification, etiology, pathogenesis, clinic, diagnostics, management, complications | 2 | |
| 7. | Parathyroid diseases: hypoparathyroidism, hyperparathyroidism classification, etiology, pathogenesis, clinic, diagnostics, management, complications | 2 | |
| Total | | 14 | |

## THEMATIC PLAN OF PRACTICAL CLASSES

| № | Theme of practical class | Hours | Date |
|---|---|---|---|
| 1. | Diabetes mellitus. Pathogenesis, clinical features, and diagnosis. A clinical case study. | 2 | September 2026-June 2027 |
| 2. | Diabetes mellitus. Disease management and treatment. A clinical case study. | 4 | |
| 3. | Acute complications of diabetes mellitus. A clinical case study. | 2 | |
| 4. | Chronic complications of diabetes mellitus. A clinical case study. | 2 | |
| 5. | Obesity: classification, treatment, and prevention. A clinical case study. | 2 | |
| 6. | Module | 2 | |
| 7. | Graves' disease and thyrotoxicosis. Hypothyroidism syndrome. Differential diagnosis. A clinical case study. | 2 | |
| 8. | Adrenal diseases. Itsenko-Cushing syndrome. Hyperaldosteronism. A clinical case study. | 2 | |
| 9. | Pheochromocytoma. Adrenal insufficiency. Differential diagnosis. A clinical case study. | 2 | |
| 10. | Parathyroid gland diseases. Hypo- and hyperparathyroidism. Differential diagnosis. A clinical case study. | 2 | |
| 11. | Section 11: Diseases of the hypothalamic-pituitary region. Gigantism, acromegaly, diabetes insipidus. A clinical case study. | 2 | |
| 12. | Module | 2 | |
| Total | | 24 | |

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## THEMATIC PLAN OF INDEPENDENT WORK OF STUDENTS

| Unit № | Theme of independent work | Hours | Date |
|---|---|---|---|
| 1. | Medical history of diabetes mellitus type 1and type 2 | 2 | September 2026-June 2027 |
| 2. | A history of hypothyroidism. | 2 | |
| 3. | Medical history of diffuse toxic goiter. | 2 | |
| 4. | Medical history of acromegaly. | 2 | |
| 5. | Medical history of Diabetes Insipidus. | 2 | |
| 6. | Medical history of metabolic syndrome. | 2 | |
| 7. | Differential diagnosis of hypoglycemic and hyperglycemic coma with etiology, pathogenesis, clinical symptoms, laboratory and instrumental examinations, treatment. | 2 | |
| 8. | Differential diagnosis of endemic goiter and diffuse toxic goiter with etiology, pathogenesis, clinical symptoms, laboratory and instrumental examinations, treatment. | 2 | |
| 9. | Differential diagnosis of hypothyroidism. | 2 | |
| 10. | Chronic adrenal insufficiency. | 2 | |
| 11. | Acquired adrenal disorders . Hemorrhage and functional changes of adrenal glands. | 2 | |
| Total | | 22 | |

**Recommended reading for the discipline:**

**1. Basic:**

| № | Authors | Title | The year of publishing |
|---|---|---|---|
| 1. | Harrison. Braunwald E. | Internal Medicine | 2001 |
| 2. | Harrison. Braunwald E. | Principles of Internal Medicine | 2001 |
| 3. | Harrison. Braunwald E. | Principles of Internal Medicine | 2001 |
| 4. | Harrison. Braunwald E. | Principles of Internal Medicine | 2005 |
| 5. | Harrison.Wiener Ch.M. | Principles of Internal Medicine. Self-Assessment and Board Review | 2005 |
| 6. | Harrison. Fauci A.S. | Principles of Internal Medicine | 2008 |
| 7. | Harrison's Kasper D.L. | Principal of Internal Medicine. | 2015 |
| 8. | S Melmed, R Koenig, C Rosen., et al. | Textbook of Endocrinology | 2017 |
| 9. | Harrison<br>Liu KD, Chertow GM. | Principles of Internal Medicine | 2022 |

**1. Additional:**

| № | Authors | Title | The year of publishing |
|---|---|---|---|
| 1. | Davidson. Haslett C. | Priciples and Practice of Medicine | 2002 |
| 2. | Davidson. Boon N. | Priciples and Practice of Medicine | 2006 |
| 3. | Davidson. Ralston S. | Priciples and Practice of Medicine | 2018 |

**Grading policy and procedures for all types of work**

For the period of studying the discipline, the student gains points for the relevant parameters (per unit):
current score - 40 points
independent work - 20 points
control score (final assessment of knowledge per unit) - 40 points
Maximum score - 100 (40+20+40)

**Grading system for student's achievements**

| Criteria for assigning grades for the course | | | | |
|---|---|---|---|---|
| Maximum score | Intervals | | | |
| | « unsatisfactory» | « satisfactory» | «good » | «excellent» |
| 40 | 0-23 | 24-30 | 31-35 | 36-40 |
| Interval criteria | Does not complete homework or prepare for class, and is inactive in class. Unable to apply acquired knowledge to solving clinical problems. | Completes assignments, but with serious errors, is active in class, but does not differentiate the diagnosis of various diseases. | Completes homework, and is almost always prepared for class. Able to solve clinical problems, but with minor errors. | Completes homework, and correctly analyzes clinical problems involving various diseases |
| IWS-20 | 0-11 | 12-14 | 15-17 | 18-20 |
| Interval criteria | assignments for independent work are not completed, or they contain numerous errors; the student has not met the requirements for composing the work | The tasks for independent work are completed, but with errors; 2 points are missing from the program. | assignments for independent work are completed, mostly without errors or with minor errors, one point is missing from the program | assignments for independent work are completed without errors, the material is fully prepared according to the sample |
| 40 | 0-23 | 24-30 | 31-35 | 36-40 |
| Interval criteria | The answer represents disjointed knowledge with significant errors regarding the question;<br>- fragmentary and illogical presentation; the student does not understand the | The answer is incomplete, contains errors in detail, the ability to convey the meaning of generalized knowledge is not demonstrated, and the student's speech requires correction and adjustments;<br>- the logic and consistency of | A complete, detailed answer to the question was given, demonstrating the ability to distinguish essential and non-essential features and cause-and-effect relationships;<br>- the narrative is not logical | A complete, detailed answer to the question posed is provided;<br>- the answer has a clear structure and logical sequence, reflecting the |

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|---|---|---|---|---|
| | connection between the question being discussed and other subjects of the course; speech is illiterate;<br>- significant errors in demonstrating exercises; incorrect choice of tactics for the given disease;<br>- incorrect answers to additional questions. | presentation are impaired; the student is unable to independently identify essential and non-essential features and cause-and-effect relationships;<br>- errors in the prescription and correct choice of treatment method;<br>- numerous errors in patient management tactics;<br>- the student is unable to answer most of the additional questions. | enough, with isolated errors in details, which the student corrected with the teacher's assistance;<br>- insufficient confidence and speed in demonstrating the exercises;<br>- isolated errors in technique;<br>- answers to additional questions are correct, but not sufficiently complete and clear. | essence of the concepts, theories, and phenomena being explored;<br>- the exercises are selected and performed correctly;<br>- answers to additional questions are clear and concise; |

**Conduct Policy: (lateness, absence, behavior in the auditorium, late submission of work).**

- Punctuality and completion of tasks.
- Mandatory attendance of classes.
- Attending class in a clean medical uniform.
- Eliminating conversations on a cell phone in the classroom.
- Active participation in the learning process.
- Doing homework on time.
- Academic detention at the time specified by the teacher.

For violations of the Conduct Policy, the total points for discipline might be reduced to 1-10 points.

**Academic Ethics Policy.**

- Be tolerant, respect the opinions of others.
- Formulate objections in the correct form.
- Constructively support feedback in all classes.
- Plagiarism and other forms of dishonest work are unacceptable. Plagiarism includes the following: the absence of references when using printed and electronic materials, quotes, thoughts and works of other authors or students.
- Prompting and cheating during tests, exams, and classes is unacceptable as well as passing an exam for another student, unauthorized copying of materials.

For violations of the Academic Ethics Policy, the total points for the discipline may be reduced to 1-10 points.

**Guidelines for the lessons of the discipline**

Unit №1: «Diabetes mellitus, Obesity»
Key questions covered in lesson 1.
Lecture - 2 h
Practice – 2 h
The definition of diabetes mellitus.
Classification.
Clinical manifestations.
Diagnosis. Differential diagnosis.
DM type 1. DM type 2. Gestational DM. Other types of DM.
Literature:Williams Textbook of Endocrinology, 14th Edition, 2020.
p. 1338-1349

Key questions covered in lesson 2.
Lecture - 2 h
Practice – 2 h
Treatment of DM.
Medical nutrition therapy. Life style modification. Training and self-control.
Insulin therapy (insulin, starting insulin therapy, technique of insulin injections, insulin pump therapy).
Hypoglycemic drugs (sulfonylurea drugs, biguanides, incretins, blockers reabsorption of glucose in kidneys, thiazolidinediones,SGLT-2 inh.).
Features course and complications.
Literature:Williams Textbook of Endocrinology, 14th Edition, 2020.
p. 1338-1349

Key questions covered in lesson 3.
Lecture - 2 h
Practice – 2 h
Ketoacidosis.
Hypoglycemia.
Hyperglycemic hyperosmolar state.
Diabetic microangiopathy (retinopathy, nephropathy).

Diabetic macroangiopathy (ischemic heart disease, cerebral disease, peripheral artery atherosclerosis). Clinical manifestations. Diagnosis. Differential diagnosis. Treatment.
Diabetic neuropathy, clinical features, diagnosis, treatment. Diabetic osteoarthropathy, diagnosis, treatment.
Diabetic foot syndrome, diagnosis and treatment.
Literature:Williams Textbook of Endocrinology, 14th Edition, 2020.
p. 1338-1349
Key questions covered in lesson 4.
Lecture - 2 h
Practice – 2 h
Diabetic microangiopathy (retinopathy, nephropathy).
Diabetic macroangiopathy (ischemic heart disease, cerebral disease, peripheral artery atherosclerosis). Clinical manifestations. Diagnosis. Differential diagnosis. Treatment.
Diabetic neuropathy, clinical features, diagnosis, treatment. Diabetic osteoarthropathy, diagnosis, treatment.
Diabetic foot syndrome, diagnosis and treatment.
Literature: Williams Textbook of Endocrinology, 14th Edition, 2020.
p. 1338-1349

Key questions covered in lesson 5.
Lecture - 2 h
Practice – 2 h
The definition of obesity
Classification,
treatment, and prevention.
Literature: Williams Textbook of Endocrinology, 14th Edition, 2020.
p. 1338-1349

Unit №2: « Thyroid diseases, adrenal disease, neuroendocrinology, parathyroid disease»

Key questions covered in lesson 7.
Lecture-2h
Practice – 2h
Graves' disease. Definition. Features course and complications.
Clinical manifestations. Diagnosis.
Treatment (thyreostatics, radioactive iodine treatment, indications for surgical treatment). Differential diagnosis.
Thyrotoxic heart, diagnosis, treatment.
Thyrotoxic crisis, diagnosis, treatment, prevention, resuscitation.
Endocrine ophthalmopathy, diagnosis, treatment, prevention
Literature: Williams Textbook of Endocrinology, 14th Edition, 2018.

Key questions covered in lesson 8.
Lecture-2h
Practice – 2h
Cushing's syndrome. Hyperaldosteronism.
Definition. Classification. ACTH – Dependent syndrome. ACTH-independent syndrome. Features course and complications. Clinical manifestations.
Diagnosis. Differential diagnosis.
Treatment (medical, surgical, indications for radiation therapy)
Literature: Williams Textbook of Endocrinology, 14th Edition, 2020.
p. 480-527, p. 543-570

Key questions covered in lesson 9.
Lecture-2h
Practice –2h
Adrenal insufficiency, pheochromocitoma. Definition. Etiology and classification. Features course and complications.
Clinical manifestations. Diagnosis. Differential diagnosis.
Treatment.
Adrenal crisis, diagnosis, resuscitation. Catecholamin crisis, diagnosis, resuscitation.
Literature: Williams Textbook of Endocrinology, 14th Edition, 2020.
p. 543-570

Key questions covered in lesson 11.
Lecture-2h
Practice – 2h
Parathyroid diseases: hypoparathyroidism, hyperparathyroidism .

Definition. Features course and complications.
Clinical manifestations. Diagnosis.
Diagnostic test (Chvostek, trousseau). Differential diagnosis.
Treatment.
Hypoparathyroid crisis.

Literature: Williams Textbook of Endocrinology, 14th Edition, 2020.
p. 1196-1248

Key questions covered in lesson 12.
Lecture-2h
Practice – 2h
Pituitary diseases: diabetes insipidus, gigantism, acromegaly. Definition. Classification, Central and nephrogenic.
Features course and complications. Clinical manifestations.
Diagnosis. Differential diagnosis.
Treatment. Syndrome hypopanpituitarism, etiology, classification, clinic, treatment.
Symonds Syndrome –Shehana.
GH – producing pituitary tumors.
Features course and complications. Clinical manifestations. Diagnosis.
Differential diagnosis.
Treatment (medication, indication for radiotherapy and surgical treatment).
Literature: Williams Textbook of Endocrinology, 14th Edition, 2020.
p. 279-315

**Methodological instructions for the implementation of independent work on the discipline**

1. Working with literature (read the material on the topic, make a synopsis)
2. Summary of information (find the answer to the questions given in the lesson)
3. Working with clinical case (make a diagnosis, make a check-up plan, prescribe treatment)
4. Answer the case questions (answer the MCQ questions given to the case)